Make Differences Count

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Janna Heynen - Behnke

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through inclusion in STEM organizations**

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through *Inclusion* in STEM Organizations**

JANNA HEYNEN-BEHNKE

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Benefiting from *Workforce Diversity* through *Inclusion* in STEM Organizations

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Technische Universiteit Eindhoven, op gezag van de rector magnificus prof.dr. S.K. Lenaerts,

voor een commissie aangewezen

door het College van Promoties,

in het openbaar te verdedigen op

woensdag 4 oktober 2023 om 16:00 uur

door

Janna Heynen-Behnke

geboren te Westerland

Dit proefschrift is goedgekeurd door de promotoren en de samenstelling van de promotiecommissie is als volgt:

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Het onderzoek of ontwerp dat in dit proefschrift wordt beschreven, is uitgevoerd in overeenstemming met de TU/e Gedragscode Wetenschapsbeoefening.

Für Irès, meine Eltern & Maike

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"Versprich mir, dass du immer daran denkst:
Du bist mutiger als du glaubst,
stärker als es scheint und klüger als du denkst."

- Christopher Robin -

CONTENTS

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CHAPTER 1
General Introduction

1.1 CHALLENGES IN THE STEM SECTOR

The science, technology, engineering, and mathematics (STEM) sector represents a knowledge-extensive work environment that changes rapidly (Smit et al., 2020). The STEM sector is highly valuable for our economy as its continued development drives economic growth and competitiveness, it solves critical global challenges, while creating high-quality jobs and economic opportunities (Frey & Osborne, 2017; Manyika et al., 2017). In order to survive, STEM organizations need to be adaptive and keep up (or even better, contribute) to the innovation in the field. To improve their competitive advantage, STEM organizations must deal with a massive challenge: a lack of workforce diversity (Fry et al., 2021).

The workforce in STEM organizations is predominantly homogenous and thus shows similar characteristics (Fry et al., 2021). During the last decades minority groups (e.g., women or ethnic minorities) are slowly accessing the STEM field, which originates from a combination of societal phenomena. First, during the last two centuries, women have entered the labor market and gained other civil rights in western society. Second, the baby boom generation, which makes up a large portion of the STEM workforce, is retiring, which leads to a shortage of qualified workers (Manyika et al., 2017). Lastly, the changes of digitalization and internationalization lead STEM organizations to look for more diverse talents (Frey & Osborne, 2017). Despite of these developments, a significant gap persists, with women and other minorities being underrepresented in many areas of STEM (Eagly, 2021; Holman et al., 2018). Scholars have shown that this imbalance originates from human and organizational biases rather than the ambitions and capabilities of, e.g. females (Faniko et al., 2022).

The lack of diversity in the STEM workforce can lead to restricted perspectives and less innovation and creativity (Hülsheger et al., 2009; Nederveen Pieterse et al., 2013). In addition, a predominantly homogenous workforce can also contribute to an unwelcoming and hostile work environment for the few employees from underrepresented groups, negatively impacting job satisfaction, retention, and overall well-being (Liu et al., 2021). Although STEM organizations diversify their workforces, and hope to benefit from the variety of input, the impact of workforce diversity on the functioning and well-being of employees is contradictory and still debated (Jaiswal & Dyaram, 2019; Van Dijk et al., 2012; van Knippenberg et al., 2020).

1.2 WORKFORCE DIVERSITY IN STEM ORGANIZATIONS

In recent years, there has been a growing awareness of the importance of diversity in STEM organizations, and many organizations have tried to increase diversity (Fry et al., 2021; Hunt et al., 2018). Organizations hope to achieve greater innovation and competitive advantage by diversifying the knowledge input contributing to STEM products (e.g., scientific knowledge or technologies). The different individual characteristics and team compositions are highly emphasized. As Cheya Dunlap (Chief Inclusion and Diversity Officer at Honeywell) put it in a Forbes Magazine interview (October, 2021):

> *"In a world that's increasingly reliant on technology,*
> *it's people who are the ultimate competitive advantage."*

Workforce diversity is defined as the numerical representation of variety in employees' characteristics within an organization. People can differ regarding surface characteristics, such as gender or age, and deep-level aspects, which are not immediately observable (e.g., educational background or cultural values). Research and organizations expect that employees who reflect on work issues based on various expertise and perspectives can potentially achieve better solutions (Hülsheger et al., 2009; Joshi & Roh, 2009). The reasoning includes that employees express innovative ideas and minimize groupthink, which is an individuals' tendency to follow the group's opinions and attitudes without critical reflection or considering alternative solutions (Janis, 1991). To illustrate the issue at hand, imagine a team of data scientists working on an artificial intelligence software (e.g., a face recognition technology). All data scientists share similar demographic characteristics (e.g., gender identification, age, and nationality) and educational backgrounds. It is likely that these team members come forward with similar ideas regarding the software's features and that this homogenous team arrives at a product that may or may not be the best solution. Multiple studies have shown that face recognition technologies are most inaccurate on women and people of color, and least accurate on women of color (Grother et al., 2019). Most likely, the biases originate from a lack of diversity in the training data, which might be the result of a homogenous group developing the technology (e.g., men inclined to use primarily male photos to train the technology; Lunter, 2020). Suppose the development team consists of people with different life experiences (e.g., due to demographics, culture, education,

or other life events). In that case, the group will most likely produce a variety of features for the software. The team then can reflect on the different options and pick the best and strongest solution.

Although academics and practitioners agree upon the powerful potential that workforce diversity bears, studies have shown positive, negative, and insignificant effects of workforce diversity (Joshi & Roh, 2009).

While workforce diversity can increase innovation and finding the best solutions to problems because multiple perspectives build the outcome, diversity might also raise conflicts and stress, particularly if employees communicate ineffectively within work groups (Van Knippenberg et al., 2004). Scholars conclude that diversity in and of itself is not meta-analytically related to performance, innovation, or well-being and that other workplace characteristics play an essential role in managing workforce diversity effectively (Nishii et al., 2017; Van Dijk et al., 2012). In this regard, researchers such as Shore et al. (2018) have proposed that it is necessary to create work environments in which employees sense inclusion, a feeling of being an established group member whose authenticity is valued (Jansen et al., 2014). In that case, employees are more willing to accept that different perspectives exist, share their unique information, and collectively process that information to create new knowledge (Nembhard & Edmondson, 2006).

> *"Diversity is being invited to the party, inclusion is*
> *being asked to dance." – Vernã Myers*

The presented metaphor highlights the difference between workforce diversity and workplace inclusion. The author emphasizes that only bringing individuals with varying backgrounds and characteristics into an organization is insufficient to benefit from their differences. To utilize the differences, all employees need to feel that they are valued group members, thus, feel included. Employees appreciated for their characteristics are likelier to share divergent ideas (van Knippenberg et al., 2020). These teams will thus derive desired outcomes like innovation (Chow, 2018; Mor Barak et al., 2016).

1.3 THE ROLE OF WORKPLACE INCLUSION

Research has shown that more inclusion in diverse work environments leads to beneficial work outcomes such as more organizational commitment (Li et al., 2019; Brimhall, 2019), better performance (Chen &Tang, 2018), or increased helping behavior and creativity in teams (Chung et al., 2019). Important to notice is that inclusion consists of two aspects, belongingness and valued uniqueness, and employees need to have a high

sense of both to feel included. Shore et al. (2011) introduced the inclusion framework (Figure 1.1), which illustrates four quadrants that display the different options of employee experiences as the combinations of high and low feelings of belongingness and feelings of valued uniqueness. Employees experience **Inclusion** if their work unit provides them with the feeling that they are esteemed group members while they at the same time can maintain their individual identity in the group (Chung et al., 2019). The rationale is linked to Brewer's (1991) optimal distinctiveness theory, which states that individuals aim to balance two fundamental needs, namely the need for similarity compared to the need for individuation. If employees achieve to satisfy both needs, they experience inclusion.

Moreover, **Assimilation** displays the quadrant with high feelings of belongingness and low valued uniqueness. In this scenario, employees are considered group insiders because they adopted to the majority group's norms and behaviors. Simultaneously, employees suppress their own identity and thus their uniqueness (Cable et al., 2013). Teams in which minority employees assimilate to the majority cannot benefit from the diversity this group may bear because employees adjust and behave like their colleagues and different perspectives, experiences, and viewpoints do not get shared (Leroy et al., 2021). Next, the quadrant **Differentiation** refers to employees with a low experience of belongingness but a high experience of valued uniqueness. Employees and their unique characteristics are valued and essential for organizational success. Nevertheless, the employee does not feel like a group insider. This might be due to an exceptional and isolated work function (e.g., an employee with highly specialized expertise). Additionally, if businesses justify recruiting and promoting minority employees for the business case for diversity, this potentially contributes to employees feeling differentiated rather than included (Benschop & van den Brink, 2014; Täuber, 2020). Finally, **Exclusion**, thus, a low feeling of belongingness accompanied by a low feeling of valued uniqueness, arises when dominant insider groups exist, and a specific employee is not seen as an insider with individual value to the group (Mor Barak, 2015). In organizations, we can observe exclusion through, for example, microaggressions (Capodilupo et al., 2007), ostracism (Robinson & Schabram, 2017), or rejection (Wesselmann & Williams, 2017).

In conclusion, employees who feel a high sense of belongingness and valued uniqueness will have a better workplace experience, leading to a psychologically safe environment where employees openly share their different perspectives and expertise (Nembhard & Edmondson, 2006). Furthermore, improved knowledge sharing enables innovative work solutions (Leroy et al., 2021). Therefore, workforce diversity can only unfold its potential in an environment where employees are treated as group insiders who are valued for their unique characteristics. Based on this rationale, organizations that

Figure 1.1 Inclusion framework based on Shore et al., (2011)
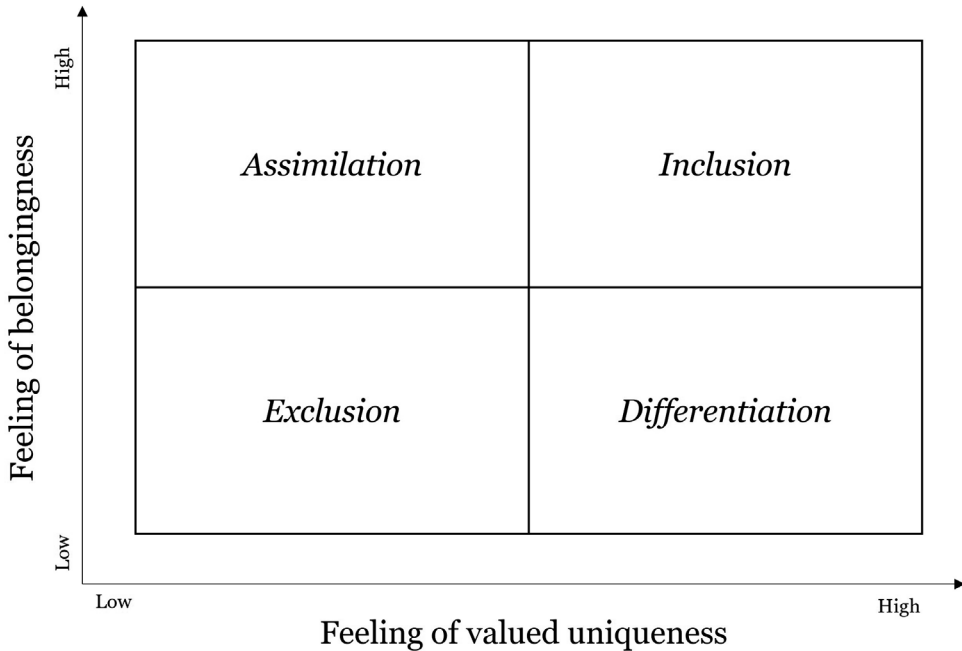
aim to increase workforce diversity and gain a competitive advantage are also advised to increase inclusion simultaneously.

Diversity is the mix. Inclusion is making the mix work. - Andrés Tapia

1.4 RESEARCH GAPS AND RESEARCH QUESTIONS

Although the attention to workforce diversity and inclusion in STEM has been immense in the last decade in practice and research, there are still remaining open questions (Chen & Tang, 2018; Mor Barak et al., 2016; van Knippenberg et al., 2020). Scholars have just started to explore the total potential of diversity and inclusion, which represents a multidimensional issue in organizations (Nishii et al., 2018), and thus requires more research attention to identify potential antecedents (e.g., leadership or employee behavior), possible outcomes connected to employee functioning and well-being (e.g., employee exhaustion or work attitudes) and contextual impact factors

(e.g., work characteristics). Additionally, STEM organizations continue to struggle with managing diversity and inclusion (European Commission, 2023), and much knowledge is still needed to sustainably attract and retain a diverse talent pool to an inclusive workplace. Therefore, in this dissertation, I want to address the following overall research question:

How do workforce diversity and inclusion contribute to employees' work experience in STEM organizations, and how can interventions contribute to diverse and inclusive environments?

To answer this question, I will investigate the interactive effects of various work characteristics (i.e., job resources and job demands) and employee experiences of workforce diversity and inclusion on employee functioning and well-being. Moreover, I will evaluate two interventions (i.e., an onboarding training and a recruitment policy) and their effects on the experiences of inclusion and the composition of workforce diversity. In my research, I emphasize the employee's role in understanding how organizations can stimulate employees' active participation in diversity and inclusion management. I apply various methodological approaches (i.e., quantitative surveys, qualitative interviews, and intervention research) and the appropriate statistical analyses to attain the results.

1.4.1 The Joint Impact of Work Characteristics and Workforce Diversity and Inclusion

Research had found inconclusive direct effects of workforce diversity on organizational and individual outcomes (Joshi & Roh, 2009; Van Dijk et al., 2012). Thus, scholars have come to emphasize that it is valuable to treat diversity as a context variable that interacts with other work conditions and jointly influences workers' health and work attitude (Jaiswal & Dyaram, 2019). I propose that work demands and resources interact with diversity and inclusion and jointly relate to employee functioning and well-being. Work demands refer to job and organizational factors that cost employees' energy to overcome them (e.g., workload, conflicts, or hindering procedures). On the contrary, work resources such as supervisor support or job autonomy refer to factors that enable learning and growth of employees and help them cope with the work demands (Bakker & Demerouti, 2017).

Research on the impact of work demands and resources is overall conclusive (Bakker & Demerouti, 2017). Work demands predict employee exhaustion, whereas job resources

relate to positive work attitudes such as work engagement or affective commitment (e.g., Crawford et al., 2010). However, studies regarding the impact of work demands on the impairment of employee health- and well-being do not consider the organizational context of rising diversity in STEM organizations (Catalyst, 2019). Simultaneously, workforce diversity and inclusion research neglect the interrelations with other work characteristics (Jaiswal & Dyaram, 2019). Therefore, I aim to investigate the interaction of work characteristics, workforce diversity, and inclusion on employee functioning and well-being. By combining insights from occupational health and diversity and inclusion research, I contribute to both literature streams by answering the following research question:

Research Question 1: How do perceived workforce diversity and experienced inclusion shape the relations between work characteristics (i.e., work demands and resources) and employee functioning and well-being?

In order to provide an insightful answer to this question, I will first present a conceptual framework, in **Chapter 2**, based on a thorough presentation of the literature. The framework suggests that the extent of workforce diversity influences the work environment and that these aspects jointly send signals to employees regarding their inclusionary status (Leary & Baumeister, 2000). I assume that homogeneous STEM organizations are dominated by processes and policies that are developed based on the needs of the majority group. Minority employees thus might experience unfavorable work conditions (Walton & Cohen, 2007).

Unless you consciously include, you will unconsciously exclude. - Stephan Frost

Moreover, the framework states that employees' feelings of inclusion impact their well-being and functioning at work. The framework proposes that organizations that foster inclusion and thus enable employees to feel good and perform well will have more diversity among employees and more gender equality in the long run since they attract and retain a diverse workforce.

Furthermore, in **Chapter 3**, I empirically examine the interaction of work demands, workforce diversity, and feelings of inclusion to enhance our understanding of the collective impact on employee well-being and functioning (i.e., employee exhaustion and affective commitment). With a survey sample of 1187 employees from a STEM university, I test a moderated moderation model, which hypothesizes that in diverse work environments, inclusion could buffer the harmful effects of work demands on employee

functioning and well-being.

In **Chapter 4**, I investigate the moderation effect of workforce diversity on the relationship between inclusive leadership and employee functioning and well-being. Inclusive leadership may provide valuable resources to employees, such as fair treatment and support to share differing opinions (Randel et al., 2018). These resources potentially lead to beneficial employee behaviors (i.e., seeking resources behavior, helping behavior, task performance) and work attitudes such as work engagement (Nishii & Leroy, 2022). Nevertheless, the effectiveness of inclusive leadership most likely depends on workforce diversity. Inclusive leadership might be more effective in more diverse environments because it helps diverse groups overcome barriers between subgroups and supports group members in exchanging information successfully (Shore & Chung, 2021). To attain the results, I conduct a survey study among 152 leader-employee dyads from German and Dutch STEM organizations.

1.4.2 Effectiveness of Interventions to Improve Workforce Diversity and Inclusion Feelings

Dobbin and Kalev (2016) were among the first to share evidence-based approaches regarding how diversity management can be effective in organizations. They reported that basic principles such as involving multiple organizational stakeholders in solving the problem would help make diversity programs work. Moreover, bringing people with different backgrounds together to decrease biases due to stereotyping, and making key stakeholders (e.g., leaders) accountable for change, would be appropriate tactics. They also suggested recruitment efforts targeting specific minority groups and voluntary programs for employees to learn how to reduce biases and increase inclusive behavior. Although many organizations have implemented programs to promote diversity and inclusion in STEM, there is limited research on the impact and effectiveness of these initiatives (Moreu et al., 2021).

"Unfortunately, although research into team diversity suggests that current diversity management practices are suboptimal, neither team diversity research nor research on diversity management practices speaks directly to the policies and practices that would best stimulate synergy from diversity."
- Knippenberg et al., 2020, p. 76

Besides, although few organizations have successfully promoted diversity and

inclusion (Hunt et al., 2018), limited knowledge for STEM organizations exists to replicate the success. Therefore, within this dissertation, I aim to answer the following two questions:

Research Question 2: How can organizational interventions stimulate employees' feelings of inclusion and perception of social support?

Research Question 3: How can organizational interventions increase workforce diversity?

Aiming to uncover how STEM organizations can effectively improve feelings of inclusion among their workforces, I conduct, in **Chapter 5**, a quasi-experimental study and evaluate an onboarding intervention for doctoral candidates at a STEM university. The self-training targets newcomers' proactive onboarding behaviors (i.e., relationship building, sensemaking, networking, resource-seeking, and personal strengths-use) and thus encourages self-expression and social interaction. I hypothesize that participants who engaged in the onboarding intervention will report higher feelings of belongingness, valued uniqueness, and perceived social support.

Moreover, a consistent gender gap in STEM exists. Therefore, I am interested in the procedure, stakeholders, and underlying mechanisms of a recruitment policy implementation that aims to boost the female faculty at a STEM university. **Chapter 6** represents a mixed-method research project that uncovered macro-, meso-, and micro-level factors facilitating or limiting the implementation of a radical gender equality policy. Moreover, the implementation of this policy displays a unique possibility to examine, in addition to antecedents, also outcomes of such a radical approach (i.e., objectively regarding the application and hiring rate of female professors, as well as subjectively regarding awareness of gender issues, perceived gender balance, and percived cultural change toward more gender equality). This study includes a great range of data from various stakeholders (i.e., Twitter user, the Dutch Institute of Human Rights, the Executive Board of the university, hiring professors, and female hires). I aim to provide valuable knowledge for scholars and practitioners longing to create more gender diversity in organizations.

1.4.3 The Role of Individual Employees in Diversity and Inclusion Management

Theoretically, individual employees play a crucial role in creating more workforce diversity and inclusion in organizations (Van Knippenberg et al., 2004). They are thought to contribute to a more inclusive environment by being mindful of their own biases and assumptions (Jackson et al., 2014), treating their colleagues with respect and empathy (Nelissen et al., 2017), and actively seeking to understand and appreciate different perspectives and experiences (Li et al., 2019). Furthermore, employees can promote diversity and inclusion initiatives within their organizations and collaborate with their colleagues to create a culture of inclusion (Nishii et al., 2018). Nevertheless, empirically, we lack sufficient knowledge to define the role of employees in diversity and inclusion management. Research predominantly focused on what organizations and leaders can do to facilitate diverse and inclusive workplaces (e.g., Hunt et al., 2018; Nishii & Leroy, 2022; Shore & Chung, 2021). In this regard, we have little understanding of the concrete behaviors that employees engage in. Therefore, I strive to answer the following research question:

Research Question 4: How can employees' proactive and prosocial behaviors contribute to effective diversity and inclusion management?

Within my research, I emphasize the role of individual employees to uncover how they contribute to increase diversity and inclusion. Moreover, I am interested if they can enhance their own inclusion experience at work and what organizations can do to stimulate their active participation in diversity and inclusion management.

First, in **Chapter 4**, where I study leader-employee dyads in STEM organizations, I demonstrate how inclusive leadership positively relates to employee helping and seeking resources behavior. These two behaviors are valuable for knowledge exchange and, thus, for the effective use of diverse information to create innovation (Hajro & Gibson, 2017; Nelissen et al., 2017).

Every person is a new door to a different world. - Unknown

Identifying to what extent inclusive leadership can stimulate these employee behaviors can bring critical insights for diversity management in STEM organizations since, unlike cognitions and emotions, which were the focus of previous research, behaviors are trainable (Dubbelt et al., 2019). Moreover, I hypothesize that employee

helping and seeking resources behaviors might explain the impact of inclusive leadership on employee functioning and well-being. Contrasting previous inclusion research, I discover employees' active role in shaping their work outcomes. Overall, I aim to provide theoretical and practical insights regarding how organizations can foster diversity and inclusion through the behavior of their employees.

Moreover, in **Chapter 5**, I examine if employees who proactively engage in knowledge exchange and social interactions may enhance their own experience of inclusion. Organizations cannot offer an inclusive work environment (e.g., through procedures or leadership) if employees cannot express their individual needs (Cable et al., 2013). In that case, employees will even suppress their identity, adapt to the organizational norms, and thus assimilate, which conflicts with the requirements of an inclusive workplace (Shore et al., 2018). Through the onboarding intervention study, I aim to show that encouraging newcomers to proactively seek information and social relations will improve these employees' integration into a new workplace.

Finally, in **Chapter 6**, in which I evaluate the implementation of a radical gender equality policy, I am particularly interested in the extent to which aspects (e.g., societal beliefs communicated via Twitter or the upper management's commitment toward the radical policy) potentially shape the implementation behaviors of employees (i.e., hiring professors). Identifying factors that boost or restrict implementation behaviors provides valuable knowledge that enhances the implementation of gender quality policies (Kalpazidou Schmidt & Graversen, 2020).

I investigate the research questions in the succeeding chapters of the dissertation, with an overview provided in Figure 1.2. The following five chapters have been written as independent academic manuscripts and may also be read as such. As a result, an overlap between chapters does exist (e.g., an explanation of the research project's background or the constructs of interest).

Figure 1.2 Overall research model of this dissertation

Workforce diversity — Chapter 2,3,4

Work characteristics and conditions

Job demands — Chapter 2, 3
- Work-self conflict
- Discrimination
- Non-transparent organizational procedures

Job resources
- Leadership — Chapter 2
- Empowering young researchers — Chapter 4
  (i.e., Onboarding intervention) — Chapter 5
- Enabling female academics — Chapter 6
  (i.e., Radical gender equality policy)

Workplace inclusion — Chapter 3

Employee behaviors
- Helping behavior — Chapter 4
- Resource-seeking
- Relationship building — Chapter 5
- Sensemaking
- Networking
- Resource-seeking
- Strengths-use
- Implementation behaviors — Chapter 6

Employee functioning & well-being
- Health (e.g., employee exhaustion) — Chapter 2, 3
- Affect (e.g., affective commitment) — Chapter 2, 3, 6
- Attitude (e.g., work engagement) — Chapter 2, 4, 6
- Task performance — Chapter 2, 4

Outcomes related to diversity & inclusion
- Perceived social support — Chapter 5
- Experienced inclusion — Chapter 2, 5
- Diversity (i.e., gender composition) — Chapter 6

Context of STEM organizations

CHAPTER 2

A Framework on Creating Inclusion to Leverage Workforce Diversity

"Organizations that foster inclusion and thus enable employees to feel good and perform well will have more diversity among employees and more gender equality in the long run since they attract and retain a diverse workforce."

2

ABSTRACT

Over the past couple of decades, organizational scholars have been investigating barriers that prevent minorities (e.g., women) from entering and remaining at all levels of organizations. Consequently, the management of workforce diversity and inclusion became a central topic for organizations and research. Despite this attention, our understanding of how diversity shapes the work context in organizations and how these can be translated into an inclusive climate that fosters employees' performance and well-being is limited. Based on insights from the diversity and inclusion literature and occupational health research, this chapter presents a conceptual framework that suggests that work environments are influenced by the extent of workforce diversity that is present in the organization (e.g., homogeneous organizations mostly have processes and infrastructures that are developed by and based on the needs of the majority group, minority employees might thus face an unfavorable work context). Moreover, the framework points out that the work context affects employees' experience of inclusion. The more resourceful one's work (e.g., the freedom to fulfil tasks in an authentic way) and the less demanding the work environment (e.g., fewer discrimination), the more one feels an accepted member of their work environment. Higher levels of feeling included are likely to result in better performance and well-being of employees. Finally, the framework proposes that inclusive organizations, in which employees feel good and perform well, will, in the long term, have more diversity among employees and more gender equality because they attract and retain a diverse workforce.

Keywords: Workforce diversity, inclusion experiences, work demands, work resources

2.1 INCONCLUSIVE EFFECTS OF WORKFORCE DIVERSITY IN ORGANIZATIONS

For the last decades, workforce diversity, the degree to which individuals vary regarding demographical or functional characteristics (Van Knippenberg & Schippers, 2007), displays a highly prevailing topic among researchers and practitioners. Among others, three main trends can be distinguished that emphasize the importance of diversity for organizations (Mor Barak & Travis, 2009). First, rising diversity demonstrates a reality for organizations that they need to address. For instance, the share of female employees that gained access to the labor market increased rapidly due to the change in social attitudes towards educating young women at the beginning of the 20th century. Second, organizations are expected to go beyond legal obligations, offer equal opportunities for everyone, and prevent discrimination. (United Nations Development Programme, 2019). In this regard, especially the barriers that hinder women and other social minorities from entering and remain at all levels of organizations found great attention. Third, workforce diversity is understood to provide a competitive advantage to organizations. On the one side, different competencies and perspectives can guide improved solutions (De Dreu & West, 2001). On the other side, organizations that offer equal opportunities enjoy a positive image that increases the organization's attractiveness to customers, cooperation partners, and employees (Devillard et al., 2016).

Although organizational diversity is a topic of high interest, research is inconclusive about how workforce diversity affects organizational and individual outcomes (Joshi & Roh, 2009; Van Dijk, Van Engen, & Van Knippenberg, 2012). Scholars have shown that workforce diversity can positively relate to innovation, commitment, retention, and, ultimately, performance (Hülsheger et al., 2009; Joshi & Roh, 2009; Mor Barak et al., 2016). Especially, the increased access to a variety of abilities, knowledge, and perspectives from different individuals enables teams to derive at innovative and improved solutions. This argumentation is grounded in an information and decision-making perspective (De Dreu & West, 2001) and leads organizations to invest in initiatives that promote diversity to gain a competitive advantage. Despite these positive findings, research contrariwise has shown that diversity might lead to negative outcomes such as intergroup conflicts, lack of cooperation, and higher turnover rates (e.g., Jehn et al., 1999; Pelled et al., 1999; Schneid et al., 2015). Explanations that research offers in this regard are based on social categorization processes, in which group separation leads to communication barriers, cultural resistance and discrimination (Van Knippenberg &

Schippers, 2007). Overall, scholars conclude that diversity in and of itself is not meta-analytically related to performance or well-being. Instead, it depends on how the team or organization manages and reacts to diversity (Mor Barak et al., 2016; Van Dijk et al., 2012).

By means of investigating efficient approaches to diversity management, researchers such as Mor Barak and Cherin (1998) or Nishii (2013) have come to emphasize the importance of recognizing and valuing the unique contribution of individuals. They stress that organizations cannot benefit from rising workforce diversity without fostering an inclusive environment. Inclusion refers to employees' feelings of being an accepted part of the organization and that their authenticity is valued (Jansen et al., 2014). The experience of inclusion addresses two central human needs: the need for belongingness and the need for authenticity. True inclusion takes place only if both needs are satisfied, and employees are expected to feel and perform better (Ely & Thomas, 2001; Shore et al., 2011). Increasing employees' experience of inclusion offers several benefits for employees and organizations in terms of individual well-being and performance. Researchers argue that solely focusing on increasing diversity will not provide organizations with the benefits they desire (Sabharwal, 2014). Commonly used by diversity and inclusion experts is the phrase: 'Diversity is being invited to the party; inclusion is being asked to dance.' This metaphor underlines the difference between these two constructs and emphasizes that it is not enough to only bring individuals with varying backgrounds and characteristics into the organization. By means of these efforts, organizations aim to increase the pool of employees' expertise, work approaches, and perspectives to reach a competitive advantage. However, the research emphasizes that to be able to utilize these differences and communicate their different perspectives, feelings of inclusion play a crucial role. Employees who are appreciated and accepted for their individual characteristics are more likely to share ideas even if these are different from the norm. These employees will thus derive at desired outcomes like innovation, employee commitment, and satisfaction (Chow, 2018; Mor Barak et al., 2016). Moreover, employees who feel belonging to their work unit and valued for their expertise will most likely in return also respect co-workers different contributions, which increases respect and stimulates the efficient use of differences (Chrobot-Mason et al., 2013).

Although inclusionary practices might display an effective approach to facilitating differences among employees, it is not yet clearly defined how organizations can stimulate inclusion. In this regard, little is known about the extent to which the context of work interacts with perceived diversity and which work aspects potentially harm or boost employees' experience of inclusion. Aiming to close this gap, this chapter provides a conceptual framework, presented in Figure 2.1, that sheds light on employees' subjective

experience of their work environment and the joined effects of work characteristics, diversity, and inclusion on employee well-being and performance. Taking the rationale of job demands- and resources theory (Bakker & Demerouti, 2017), sociometer theory (Leary & Baumeister, 2000) and social identity theory (Tajfel and Turner, 1979; Turner et al., 1987), we link insights of diversity literature and occupational health research to increase the understanding of how characteristics of the work environment, the degree of workforce diversity and inclusion interactively influence employee outcomes. The conceptual framework suggests that the experience of the work environment is interdependent on the diversity present in an organization. Furthermore, characteristics of the work environment are supposed to have the potential to increase or decrease employees' experience of inclusion. Lastly, the framework proposes that inclusion positively influences individual well-being and performance. Overall, these mechanisms suggested by the framework provide practical insights for organizations. By introducing a work characteristic's perspective to diversity and inclusion literature, the proposed framework guides organizations to promote diversity and inclusion effectively. It helps managers understand how diversity and inclusion translate into an unfavorable work context (e.g., discrimination and majority group favoritism) that negatively influences employee outcomes. Additionally, by uncovering possible synergetic effects of work characteristics (i.e., job/organizational demands and resources), organizations receive insides into how they can adapt work and organizational processes to positively stimulate diversity and inclusion within their organizations and enhance employee well-being and performance.

2.2 ANTECEDENTS OF INDIVIDUAL INCLUSION EXPERIENCE

As introduced, inclusion is crucial for employees to express and utilize their differences. Indeed, empirical research shows that in the presence of workforce diversity, inclusionary practices enable employees to make use of their full potential (Nishii, 2013). Furthermore, increasing inclusion feelings among employees minimizes relational barriers, increases motivation, and creates an environment in which employees feel accepted and valued, which in return improves employee well-being and individual as well as organizational performance (Mor Barak, 2015; Nishii, 2013). However, less is known regarding possible aspects that influence the experience of employee inclusion (Shore et al., 2018). Research in this regard presents dominantly conceptual and qualitative work, whereby propositions either stay rather abstract (e.g., increasing socialization and

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Figure 2.1 Overall research model of this dissertation
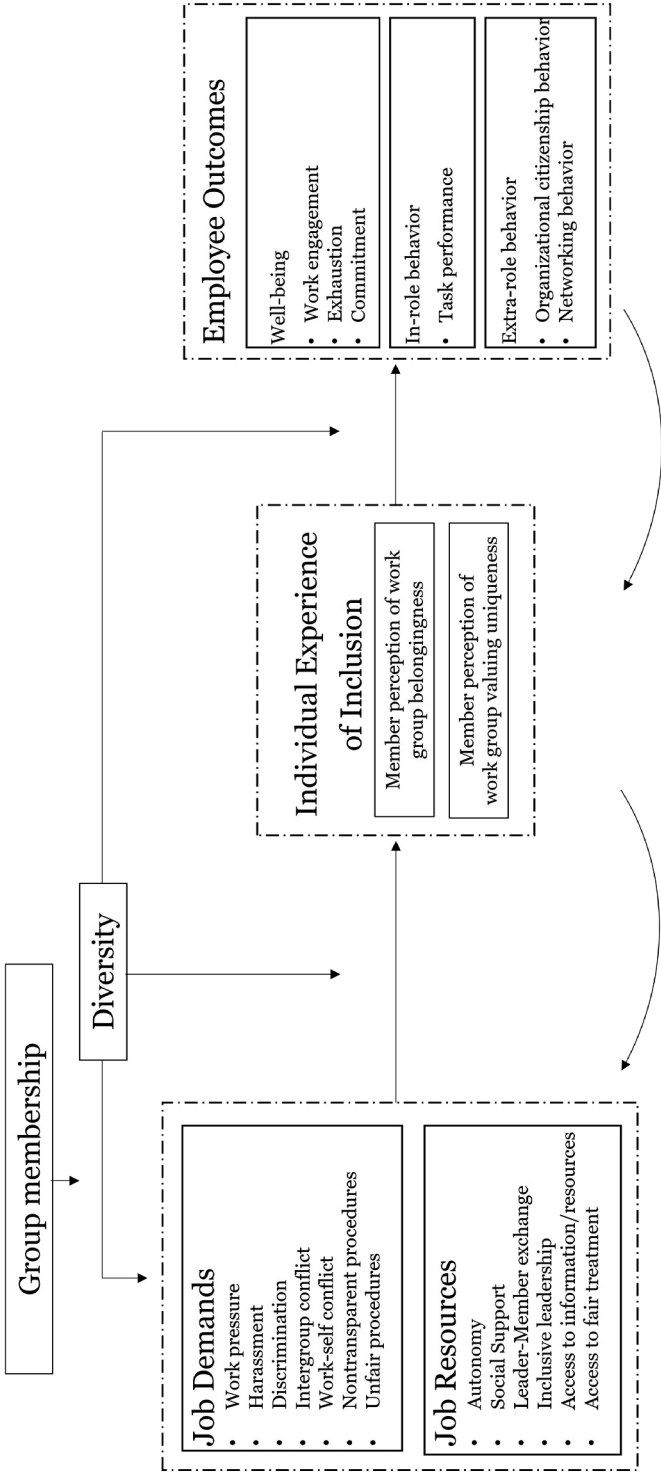
networking opportunities among employees) or refer to organizational-level aspects, such as organizational climate or transparent recruitment, promotion and development procedures (e.g., Daya, 2014; Sabharwal, 2014). Research stays rather wage regarding how work level characteristics interact with diversity and inclusion and especially which aspects of one's work influence the inclusion feelings of employees. However, based on sociometer theory (Leary & Baumeister, 2000), we know that individuals constantly observe their social environment for signals that cue their inclusionary status. Based on this rationale, employees seek to satisfy two fundamental needs, the need to belong to a social unit, such as a team or organization, and the need to be accepted and valued for their unique characteristics (Brewer, 1979; Shore et al., 2018). Therefore, work characteristics representing an employee's work environment are essential to consider when examining predictors of inclusion experiences.

2.2.1 How Workforce Diversity Shapes the Work Environment

Work characteristics and their effects are displayed in the JD-R model (as precursors of the deduced theory) developed by Demerouti, Bakker, Nachreiner, and Schaufeli (2001). The model has established itself in the last 19 years within the field of work psychology and beyond. It states that all characteristics of a job can be qualified as either demands or resources. These demands and resources can be directly related to the specific work of individuals (job demands and resources) or are aspects caused by the organizational context (organizational demands and resources). Overall, demands are defined as those physical, psychological, social, or organizational aspects of one's job that require continuous physical and/or psychological effort and are thus able to create physiological and/or psychological costs (Demerouti et al., 2001). Demands can occur at different levels of an organization and can be differentiated into quantitative and qualitative demands. Quantitative demands include time pressure and work overload. Qualitative demands display emotional demands, role ambiguity or conflict, and aspects of an unfavorable physical work environment. Similarly, resources, which offer means to deal with the demands of the job, achieve work goals, or stimulate personal growth, learning, and development, can be found at different levels of an organization (Bakker & Demerouti, 2007). At the level of tasks (e.g., task variety and autonomy), at the level of organization of work (e.g., role clarity and participation in decision making), at a level of social relations (e.g., supervisor feedback and co-worker support), and at the organizational level (e.g., development opportunities, and access to information).

Taking the rationale of the JD-R theory, the conceptual framework in this chapter argues that the degree to which employees individually perceived diversity could be indicative of certain demands and resources on the job and the organizational level. The framework addresses two important aspects in this regard. First, the work environment and, thus demands and resources perceived by an employee might vary according to the extent to which employees differ. Thus, a homogenous workplace might differ in terms of demands and resources compared to a diverse workplace. Second, the perceptions of demands and resources may also vary depending on an employee's group membership (i.e., majority vs minority employee). In this regard, a work environment characterized by low diversity is one in which minority employees are substantially underrepresented in the organization. For instance, female employees are still underrepresented in technological organizations (Catalyst, 2019). As a consequence of this underrepresentation, organizational processes and policies, as well as work-specific characteristics, might not be in favor of female employees since organizational and workplace concerns are based on the needs and the input of the advantaged male majority group (Van Dijk, Van Engen, & Paauwe, 2012). This circumstance results in a favorable situation for male employees, which is why female employees in technological organizations might experience less access to information, higher levels of discrimination, or face not transparent organizational procedures (Eagly et al., 1992; Kraiger & Ford, 1985; Stauffer & Buckley, 2005). In addition, female employees in technological organizations likely have less access to job and organizational resources. Because of their disadvantaged position, they might perceive less fair treatment, less social support, or less freedom in doing their work compared to their colleagues who belong to a majority group (Mummendey & Wenzel, 1999). For instance, if an organization offers flexible workplaces in the office, this will likely be perceived as autonomy and a resource for the majority of employees. Nevertheless, employees who need to bring their children to daycare in the morning (i.e., parents as minority group) do not have the possibility to get one of the limited quiet working spaces and are therefore disadvantaged based on their social group. They will most likely feel that they are not treated fairly (decreased resources) and will experience a conflict between their work and their private responsibilities (increased demands).

To be able to explain the above-expressed processes, research points out that belonging to a minority group can lead employees to feel less valued in their work environment because of their social identity (Inzlicht & Good, 2005). Social identity theory (Tajfel and Turner,1986) states that people identify with those who are similar to them. Individuals further use this process to form in- and outgroups mostly based on surface characteristics, such as ethnicity, gender, or age. Social identity theory provides insights into how social structures impact the identification of an individual. In form of

social identification, people try to be as similar as possible to the ingroup characteristics and attribute positive aspects to their ingroup to maintain a positive self-picture. Additionally, people seek to be as different as possible to individuals of the outgroup. As a consequence of these social identity processes, in environments with low diversity where minority employees are underrepresented, differences between majority and minority groups are highly salient. Consequently, social identity processes enable discrimination against minority employees, as well as favoritism of majority employees for employees being similar to them. Therefore, procedures, policies, and work aspects are most likely in favor of the majority group. The presented framework, therefore, assumes that the perceived diversity within an organization influences job/organizational demands and resources and that the constellation of job/organizational demands and resources differs for minority compared to majority employees. The framework thus proposes:

Proposition 1: The experienced work characteristics are dependent on perceived diversity and an individual's group membership, such that in workplaces with low diversity minority employees experience higher demands and lower resources compared to majority group members.

2.2.2 How Work Characteristics Influence the Experience of Inclusion

As earlier stated, employees monitor their work environment for cues that inform them about how accepted and valued they are at work (Brewer, 1979; Leary & Baumeister, 2000; Shore et al., 2011). Therefore, work characteristics in the form of job/organizational demands and resources are potential signals that provide information about an employee's inclusionary status.

Based on the rationale of JD-R theory, job/organizational resources offer means to make your work suitable to your own abilities, resulting in increased work goal achievement and personal growth (Bakker & Demerouti, 2017). An environment that is characterized by resources such as autonomy, social support, and fair treatment encourages employees to use their unique capabilities and enables employees to express themselves, which, therefore, will be more likely perceived by employees as a workplace that encourages individual self-expression (Parker et al., 2006). In addition, employees might feel more welcomed in an organization that values the proactive expression of unique knowledge and abilities and thus feel more belonging to the organization. Next to that, resources provide access to information and means to be able to engage in one's

work group and be part of decision-making processes (Demerouti et al., 2001). For instance, an employee that receives social support at work creates a bond with colleagues, can contribute to decision-making, and receives feedback and emotional encouragement to work effectively. These stated aspects are at the same time identified as important dimensions of inclusion (Mor Barak & Cherin, 1998; Shore et al., 2011). Employees who feel valued for their unique characteristics and as appreciated members of the organization as a total will automatically experience a higher level of inclusion. Thus, the framework states the following proposition:

Proposition 2: Job/organizational resources will be positively associated with experienced inclusion.

Divergent from resources, job and organizational demands potentially hinders employees' self-expression at work. More specifically, quantitative demands (e.g., work load, work pressure) cost energy and time of an employee that cannot be used to engage at work with one's unique self (Bakker & Demerouti, 2017). Draining employees' energy potentially causes negative physical or psychological consequences such as headaches or strain (Bakker & Demerouti, 2007). Individuals who suffer from these consequences may perceive their environment as less suitable for them; feelings of belonging and the belief that authenticity is valued will decrease. Additionally, qualitative demands such as conflicts with colleagues, emotional demands, and role ambiguity hinder employees from expressing themselves at work. A work environment in which employees perceive a high amount of these demands signals to them that they are not allowed to be truly themselves and that their characteristics do not fit the organization. Hofhuis et al. (2014) showed for instance that unfair treatment lowered employees' identification with the organization. The extent to which an employee identifies with the organization is of great importance for the experience of inclusion because it highly relates to the dimension of belongingness (Jansen et al., 2014; Shore et al., 2018). Overall, it is most likely that demands such as unfair treatment, work pressure, or conflicts with colleagues negatively impact the individual experience of inclusion. The framework therefore concludes:

Proposition 3: Job/organizational demands will be negatively associated with experienced inclusion.

2.3 CONSEQUENCES OF DIVERSITY AND INCLUSION FOR EMPLOYEE WELL-BEING AND PERFORMANCE

The extent to which employees feel accepted and valued in their organizations most likely determines their well-being. Employee well-being is an individual state that involves characteristics of physical and psychological health. Other people's reaction (i.e., the extent to which people accept or reject others) was found to be vital to an individual's physical and psychological well-being (Leary et al., 1995). In line with the underlying processes of JD-R theory, the less an employee feels accepted and valued in the work unit, the more it exhausts employees' mental and physical resources, which leads to depletion of energy as well as health problems (e.g., Bakker et al., 2003; Hakanen et al., 2006). In contrast, through a motivational process, feelings of inclusion might increase employee motivation and commitment, as individuals feel appreciated and find meaningfulness in their work because they feel socialized and useful to the organization (Jansen, 2015; Joshi & Roh, 2009; Nishii, 2013; Van Dijk et al., 2012). Employees who feel included find an important balance of two of their fundamental needs fulfilled: the need to feel similar to others while maintaining their unique identity (Brewer, 1979). In connection, this need fulfillment potentially enhances the satisfaction of employees as well as engagement at work (Mor Barak et al., 2006). Indeed, research on diversity and inclusion approaches and their effects on individual outcomes found that organizational efforts in this domain were associated with increased commitment (Chen & Tang, 2018; Hwang & Hopkins, 2012) and job satisfaction (Acquavita et al., 2009). Additionally, experiences of inclusion enhance the social exchange relationship of employees with their organizations and thus creates commitment to the employer (Flynn, 2005). For example, Gonzales and DeNisi (2009) found that women were more committed to their organization and less likely to quit when they experienced more balance of power and inclusion across social groups within their organizations. In contrast, perceived boundaries, which separate employee groups and thus cause a lack of inclusion experience, potentially lead to increased conflicts, disengagement, and stress (Bernstein et al., 2010; Mor Barak et al., 2006). Based on these arguments, the framework concludes the following proposition:

Proposition 4: Experienced inclusion in the workplace will be positively associated with an individual's well-being.

In addition to the well-being also, the performance of employees is thought to be

influenced by the extent to which individuals feel included in the work environment. An Individual's task performance, which most typically results in organizational performance, is fulfilling the requirements specified in the formal job description (Sonnentag et al., 2008). Scholars argue that individuals who feel included spend less energy dealing with exclusion and more energy toward in-role behaviors. Furthermore, employees are assumed to display higher performance in an inclusive environment since feeling valued and accepted triggers them to exert more effort on working tasks. Literature partially explains this phenomenon with reciprocity, whereby the employee wishes to give something back to the organization since the organization offers development and self-expression opportunities through inclusion (Chen & Tang, 2018). Based on this reasoning, employees are thought to increasingly engage in their work and willingly contribute ideas and input for the organisation's benefit (Ferdman et al., 2010). Additionally, feelings of inclusion, beyond having positive motivational effects, are also likely to increase employees' tendencies to share perspectives and 'think out of the box', which might enable them to arrive at improved work outcomes. Moreover, employees who feel included are more likely to believe that what they do matters to themselves and others. These beliefs raise the meaningfulness of one's work and likely stimulate employees' performance (Kahn, 1990).

In line with the arguments above, Chen and Tang (2018) found that the performance of employees who experienced a higher level of inclusion was rated higher by the supervisor. Moreover, feelings of inclusion were positively associated with employee performance across different industries, occupations, and cultures (Cho & Mor Barak, 2008; Pearce & Randel, 2004). Additionally, inclusion feelings and an individual's identification with the work team are conceptually related (Jansen et al., 2014). Research points out in this regard that individuals who highly identify with the members of their work team are more willing to contribute to the collective goals (Meeussen & van Dijk, 2016; Tyler & Blader, 2000), are more productive (Meeussen et al., 2014; Worchel et al., 1998), and are willing to give more than what is formally expected of them (Van Knippenberg & Van Schie, 2000). In other words, feeling included in a group/organization should be related to higher in-role and extra-role performance. Based on these arguments, we present the following proposition:

Proposition 5: Experienced inclusion in the workplace will be positively associated with an individual's performance.

Overall, the framework proposes a positive association between feelings of inclusion and employee well-being as well as performance. This relationship most likely depends

on how much employees differ in the work environment (Ferdman et al., 2010). As described earlier, the direct effects of diversity on performance and well-being have been inconclusive (Mor Barak et al., 2016; Van Dijk et al., 2012). Researchers propose considering diversity in organizations as more complex and treating employees' differences as a moderator that influences the relationships between predictors and individual outcomes. In this regard, the extent to which employees differ from each other might have a potentially strengthening effect on the relationship between an individual's experience of inclusion and performance or well-being. In this vein, a more diverse group contains a greater range of different perspectives, abilities, and knowledge, which is enabled when employees feel included and, therefore, comfortable and appreciated to share these individual differences. This, in return, should result in a better quality of employees' performance and increased well-being, such as job motivation. Employees who feel included, respected, valued, trusted, and safe that they will not be excluded will be more willing to share but also to consider other employees' ideas and opinions, which leads to improved outcomes. These improvements depend highly on perceived diversity in the work environment. In a homogenous group, less variety of skills, knowledge, and backgrounds is present and can not benefit the employees. Thus, inclusion might not play as a crucial role as it does in a work environment characterized by high perceived diversity (Ehrhart et al., 2014; Ferdman et al., 2010). Thus, the model proposes that the degree of perceived diversity in the work environment will moderate the relationship between experienced inclusion and employee well-being as well as performance.

Proposition 6: The relationship between experienced inclusion and employee well-being/ performance will be strengthened by the level of diversity perceived in the workplace, such that the relationship is stronger when diversity in the workplace is high.

2.4 FEEDBACK LOOPS: INFLUENCING THE WORK ENVIRONMENT AND DIVERSITY THROUGH HEALTHY, PRODUCTIVE, AND HIGHLY INCLUDED EMPLOYEES

As argued in the paragraphs above, the presented framework displays that work characteristics, diversity, and inclusion affect employee well-being, in-role, and extra-role performance in the short term. Additionally, long-term effects might be visible

in the extent to which employees' outcomes affect the perceptions of inclusion, work characteristics, and diversity in organizations in return. In this regard, we argue that employees who are motivated and energetic at work most likely feel committed to their organizations and thus have an increased sense of belonging. Furthermore, energetic and motivated employees who voluntarily engage in extra-role behavior will embrace an environment where they experience greater acceptance of differences and individuality.

The well-being and behavior of employees were found to affect the organizational environment (i.e., job resources and job demands; Bakker & Demerouti, 2017). Nembhard and Edmondson (2006) showed that individuals attached to an organization feel psychologically safe to express their perspectives and ideas at work. In addition, highly committed employees show congruency between their work and individual identity (Burke & Reitzes, 1991), which reads from a person-organization fit perspective that these employees have a higher feeling of belongingness to the organization (Kristof-Brown et al., 2005). In addition, energetic and motivated individuals have abundant resources to invest in other people and thus engage more in inclusive behaviors (Bakker & Demerouti, 2017). We, therefore, assume that the less exhausted and more committed an employee feels, and the more an employee helps colleagues, the higher the contribution of this employee to an environment that is perceived as highly inclusive. Based on this argumentation, the presented framework proposes the following:

Proposition 7: An individual's well-being, in-role performance, and extra-role behavior will be positively associated with experienced inclusion in the workplace.

Overall, one can assume that inclusive environments free up resources for all employees while diminishing work and organizational demands. On the one hand, resources are enhanced by creating trust among employees, stimulating interpersonal communication, and, therefore, facilitating a feedback culture in which colleagues can openly share different opinions and feel safe to ask for feedback (Collins & Smith, 2006). Moreover, enhanced inclusion releases the motivation and energy of employees to engage in extra-role behavior, such as helping behavior. This, in return, provides additional support by leaders and colleagues and can be utilized by employees as an additional resource. Furthermore, in inclusive environments, employees understand their diverse contributions as a source of insight, which they are willing to share (Ely & Thomas, 2001). These insights expand personal resources that can be integrated and shared in their work environment and thus enrich the workplace.

On the other hand, along with the support for employees to be their authentic selves, inclusion prevents employees to assimilate to colleagues or the dominant organizational

culture (Shore et al., 2018). An inclusive environment is characterized by equal treatment and practices that respect the needs of all employees. This decreases additional work or organizational demands that employees otherwise might face. First, inclusion is thought to minimize relational barriers and, thus, potential conflicts with colleagues (Jehn et al., 1999). Second, inclusion creates workplaces where employees meet each other respectfully, which decreases discrimination and harassment on the work floor (Van Knippenberg & Schippers, 2007). Lastly, trust among employees, a supportive environment, as well as knowledge about employees' differences and strengths might enable individuals to structure their workload more efficiently, ask for help, and use the strengths of others. In return, using a diverse network and receiving help will decrease employees' workload and work pressure.

Proposition 8: Experienced inclusion in the workplace will be positively associated with an individual's perception of job/organizational resources and negatively to the perception of job/organizational demands.

Moreover, feelings of inclusion have the potential to influence the perceptions of organizational diversity. As stated above, employees' experience of inclusion illustrates itself in feelings that they belong and are accepted for their authenticity (Jansen et al., 2014). If these two basic human needs are satisfied, employees feel welcomed, valued, and comfortable within their organizations (Chen & Tang, 2018). Employees will also most likely be more satisfied with their work and thus are less likely to leave their organization (Brimhall et al., 2014). Taking the example of increasing gender diversity, employers can keep recruited female employees by increasing women's experience of inclusion. Suppose the organizational climate, processes, and practices meet women's needs. In that case, they will more likely feel like an accepted member of the organization and thus want to stay with it.

Additionally, to maintain (diverse) employees, organizations create a pro-diversity employer branding by promoting inclusion (Jonsen et al., 2019). Generating a positive reputation will attract individuals that are differing from the employees that currently work in an organization because applicants receive signals from the organization that their unique backgrounds, set of skills, or ideas are going to be accepted and valued at the prospective workplace (Cunningham & Melton, 2014; Ng & Burke, 2005). Thus, organizations can attract women to their male-dominated environments by building up a pro-diversity image.

Overall, through both processes, decreasing employee turnover and increasing the attraction of new and diverse employees, organizations diversify their workforces by

increasing the share of minority employees. As a consequence of enlarging the pool of employees with different backgrounds, demographics and values, workforce diversity in an organization will increase.

Proposition 9: Experienced inclusion in the workplace will be positively associated with workforce diversity.

2.5 CONCLUSION

Previous work on diversity and inclusion in the organization did not integrate specific job and organizational characteristics as predictors for creating workplace inclusion. These relationships might display important insight into factors that prevent equality between minority and majority employees (e.g., women do not enter and remain at all levels of technological organizations). The research appears rather vague concerning how a desired inclusive organizational culture can be generated and how the work environment interacts with the diversity and inclusion present to predict employee outcomes. Looking at workforce diversity and inclusion from a JD-R perspective, we offer a theoretical framework that demonstrates how work and organizational characteristics are related to diversity and individual experience of inclusion as well as employee well-being and performance. Overall, the presented framework suggests that job and organizational demands harm employees' experiences of inclusion. In contrast, job and organizational resources can potentially increase employees' self-expression at work and enhance their inclusion experience.

Further, the feeling of inclusion is thought to positively stimulate employees' performance, well-being, and extra-role behavior. In this regard, scholars support the propositions of the framework that individuals who feel part of their work environment and accepted as their true selves feel more engaged and energetic at work and will perform better (Acquavita et al., 2009; Chen & Tang, 2018; Cho & Mor Barak, 2008). Moreover, the framework argues that based on social identification processes, the relationships between perceived inclusion, its predictors, and consequences depend on the degree of perceived diversity in the workplace. In this regard, minority employees experience the workplace differently (i.e., increased demands and decreased resources) than majority employees, especially if diversity is low and the minority position is thus salient. Additionally, the more variety of employees in an organization, the stronger the effects of work characteristics and inclusion on employee well-being and performance since the presence of differences makes inclusion highly essential. Finally, the framework points towards existing feedback loops, which highlight the inter-dependency of all

model aspects.

The framework makes several theoretical contributions to existing literature. First, we combine diversity and inclusion literature with work psychology research on the JD-R model and offer a more comprehensive view of the complex work environment in which diversity and inclusion interact to affect employee outcomes. Solely looking at diversity to estimate outcomes evoked criticism of insufficiently estimating individual or organizational outcomes (Guillaume et al., 2017; van Knippenberg & Schippers, 2007). The framework provides an extensive picture of modern workplaces by outlining how diversity and inclusion in interaction with job/organizational demands and resources influence employee well-being and performance. Overall, we provide a theoretical outline for future studies, which can be used to enable researchers to design interventions to study and increase inclusive work climate empirically. Furthermore, we contribute to the theory of diversity and inclusion by offering propositions that explain how diverse work groups can be led effectively. In this regard, we provide suggestions about which work characteristics can stimulate or harm inclusion feelings and, in turn, support the realization of positive performance and well-being within diverse work groups.

Next to theoretical implications, the framework suggests how organisations can influence the job design and organizational processes to foster equality and inclusion among employees. If diversity is rather low in an organization, it is important to consider that different employee groups might experience the work environment differently. Minority employees are more likely to experience lower work resources such as social support and higher work demands (e.g., work-self conflict or harassment) which might lead to lower satisfaction, commitment, and ultimately lower performance. Organizations are encouraged to cautiously examine their employees' work environments regarding the job and organizational-related aspects and processes and ensure they are fair and resourceful for all employees. In addition, by offering sufficient resources, employees can deal with work demands and express themselves at work. This will lead employees to experience a higher level of being valued and accepted in the organization: higher inclusion. Ultimately, this will lead to healthy, engaged, and pro-company behaving employees, which will automatically benefit organizational performance.

CHAPTER 3

Testing the Joint Effects of Work Characteristics, Diversity, and Inclusion

"Inclusion protects employees from the harmful effect of stressful work experiences. Employees who feel included in diverse workplaces are more committed to their organizations."

ABSTRACT

This study examines the interaction between stressful work experiences, workplace diversity, and inclusion. Our hypothesized moderated-moderation model argues that employee exhaustion and affective commitment suffer less from work-self conflict, discrimination, and nontransparent work procedures when employees feel included in diverse perceived environments. 1187 employees of a University of Technology completed electronic surveys. Results indicated that the negative relationships between stressful work experiences and organizational commitment were weaker if employees felt more included in perceived diverse work environments. Diversity and inclusion did not shape the relationships between stressful work experiences and employee exhaustion. The study emphasizes the buffering role of inclusion in diversifying organizations and offers a better understanding of how diversity and inclusion interact with other work aspects.

Keywords: Perceived diversity, inclusion, employee exhaustion, affective commitment

3

3.1 INTRODUCTION

The STEM (science, technology, engineering, and mathematics) sector remains exclusive to specific employee groups (e.g., females; Catalyst, 2019). Based on an ethical argument for inclusive recruitment and to ensure high quality of products and services, STEM organizations aim to increase workforce diversity by recruiting and maintaining employees who continue to be underrepresented in this sector. Workforce diversity refers to the differences between employees regarding demographic and functional characteristics (Van Knippenberg & Schippers, 2007). The impact of the diversification on the opportunity to maintain healthy and committed employees has received limited scholarly attention (Jaiswal & Dyaram, 2019). While workforce diversity is thought to guarantee creativity and holistic solutions because a variety of perspectives is considered during the development process, diversity might also put an extra burden on employees, especially if employees are not able to process the differences of colleagues within work groups (van Knippenberg et al., 2004). To minimize the negative and maximize the positive consequences of diversity, scholars point toward creating inclusive workplaces. An inclusive workplace is one in which employees' needs to belong and to be authentic are simultaneously satisfied (Jansen et al., 2014). Meta-analytic evidence indicates that experienced inclusion improves employees' well-being and performance (Mor Barak et al., 2016). Encouraged by these findings, researchers argue that solely examining the impact of workforce diversity on employee outcomes is insufficient. Rather, it is valuable to treat diversity as a context variable that interacts with other work conditions and jointly influences workers' health and work attitudes (Jaiswal & Dyaram, 2019).

Research showed that stressful work experiences harm employee exhaustion and affective commitment (e.g., Podsakoff et al., 2007). In this regard, hindrance stressors potentially restrict the work achievement of employees because they display constraints that evoke stress (Cavanaugh et al., 2000). These stressors, thus, threaten the retention of a diverse workforce in STEM organizations. Studies that provide insight into the impact of hindrance stressors and other relevant aspects that are related to further impairments of health- and well-being do not consider the organizational context of rising diversity in STEM organizations (Catalyst, 2019). Therefore, this paper aims to create a more comprehensive understanding of the consequences of work characteristics, diversity, and inclusion for STEM organizations. We follow the call of previous research (e.g., Jaiswal & Dyaram, 2019) to examine the interactive relations between these aspects and employee outcomes.

The contributions of this study are threefold. First, we intend to connect the diversity and inclusion literature with the occupational health research by linking insights from

the inclusion framework (Shore et al., 2011) and the challenge stressor- and hindrance stressor framework (e.g., LePine et al., 2005). We provide empirical insight into how feelings of inclusion in more diverse work environments shape the extent to which stressful work experiences relate to employee outcomes. Specifically, we propose that experienced inclusion can weaken the harmful relationship of hindrance stressors with employee exhaustion and affective commitment in perceived diverse workplaces.

Second, we follow the call to examine the health and affective consequences of diversity (Jaiswal & Dyaram, 2019) with the aim to provide STEM organizations with insight into how to increase and maintain their diversified workforce. In this regard, we avoid examining the impact of diversity on employee well-being in isolation but present interactive relationships of hindrance stressors, perceived diversity, and the degree to which employees feel included at work.

Lastly, as inclusion enables teams to benefit from their group diversity (Mor Barak et al., 2016), we aim to underscore that inclusion displays an important mechanism to prevent negative consequences for employees in diverse environments. In this way, our study extends the implications for diversity and inclusion management in STEM environments.

3.2 THEORETICAL BACKGROUND

3.2.1 The Impairment of Health and Well-being of STEM Employees

STEM organizations desire to expand and maintain their diversified workforce. In this regard, they need to sustain employees' occupational health and commitment to the organization. Stress represents a factor of the work environment that highly influences these employee outcomes (Boswell, et al., 2004). The literature argues that based on individual perceptions, stressors are either potentially gainful or potentially threatening for personal achievements and work-related accomplishments (Cavanaugh et al., 2000). On the one hand, challenge stressors (e.g., job complexity or workload) that are associated with an opportunity for personal growth potentially lead to goal achievement and stimulate positive emotions (LePine et al., 2005). On the other hand, stressors that are evaluated as work conditions that interfere with employees' work success and potentially lead to undesirable strain are defined as hindrance stressors (Cavanaugh et al., 2000). Examples of hindrance stressors are situational constraints, organizational politics,

resource inadequacies, and role conflicts (Crawford et al., 2010). Hindrance stressors diminish employee loyalty and increase psychological strain (e.g., Boswell etal., 2004). As we intend to offer insight to organizations on how to increase and maintain their diversified workforce, this study focuses on hindrance stressors rather than challenge stressors. Hindrance stressors might be especially threatening for employees in diverse environments if the employee does not experience inclusion. The following section zooms in on the work-self conflict, discrimination, and nontransparent work procedures. It discusses their relevance in the context of diversifying STEM environments and to what extent these are related to affective commitment and employee exhaustion. Furthermore, this study examines the impairment process of employee outcomes at different levels of inclusion experiences when increased workforce diversity is perceived.

3.2.2 Stressful Work Experiences in Diversifying Scientific Work Environments

A potential stressful work condition prevailing in the context of STEM is the interference between work and private life, as it has been found that conflicts between these two domains immensely impact work stress and dissatisfaction among university staff (Catano et al., 2010). Work-self conflicts are defined as conflicts that occur if responsibilities in the work domain restrict one's personal activities and interests (Demerouti et al., 2013). The concept is not restricted to the work versus family domain and is, therefore, a more inclusive concept to investigate the spillover of work into nonwork areas, including hobbies. Work-self conflict represents a stressful work experience as employees who experience a high work-self conflict have difficulties managing the interface between their work domain and their private domain and therefore have depleted energy due to a loss of resources (Demerouti et al., 2013). Specifically, Demerouti and colleagues (2016) showed that due to a scarcity of individual resources (e.g., time and energy), employees who experienced a conflict between their work and private domain encountered more stress and fewer work accomplishments. Self-regulation theories can explain the relationship between work-self conflict and employee outcomes. Self-regulation displays a process of comparing one's current and ideal situation. If individuals perceive discrepancies, they undertake behavioral and cognitive actions to fix the inconsistency (Carver & Scheier, 1981). Employees that need to deal with negative aspects at work will experience more energy depletion and, subsequently, more stress and dissatisfaction. Furthermore, research has shown that work-self conflict undermines individuals' personal resources (e.g., self-efficacy), which

leads to decreased task performance (Demerouti et al., 2016). Additionally, employees who frequently have difficulties engaging in private life activities due to work concerns develop negative attitudes toward their work and feel thus less satisfied and committed to their organization over time (Huang et al., 2007). Work-self conflict might thus represent a stressor that interferes with one's work and prevents work success. The lack of resources and the negative emotions about the conflict might lead to less commitment to their organization and more emotional exhaustion over time (Demerouti et al., 2013).

Furthermore, to appropriately investigate the impact of perceived diversity and experienced inclusion on the relationship between hindrance stressors and employee outcomes, this study focuses on stressors that are relevant to the diversity and inclusion context in STEM organizations. In this regard, scholars stated that discrimination and less transparent work procedures are dominant stressors of organizations that aim to diversify their workforce, but where the work context remains to be dominantly shaped by the majority employee group (Jansen et al., 2015). First, according to the social categorization perspective, the circumstance that employees differ on characteristics can lead to the formation of sub-groups, whereby individuals compare themselves to others at work and form cognitive in- and out-groups (Tajfel & Turner, 1986). As a result, discrimination will be enabled by reinforcing borders between these sub-groups (Mummendey & Wenzel, 1999). Discrimination refers to the belief that one is treated less favorably because one belongs to a specific social group (Sanchez & Brock, 1996). Discrimination causes physical and mental strain (Schmitt et al., 2014). Additionally, it was found to be negatively related to employee behavior and commitment (Jones et al., 2016). Thus, when employees experience discrimination, it potentially hinders their work-related accomplishments and stimulates a stress process that can lead to exhaustion and decreased organizational commitment. Secondly, work procedures of diversifying organizations are developed and based on the needs of the majority employees (Jansen et al., 2015). Due to increasing employee differences, work procedures often appear less clear at large. In this regard, nontransparent work procedures represent the extent to which employees perceive the understandability of human resource-related procedures (e.g. recruitment or performance appraisal procedures) as not consistent (Colquitt, 2001). Nontransparent work procedures represent ambiguity regarding organizational practices and regulations, constraining employees' personal achievement and producing stress for employees. Indeed, the research identified nontransparent work procedures as a form of organizational demand that induces feelings of exclusion and has detrimental consequences for employees' health and performance (Daya, 2014).

3.2.3 Perceived Diversity and its Interplay with Stressful Work Experiences

Stressors do not necessarily impact individuals negatively (Podsakoff et al., 2007). The work environment, and especially how employees appraise stressful situations at work, were found to play an important role (Cavanaugh et al., 2000). Therefore, employees' perceptions of their environment and how these shape the impairment process needs to be taken into account. A predominant phenomenon in STEM organizations is the increasing workforce diversity from which the institutions desire to generate competitive advantage (Catalyst, 2019). The perception of workforce diversity reflects the degree to which individuals are aware that others differ along any salient dimension (Shemla et al., 2016). This study focuses on perceived workforce diversity rather than objective diversity as we are interested in the impact of the work context, which most likely varies across individuals. While we acknowledge the difference between subjective and objective workforce diversity, diversity perceptions were found to be an adequate approximation of objective diversity because people react based on perceptions of reality than reality per se (Shemla et al., 2016). Studies confirmed that perceived diversity mediates the effects of actual diversity and thus may explain the impact of workforce diversity more proximal than actual diversity (Harrison & Klein, 2007).

Studies have found dominantly negative consequences of perceived diversity (Shemla et al., 2016). The social categorization theory (Van Knippenberg & Schippers, 2007) states that diversity might display an additional emotional and cognitive demanding aspect. The employees need to deal with higher cognitive effort because of the differences among team members (e.g., cultural differences). Moreover, categorization might reinforce borders between team members that are different and thus lead to increased discrimination and intergroup conflicts (Van Knippenberg et al., 2004). Nevertheless, researchers have concluded that the effects of diversity should not be investigated in isolation (Jaiswal & Dyaram, 2019). Employees need to be enabled to process different information to benefit from workforce diversity (van Knippenberg et al., 2004). In this regard, inclusion impacts the relations between workplace diversity and employee outcomes (Mor Barak et al., 2016). To derive more concise conclusions regarding diversity's role in the impairment process of health- and well-being, it is thus of great importance to investigate the joint impact of perceived diversity and experienced inclusion.

3.2.4 Experienced Inclusion as an Approach to Benefit from Workforce Diversity

The experience of inclusion has been identified as an effective approach to benefit from diversity among employees while reducing the detriments (Mor Barak et al., 2016). People who experience inclusion feel that they belong to a social unit while being valued for their authenticity (Jansen et al., 2014). Inclusive environments provided more psychological safety for employees to be themselves and share different knowledge (Nembhard & Edmondson, 2006). In line with the inclusion framework (Shore et al., 2011), researchers state that in diverse work environments, in which employees experience inclusion, social categorization will less likely take place, reducing the cognitive load and allowing employees to process different information (Mor Barak et al., 2016). Building on previous inclusion research (e.g., Shore et al., 2018), the lack of inclusion resembles an employee feeling excluded, which is defined by the inclusion framework as the situation in which employees are not treated as organizational insiders with unique value in their work groups, while other employees are considered insiders (Shore et al., 2011). Exclusion is detrimental for employee exhaustion, because it represents an additional demand that employees are faced with. In this regard, exclusion strengthens the creation of social groups based on individual characteristics, which results in deterioration of cooperative processes between colleagues and adds additional strain for employees (van Knippenberg et al., 2004). As a result the lack of inclusion denies opportunities for employees to deal with negative aspects of diversified groups and might thus add an additional source for energy loss (Schmitt et al., 2014). Consequently, employees might experience more strain and thus feel additionally exhausted at work. This might be especially true in work environments that are perceived as more diverse, because the feeling of authenticity and belongingness is especially important the more an employee perceives differences among colleagues (Jansen et al., 2014). We therefore hypothesize:

Hypothesis 1: The positive relationship between stressful work experiences and employee exhaustion is moderated by perceptions of diversity and experienced inclusion, such that the relationships between (a) work-self conflict, (b) discrimination, and (c) nontransparent work procedures and employee exhaustion become stronger if an employee perceives higher workforce diversity and lower inclusion compared to higher inclusion.

In addition, as feelings of inclusion prevent additional demands stemming from

perceived diversity, feeling included might also boost employees' attitudes toward their organization and therefore prevent the detrimental impact of a stressful work environment. Feelings of exclusion potentially add negative associations with one's workplace and thus might strengthens the negative relations between stressful work experiences and affective commitment (Jones et al., 2016). Additionally, weak relationships with others at work can result in negative feelings regarding one's work (Shore et al., 2011). Negative work experiences add an additional burden that drastically diminishes employees' emotional connection to their organization (Bakker et al., 2005). Thus, we assume that if employees perceive higher workforce diversity, feelings of inclusion are essential to overcome exclusion and differentiation. We therefore hypothesize:

Hypothesis 2: The negative relationship between stressful work experiences and employee affective commitment is moderated by perceptions of diversity and experienced inclusion, such that relationships between (a) work-self conflict, (b) discrimination, and (c) nontransparent work procedures and affective commitment become stronger if an employee perceives higher diversity and lower inclusion compared to higher inclusion.

The hypothesized model is outlined in Figure 3.1.

Figure 3.1 Conceptual model of the interactive effect of stressful work experiences, perceived diversity, and experienced inclusion on employee outcomes
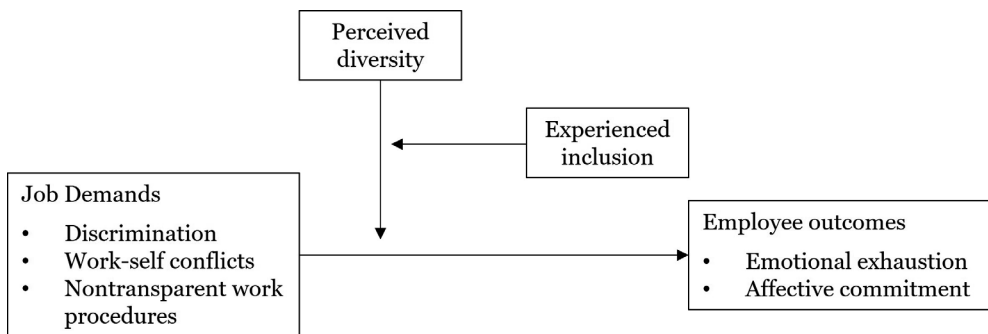
3.3 METHODS

3.3.1 Participants and Procedure

The sample comprised 1918 employees of a technical university located in the Netherlands (response rate: 30.37%). Employees anonymously filled in an online questionnaire. We deleted the responses of 731 participants because they provided less than ten percent of the requested responses (96%) or they failed the attention check (4%). Our final sample includes 1187 respondents. Participants represented all scientific departments (52.3% of the sample is scientific staff) and crucial service groups of the technical university (47.7% of the sample is non-scientific staff [representation in the organization: 68.2% scientific staff vs. 31.8% non-scientific staff]). Non-scientific staff comprises technical departments (e.g., "Equipment & Prototype Center" or "Information Management Services") and non-technical departments (e.g., "Human Resources" or "Education and Student Affairs"). Most of the participants identified as male (54%). We recorded 41% female participants, and 5% defined differently or did not enclose their gender identification (representation in the organization: 65.2% male vs 34.8% female employees). Moreover, about two third reported to be Dutch, and about one-third were internationals (N = 191 European besides Dutch, N = 83 Asian, N = 39 from other continents). Looking at a crosstabulation, we can report 39% of the participants to be majority employees (male and Dutch), while the rest of participants hold a characteristic of a minority employee group at the STEM university (33% female and Dutch, 10% female and international, 17% male and international, and 1% other gender identification and Dutch or international). Furthermore, approximately one-third (N = 376) of the participants were between 18 and 33 years old, one-third (N = 361) were between 34 and 49 years old, and one-third (N = 406) were older than 50 years. Respondents additionally reported a variety of work-related characteristics. A relatively big group (N = 448) stated to work less than three years at the university. Additionally, 428 employees reported a work tenure of four to fifteen years, and 310 employees reported working for over 16 years at the university. Finally, 17% of the respondents had a managerial position within the university.

3.3.2 Measures

3.3.2.1 Stressful Work Experiences

We measured *work-self conflict* (Demerouti et al., 2016) with four items (α = .89) on a 5-point Likert scale and *discrimination* (Mena et al., 1987) with three items (α = .83) on a 4-point Likert scale. Example items of these two scales are respectively: "How often does it happen that you cannot fully enjoy your personal activities because you worry about your work?" and "At work, I sometimes feel that my personal background is a limitation". *Transparency of work procedures* was measured by three self-developed statements ("I know how decisions are made at my organization", "I know how resources are allocated at my organization", and "Information about procedures is provided to all employees"), where high scores represent less transparent work procedures (reverse coding). Answers ranged from (1) "strongly disagree" to (7) "strongly agree" (α =.75).

3.3.2.2 Perceptions of Workplace Diversity

Following van Dick et al. (2008), respondents indicated subjective diversity for six dimensions (i.e., age, gender, ethnic background, educational background, personal values, and work expertise). Answers ranged from (1) "not diverse" to (5) "very diverse". The calculated mean score represents the level of perceived diversity. Our internal consistency (α =.70) was slightly lower compared to other studies (van Dick et al., 2008: α =.75).

3.3.2.3 Experienced Inclusion

Feelings of belongingness and authenticity were measured with six items (example item "This work group treats me as an insider") of Jansen's et al. (2014) Perceived Group Inclusion Scale (α =.94). Answers ranged from (1) "never" to (5) "always".

3.3.2.4 Employee Outcomes

We used four items from the Oldenburg Burnout Inventory (Demerouti & Bakker, 2008) to measure *employee exhaustion* (α = .78). Answers ranged from (1) "totally disagree" to (4) "totally agree" (example item: "During my work I feel more often emotionally exhausted."). *Affective commitment* was assessed by three items (α = .60) from Allen and Meyer (1990). Answer possibilities ranged from (1) "totally disagree" to (7) "totally agree" (example item: "I would be very happy to spend the rest of my career with this organization").

3.3.2.5 Control Variables

Research showed that majority and minority employees perceive their work environment differently (Jansen et al., 2015). We, therefore, controlled for group membership (0 = minority employee [i.e., being female and/or international]; 1 = majority employee). Additionally, we controlled for the type of personnel in our analyses to account for any impact due to different work conditions, tasks, or backgrounds (0 = scientific staff; 1 = non-scientific staff).

3.3.3 Analysis Strategy

Descriptive statistics and correlations among the study variables are displayed in Table 3.1. The three-way interaction hypotheses were tested using moderated moderation analysis (PROCESS version 3.3 by Hayes, 2018). To test the hypotheses, nonlinear bootstrapping was applied to estimate conditional effects (variables that define products were mean-centred), using 5,000 resamples and a 95% confidence interval. Results are displayed in Table 3.2. To provide more detailed information regarding additional explained variance by added interaction terms, we also show hierarchical regression analyses. Variables were standardized before the interaction terms were built (Table 3.3 to 3.5 in Appendix 3A).

3.4 RESULTS

We conducted Harman's single factor test to check for a common method bias. The results of an unrotated exploratory factor analysis showed that the factor accounted for 24% of variance of the items in the sample, which is below the critical value of 50% (Podsakoff et al., 2003). Next, we performed a confirmatory factor analysis that showed that the fit of the proposed seven-factor model was significantly better in comparison to a one-factor model ($\Delta\chi^2$= 6070.38, Δdf= 21, p<.01). Additionally, the seven-factor model showed an adequate fit (χ^2[406] = 14089.24; standardized root mean square residual = 0.05; root mean square error of approximation = .92), and all relationships between factor and items were significant, suggesting an appropriate model (Hu & Bentler, 1999). We thus assume that our results were not substantially impacted by common method variance.

To test Hypothesis 1, we examined the three-way interactions of stressful work experiences, perceived diversity, and experienced inclusion on employee exhaustion. First, the results showed that the two-way interaction between work-self conflict and

Table 3.1 Means, standard deviation, reliabilities, and correlations among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1 Staff group	.48	.50	—								
2 Majority employee	.39	.49	-.01	—							
3 Work-self conflict	2.37	.93	-.36**	-.01	.89						
4 Discrimination	1.21	.47	-.12**	-.14**	.33**	.83					
5 Nontransparent work procedures	3.33	.82	-.09**	-.09**	.17**	.23**	.69				
6 Perceived diversity	3.00	.69	-.04**	.04	.02	-.05	-.12**	.70			
7 Experienced inclusion	3.85	.82	.04	.01	-.27**	-.44**	-.29**	.16**	.94		
8 Employee exhaustion	2.40	.60	-.23**	-.06*	.63**	.32**	.24**	-.10**	-.34**	.78	
9 Affective commitment	4.90	1.27	.22**	-.01	-.25**	-.24**	-.29**	.09**	.42**	-.32**	.60

Notes. $N = 1187$. Internal reliabilities are shown on the diagonal. * $p<0.05$; ** $p<0.01$ (two-tailed tests); Staff group (dummy coded: 0 = scientific staff, 1 = non-scientific staff), Majority employee (0 = no [international or/and female], 1 = yes [national or/and male])

3

inclusion was significantly related to employee exhaustion (Table 3.3: B = .03, p < 01). Additionally, the results revealed that the three-way interaction was significant for (a) work-self conflict (Table 3.3: B = - .03, p < .05) but not for (b) discrimination (Table 3.4: B = - .01, p = .25) and (c) nontransparent work procedures (Table 3.5: B = .01, p = .34). Regarding the significant three-way interaction, we conducted a simple slope test to compare the two slopes of high perceived diversity and either low or high experienced inclusion. We focus on only two of the four slopes as we are interested in the role of experienced inclusion in diverse perceived work environments rather than in work groups with low diversity. Feeling belongingness and valued uniqueness may play a different role when employees represent the same personal characteristics (i.e., low diversity). The slope test indicated that both slopes were significantly positive (Table 3.2: Slope 1: +1SD diversity/+1SD inclusion [effect = .35, SE = 0.03, 95% CI = .30; .41]; Slope 2 (+1SD diversity/-1SD inclusion) [effect = .34, SE = 0.03, 95% CI = .28; .39]. The slope difference test showed, against our prediction, that the relationship between work-self conflict and employee exhaustion did not differ significantly for employees who experienced higher versus lower inclusion in more diverse environments (ΔB = -.02, p = .62). The significant three-way interaction stemmed from the employee group that perceived lower diversity and higher inclusion, which showed a significantly stronger positive relationship compared to the other groups (see Figure 3.2). Thus, in work environments where employees perceive as less diverse and feel included, the positive

Figure 3.2 Work-self conflict, perceived diversity and experienced inclusion predicting employee exhaustion
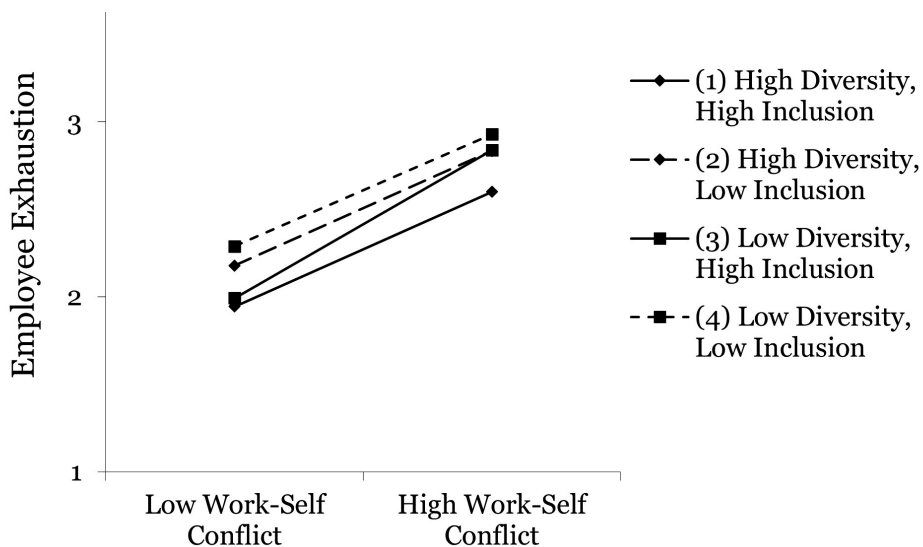
Table 3.2 PROCESS results for testing the moderated moderation effect of perceived diversity and experienced inclusion on the relationship between stressful work experiences (i.e., work-self conflict and nontransparent work procedures) and employee exhaustion as well as affective commitment

Predictor	Moderator W	Moderator Z	Outcomes	Effect	SE	LLCI	ULCI
Work-self-conflict	High perceived diversity (+1SD)	Low experienced inclusion (−1SD)	Employee Exhaustion	**.34**	.03	.2818	.3883
	High perceived diversity (−1SD)	High experienced inclusion (+1SD)	Employee Exhaustion	**.35**	.03	.2969	.4095
	Low perceived diversity (−1SD)	Low experienced inclusion (−1SD)	Employee Exhaustion	**.33**	.03	.2773	.3749
	Low perceived diversity (+1SD)	High experienced inclusion (+1SD)	Employee Exhaustion	**.45**	.03	.3881	.5123
	High perceived diversity (+1SD)	Low experienced inclusion (−1SD)	Affective commitment	**-.15**	.07	-.2786	-.0202
	High perceived diversity (+1SD)	High experienced inclusion (+1SD)	Affective commitment	-.05	.07	-.1837	.0895
	Low perceived diversity (−1SD)	Low experienced inclusion (−1SD)	Affective commitment	-.02	.06	-.1304	.0964
	Low perceived diversity (−1SD)	High experienced inclusion (+1SD)	Affective commitment	-.13	.08	-.2837	.0176
Nontransparent work procedures	High perceived diversity (+1SD)	Low experienced inclusion (−1SD)	Affective commitment	**-.38**	.08	-.5417	-.2232
	High perceived diversity (+1SD)	High experienced inclusion (+1SD)	Affective commitment	**-.19**	.07	-.3143	-.0467
	Low perceived diversity (−1SD)	Low experienced inclusion (−1SD)	Affective commitment	**-.19**	.08	-.3548	-.0340
	Low perceived diversity (−1SD)	High experienced inclusion (+1SD)	Affective commitment	**-.34**	.08	-.4959	-.1806

Notes. $N = 359$; Bootstrap sample size = 5000. Values in bold indicate statistical significance at $p < .05$; We subsequently mean centered all the variables to avoid multicollinearity and spurious regression.

relationship between work-self conflict and employee exhaustion was the strongest for employees. We, therefore, reject Hypothesis 1.

To test Hypothesis 2, we examined the three-way interactions of stressful work experiences, perceived diversity, and experienced inclusion on affective commitment. No significant two-way interactions were identified between stressful work experiences and either perceived diversity or experienced inclusion. The interaction of perceived diversity and experienced inclusion was, however, positively related to affective commitment (B = .07, p < .05), displayed in Table 3.5. The three-way interaction was not significant for (b) discrimination (Table 3.4: B = .02, p = .35) but showed significance for (a) work-self conflict (Table 3.4: B = .05, p < .05) and (c) nontransparent work procedures (Table 3.5: B = .07, p < .01). The relationship between work-self conflict and affective commitment (see Figure 3.3) appeared only significantly negative for employees perceiving less inclusion instead of more inclusion, in more diverse perceived environments (Table 3.2: Slope 1: +1SD diversity/+1SD inclusion [effect = -.05, SE = 0.07, 95% CI = -.18; .09]; Slope 2 (+1SD diversity/-1SD inclusion) [effect = -.15, SE = 0.07, 95% CI = -28; -.02]. The results for nontransparent work procedures were similar. The relationship between nontransparent work procedures and affective commitment appeared stronger negative for employees perceiving less inclusion, compared to more inclusion, in more diverse perceived environments (Slope 1: +1SD diversity/+1SD inclusion [effect = -.38, SE = 0.08, 95% CI = -.54; -.22]; Slope 2 (+1SD diversity/-1SD inclusion) [effect = -.19, SE = 0.07, 95% CI = -31; -.05]. Hypothesis 2 was partially supported. The stressful work experiences (i.e., self-work conflict and nontransparent procedures) had a weaker negative relationship to employees' affective commitment if employees experienced more inclusion in a more diverse perceived work environment.

3.5 DISCUSSION

This study examined in a STEM organization whether stressful work experiences (i.e., work-self conflict, discrimination, and nontransparent work procedures) are more detrimental for employee health and affective commitment when employees feel less compared to more inclusion in diverse perceived work environments. Results point toward a beneficial role of inclusion but also show that the interaction between stressful work experiences, perceived diversity, and inclusion and their joint impact on employee exhaustion and affective commitment appears very complex and requires more detailed attention.

Figure 3.3 Work-self conflict, perceived diversity and experienced inclusion predicting affective commitment
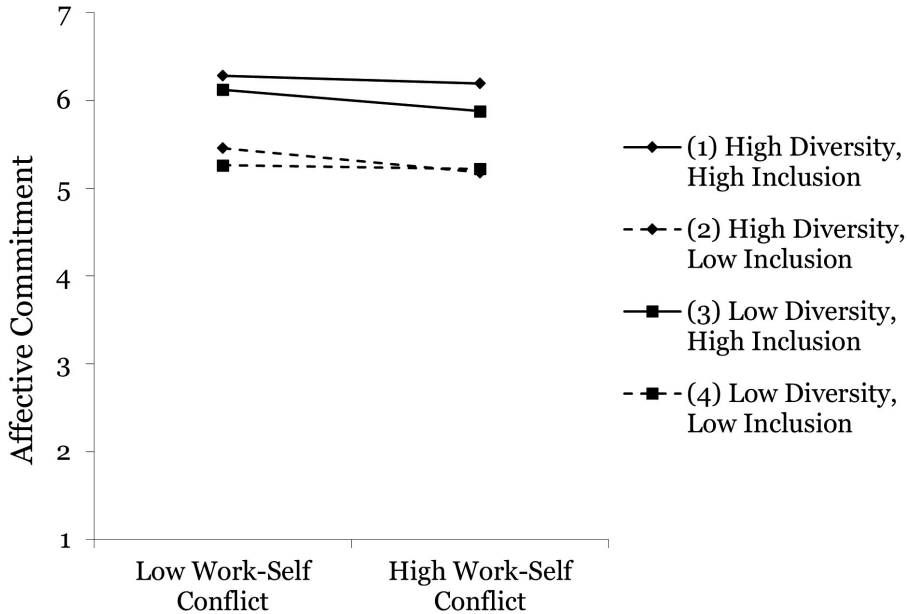
3.5.1 Theoretical Implications

Our research is one of the first attempts that examines the joint relationship between stressful work experiences, workforce diversity, and inclusion experiences with emotional exhaustion and effective commitment. In this regard, we contribute to diversity and inclusion research as well as to occupational health research by offering valuable insight into how diversity and inclusion shape the impairment process of employee health and well-being. The findings suggest that inclusion in diverse workplaces might create an environment that potentially buffers the detrimental effects of stressful experiences on affective commitment. For two out of the three tested work aspects (i.e., work-self conflict and nontransparent work procedures), we found that these stressors had weaker negative relations with employees' affective commitment when employees experienced more inclusion. This result aligns with the inclusion framework and shows that inclusion prevents employees from potential detrimental consequences of exclusion and differentiation (Shore et al., 2011). Moreover, the results follow the line of thinking of occupational health research, which points out that potentially less resourceful

environments hamper employees' ability to deal with constraining job aspects (Bakker et al., 2005). Nevertheless, the negative relation between experienced discrimination and affective commitment was not dependent on employees' feeling of inclusion in a more diverse perceived work environment. We assume that experiences of discrimination might be a very extreme and unique stressor that is always related to negative feelings toward one's workplace (Shore et al., 2018). Next, concerning employee exhaustion, the level of experienced inclusion in more diverse environments did not change the relationship between stressful experiences and this health outcome. All work aspects were positively associated with employee exhaustion across different levels of inclusion experiences. In line with the research of Crawford et al. (2010), we conclude that the impairment process of employee exhaustion is stable across the addressed environmental differences. Overall, this study contributes to the literature on diversity and inclusion by examining their relationship to employee health and affective commitment (Jaiswal & Dyaram, 2019). Our results show that employees' commitment level, but not employees' health, depends on one's experience of inclusion in a diverse work environment. We, therefore, confirm previous conceptual work that reasons that inclusion displays an important mechanism to prevent negative affective consequences for employees in diverse environments (Shore et al., 2018).

3.5.2 Management Implications

Our study has important implications for STEM universities that strive for increased workforce diversity. The findings suggest that employees' emotional attachment toward their organization potentially suffers less from stressful work experiences if they feel more inclusion. Thus, besides increasing the numerical representation of minority characteristics (e.g., bringing in more female or international employees), STEM universities need to enhance the inclusion experience of employees to maintain a diverse workforce. Thus, employees' feelings of belongingness as well as their feelings of being authentic members of the workplace, need to be facilitated (Shore et al., 2018). Opportunities are threefold: creating an inclusive climate, developing leaders to utilize an inclusive leadership style, and providing inclusive practices (Shore et al., 2011). Organizations need to create organizational systems that guarantee fairness and value differences between employees. Furthermore, leaders facilitate inclusion by engaging in inclusive behaviors (e.g., inviting and appreciating unique contributions; Nembhard & Edmondson, 2006). Lastly, inclusive practices (e.g., involvement in decision-making) enhance the cohesiveness feelings of team members (Shore et al., 2018).

3.5.3 Limitations and Future Research Directions

We acknowledge that the present study runs the risk of common method variance since data has been collected at one point in time and is based on self-reports. Although the performed tests showed that the common method bias is not a concern for this study, we realize that our data do not allow conclusions regarding variable causality. Our study provides more of an explanatory foundation for further studies. A second limitation is the restricted generalizability of our results, as the present study is based on employees working in one single STEM university. Nevertheless, our study included both scientific and non-scientific staff. Thus, our sample entails heterogeneity of job positions and tasks. Future research can extend our attempts by including other-rated individual outcomes and using a time series approach. Additionally, our results showed that the potential buffering role of inclusion in diverse environments on the impairment process is limited. Future studies might consider other context variables (e.g., leadership or co-worker behavior) that might buffer the detrimental impact of stressful work experiences on employee well-being.

In conclusion, the present study demonstrated that employees potentially benefit from feeling included in diverse work environments. Specifically, we showed that in perceived diverse environments, stressful work experiences were less detrimental to employees' affective commitment when employees experienced more inclusion. Additionally, the results revealed that different perceptions of one's work environment regarding perceived diversity and experienced inclusion did not change the harmful health impairment process, providing valuable insights for practice and further research.

APPENDIX

3A. Results of the hierarchical regression analyses

Table 3.3 Work-self conflict, perceived diversity, and experienced inclusion predicting employee exhaustion and affective commitment

Variable	Employee exhaustion		Affective commitment	
	B	*SE*	*B*	*SE*
Controls				
Constant	2.30**	.03	5.18**	.06
Majority employee	−.01	.04	−.13	.07
Staff group	−.22**	.03	.41**	.07
Discrimination	.16**	.02	−.23**	.04
Nontransparent work procedures	.10**	.02	−.32**	.04
R²	.16		.15	
F change	49.54**		46.88**	
Main effects				
Constant	2.40**	.02	5.15**	.06
Work-self conflict (Wsc)	.33**	.02	−.08**	.04
Diversity (Div)	−.05**	.01	.06**	.03
Inclusion (Inc)	−.08**	.02	.43**	.04
R²	.43		.49	
F change	175.94**		48.55**	
Two-way interactions				
Constant	2.42**	.02	5.15**	.06
Wsc × Div	−.01	.01	−.02	.03
Wsc × Inc	.03**	.01	.00	.03
Div × Inc	−.02	.03	.06	.03
R²	.44		.50	
F change	3.01		1.67	
Three-way interactions				
Constant	2.42**	.02	5.15**	.06
Wsc × Div × Inc	−.03*	.01	.05*	.02
R²	.44		.51	
F change	6.25*		4.32*	

Notes. $n = 1187$. *$p < .05$; **$p < .01$

Table 3.4 Discrimination, perceived diversity, and experienced inclusion predicting employee exhaustion and affective commitment

Variable	Employee exhaustion		Affective commitment	
	B	*SE*	*B*	*SE*
Controls				
Constant	2.42**	.02	5.11**	.06
Majority employee	−.05	.03	−.07	.07
Staff group	−.01	.03	−.32**	.08
Work-self conflict	.36**	.02	−.20**	.04
Nontransparent work procedures	.08**	.01	−.33**	.04
R²	.41		.14	
F change	183.88**		44.47**	
Main effects				
Constant	2.40**	.02	5.15**	.06
Discrimination (Dis)	.03	.02	−.03	.04
Diversity (Div)	−.05**	.01	.06	.03
Inclusion (Inc)	−.08**	.02	.43**	.04
R²	.43		.25	
F change	17.63**		51.68**	
Two-way interactions				
Constant	2.41**	.02	5.14**	.06
Dis × Div	.01	.01	−.04	.04
Dis × Inc	.02	.01	−.01	.03
Div × Inc	−.01	.01	.05	.03
R²	.44		.25	
F change	1.20		1.83	
Three-way interactions				
Constant	2.41**	.02	5.14**	.06
Dis × Div × Inc	−.01	.01	.02	.02
R²	.44		.25	
F change	1.30		.87	

Notes. $n = 1187$. *$p < .05$; **$p < .01$

Table 3.5 Nontransparent work procedures, perceived diversity, and experienced inclusion predicting employee exhaustion and affective commitment

Variable	Employee exhaustion		Affective commitment	
	B	*SE*	*B*	*SE*
Controls				
Constant	1.34**	.05	5.13**	.06
Majority employee	−.04	.03	−.08	.08
Staff group	.00	.03	−.35**	.08
Work-self conflict	.38**	.02	−.17**	.04
Discrimination	.15**	.03	−.24**	.04
R^2	.40		.10	
F change	178.51**		30.81**	
Main effects				
Constant	1.49**	.05	5.15**	.06
Nontransparent work procedures (Nwp)	.05**	.02	−.21**	.04
Diversity (Div)	−.05**	.01	.06	.03
Inclusion (Inc)	−.08**	.02	.43**	.04
R^2	.43		.25	
F change	22.13**		70.32**	
Two-way interactions				
Constant	1.48**	.06	5.15**	.06
Nwp × Div	.00	.01	.00	.03
Nwp × Inc	.02	.01	.02	.03
Div × Inc	−.01	.01	.07*	.03
R^2	.44		.25	
F change	1.17		1.63	
Three-way interactions				
Constant	1.48**	.06	5.15**	.06
Nwp × Div × Inc	.01	.01	.07**	.03
R^2	.44		.26	
F change	.92		7.14**	

Notes. $n = 1187$. *$p < .05$; **$p < .01$

The Impact of Inclusive Leaders and Workforce Diversity on Employee Behavior, Performance, and Well-being

"With increasing diversity, inclusive leadership was stronger linked to employee performance, possibly because it helps diverse groups overcome barriers between subgroups and supports group members in exchanging information successfully."

ABSTRACT

Inclusive leadership has been identified as critical to maintaining employee productivity and well-being. However, we still know little about how and when inclusive leadership relates to positive employee outcomes in organizations. Drawing on social learning theory and the inclusion framework, we examined if prosocial (i.e., helping) and proactive (i.e., resources-seeking) employee behaviors mediated the relationships between inclusive leadership and employee work outcomes (i.e., work engagement rated by employees and task performance rated by leaders), and to what extent these (indirect) effects were contingent on the level of workplace diversity. We collected data from 152 employee-leader dyads in various Dutch and German organizations in science, technology, engineering, and mathematics. Results of structural equation modelling analyses confirmed that resources-seeking behavior mediated the positive relationship between inclusive leadership and task performance and one dimension of work engagement, namely dedication. Helping behavior only mediated the positive link between inclusive leadership and task performance. Moreover, inclusive leadership was crucial to ensure adequate employee performance when workplace diversity was high. Overall, our results confirm that the positive impacts of workforce diversity and inclusive leadership are interrelated. We contribute to an enhanced understanding regarding the joint impact of inclusive leadership, workforce diversity, and employee behaviors and thus help to reveal further the adaptive process of inclusive leadership and its effects on employee outcomes.

Keywords: Inclusive leadership, diversity, inclusion, STEM organizations, task performance, work engagement

4

4.1 INTRODUCTION

Inclusive leadership is fundamental to benefit from workforce diversity (Leroy et al., 2021). Workforce diversity, thus employee differences regarding demographic and functional characteristics, potentially threaten employee performance and well-being when interpersonal conflicts or identity threats arise (Homan et al., 2007). These potential barriers occur because individuals implicitly favor others with the same characteristics and may have difficulties understanding people with differing backgrounds (Van Knippenberg & van Ginkel, 2022). inclusive leadership is valuable in dealing with such challenges in teams by understanding and valuing workforce diversity (Veli Korkmaz et al., 2022). Randel et al. (2018) define inclusive leadership in line with the definition of inclusion (Shore et al., 2018). They state that inclusive leadership leads to pro-organizational outcomes by enabling employees to maintain a sense of group belongingness (e.g., by realizing shared decision-making in work teams) while appreciating the unique contribution of an employee (e.g., by supporting employees to share individual opinions).

Research lacks insight into how workforce diversity shapes the relationship between inclusive leadership and employee outcomes (Van Knippenberg & van Ginkel, 2022). Recently, scholars have emphasized that inclusive leadership represents an adaptive process in which leaders' behaviors and employees' responses to the leadership style depend on the diversity context (Nishii & Leroy, 2022). Overall, research has emphasized the positive impact of inclusive leadership on employee outcomes (e.g., employees' work engagement, Bao et al., 2022; task performance, Mitchell et al., 2015). Nevertheless, investigating the interaction of inclusive leadership and perceived diversity will enhance our understanding of when inclusive leadership is particularly relevant. Moreover, scholars request knowledge regarding employees' behavioral responses to inclusive leadership and how employee behavior might enable or hinder the benefits of inclusive leadership (Randel et al., 2016). Insights are relevant for effective diversity management (Homan et al., 2020). Behavior is generally observable and trainable compared to cognitive and affective responses (Tims et al., 2012). Thus, it provides ground for more actionable implications regarding the role of employees in benefiting from rising diversity.

Recognizing the research deficiencies, we contribute to the existing literature in the following manner. First, we expand the current inclusive leadership literature by uncovering potential behavioral mechanisms regarding the relationship between inclusive leadership and employee outcomes. The current research has focused on cognitive or affective mechanisms to explain the effects of inclusive leadership (e.g.,

Shore & Chung, 2021). Our research examines if inclusive leadership stimulates proactive and prosocial employee behaviors that may partially explain the benefits of inclusive leadership. In addition, current inclusive leadership studies assume that inclusive leaders play a crucial role in efficiently managing workforce diversity, top-down, in an organization (Randel et al., 2018), leaving little room for an active role of the employee. Nevertheless, understanding the role of employees in diversity and inclusion management displays practical information to organizations as behaviors are trainable, unlike cognitions and emotions. In this regard, we are one of the first inclusive leadership studies that examine employees' active role in shaping their work outcomes.

Second, we contribute to existing inclusive leadership literature that lacks the knowledge of how diversity might display a boundary condition for the benefits of inclusive leadership (Nishii & Leroy, 2022). High workforce diversity is associated with higher risks for conflicts, and in a homogenous group, inclusive leadership might not be necessary (Van Knippenberg & van Ginkel, 2022). By examining the joint impact of inclusive leadership and workforce diversity, our study enlightens in which context inclusive leadership is most effective.

Finally, since we conducted the study among organizations in the STEM (science, technology, engineering, and mathematics) sector, we contribute to diversity and inclusion research in this particular sector. Predominantly, STEM research has focused on increasing diversity, neglecting that inclusion is needed to benefit from employee differences (McClelland & Holland, 2015). Other research provides insights into how to be more inclusive regarding students (Jones, 2016). Our study emphasizes how STEM organizations can foster the exchange of resources through helping and resource-seeking behaviors among all their employees. These behaviors are necessary for knowledge-intensive organizations to benefit from workforce diversity (Van Knippenberg et al., 2004). Thus, our results will enable concrete recommendations to organizations on managing their diverse workforce and effectively benefitting from employee differences.

Overall, this study adds to our understanding regarding the relationship between inclusive leadership and employee outcomes (i.e., task performance and work engagement) by focusing on behavioral mechanisms and the role of perceived workforce diversity. To this end, in line with social learning theory (Bandura, 1985) and the inclusion framework (Shore et al., 2018), we propose that inclusive leadership role models employees to exchange resources. We measured helping behavior (rated by the leader) and resources-seeking behavior (rated by the employee) to examine how these behaviors mediate the relationships of inclusive leadership (rated by the employee) with employee work engagement (rated by the employee) and with task performance (rated by the leader). Finally, we investigate the contextual role of workforce diversity on the direct

4

Figure 4.1 Conceptual model
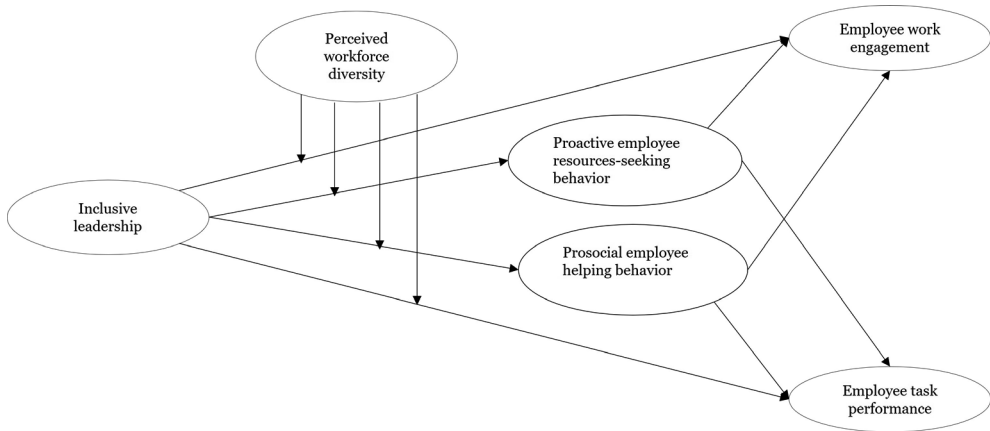
and indirect effects of inclusive leadership and propose that employee outcomes improve in diverse perceived workgroups when leaders behave inclusively. Figure 4.1 presents the total conceptual model.

4.2 THE MEDIATING ROLE OF EMPLOYEE RESOURCES-SEEKING AND HELPING BEHAVIOR

Employee well-being and performance are vital for organizational functioning (Demerouti et al., 2010). Work engagement displays a positive and fulfilling condition in which employees feel vigor, dedication, and absorption in their job (Schaufeli et al., 2006). Moreover, task performance is defined as employees' fulfilment of the requirements as specified in their formal job description (Williams & Anderson, 1991). Although leadership has been identified as a critical antecedent of employee task performance and work engagement, insights regarding the specific effects of inclusive leadership and how inclusive leaders may stimulate employees' work outcomes through a behavioral mechanism are incomplete (Nishii & Leroy, 2022).

We use social learning theory (Bandura, 1985) and the inclusion framework (Shore et al., 2018) to argue a behavioral pathway from inclusive leadership to employee work engagement and task performance. Social learning theory states that employees learn social behaviors by observing their environment. Based on their observations, employees engage in those behaviors that they perceive to have positive consequences while they

avoid behaviors linked to negative consequences (Bandura, 1985). Due to their position in the organization, leaders represent key role models who guide their employees' behaviors by teaching social norms (Decuypere & Schaufeli, 2021). Moreover, leaders hold the authority to reward appropriate (e.g., inclusive) and punish inappropriate (e.g., exclusive) behaviors (Nishii & Leroy, 2022).

Next, the inclusion framework by Shore and her colleagues (2018) argues that employees who sense from the work environment that they are organizational insiders (feeling of belongingness) and that their characteristics are accepted (feelings of value in uniqueness) will respond with pro-organizational behaviors. Inclusive leadership facilitates feelings of belongingness by supporting individuals as group members, ensuring justice and equity, and sharing decision-making (Randel et al., 2018). Additionally, inclusive leadership stimulates feelings of valued uniqueness by encouraging diverse perspectives and helping all group members to communicate their contributions (Randel et al., 2018). Research shows that inclusive leadership stimulates employees to engage in behaviors that benefit the exchange of knowledge and information (e.g., innovative working behavior: Javed et al., 2019). Concordantly, based on social learning theory and the inclusion framework, we propose that employees respond to inclusive leadership with prosocial behavior (i.e., helping colleagues) and proactive behavior (seeking work resources from their leaders).

In the context of this study, we argue that inclusive leadership might teach employees to demonstrate helping behavior, which is defined as prosocial behavior to assist colleagues with work-related responsibilities (MacKenzie et al., 1991). inclusive leadership creates a high sense of group belongingness by ensuring fairness and cultivating group interactions (Randel et al., 2018). Inclusive leadership provides a safe environment where employees feel encouraged to offer their expertise to others because they do not have to expect negative consequences of sharing information or giving time to others (Nembhard & Edmondson, 2006). Additionally, inclusive leadership appreciates the diversity of opinions (Randel et al., 2018). Employees who feel valued for their ideas more often help others since they perceive a work culture of continuous learning (Randel et al., 2016).

Moreover, inclusive leadership potentially enhances proactive employee behavior, such as resource-seeking behavior. Resources-seeking behavior defines as proactive engagement with one's leader to seek social support, supervisory coaching, and feedback (Tims et al., 2012). Inclusive leaders build trustful relationships with their employees (Randel et al., 2016), enabling employees to feel safe to ask for feedback, advice, or social support (Nembhard & Edmondson, 2006). Additionally, inclusive leaders pay attention to individual needs and, in this way, stimulate employees to ask for resources they need to

improve their job (Xin et al., 2021). Furthermore, inclusive leaders role model the value in unique employee characteristics and growth, which is why employees seek coaching from their inclusive leader (Nishii & Leroy, 2022).

In general, proactive and prosocial behaviors have been linked to increased well-being and performance because they enhance employees' personal and work resources, improving their emotions and behavior at work (Dubbelt et al., 2019). Based on the note of social learning (Bandura, 1985) and the principle of inclusion (Shore et al., 2018), we argue that inclusive leadership teaches employees to engage in proactive and prosocial behaviors, which relates to more work engagement and task performance. We thus hypothesize:

Hypothesis 1: The positive relationship between inclusive leadership and (a) work engagement and (b) task performance is mediated by proactive employee resources-seeking behavior.

Hypothesis 2: The positive relationship between inclusive leadership and (a) work engagement and (b) task performance is mediated by employees' prosocial helping behavior.

4.3 THE MODERATING ROLE OF WORKFORCE DIVERSITY

While inclusive leadership is argued to demonstrate a positive relationship with employee work engagement and task performance, we expect these relationships to be stronger in diverse work groups (Van Knippenberg & van Ginkel, 2022). Employee-perceived differences in more diverse work environments represent a cause for social categorization processes (Van Knippenberg et al., 2004). People generally form closer connections with others they perceive as familiar (Tajfel & Turner, 1986). Thus, diversity potentially leads to the creation of sub-groups within a team and hinders effective collaboration, communication, and team performance (Van Knippenberg & van Ginkel, 2022). In this regard, inclusive leadership helps diverse groups to break down the barriers between subgroups and enables employees to exchange effectively with other team members and their leaders (Shore & Chung, 2021). More specifically, inclusive leadership values workgroup diversity and thus stimulates pro-diversity beliefs that help diverse teams overcome diversity challenges (e.g., conflict and miscommunication: Van Knippenberg et al., 2004). Homan and her colleagues (2007) showed that heterogenous

groups outperformed homogenous groups if they believed in the value of diversity (Homan et al., 2007). As inclusive leadership contributes to more inclusion, employees are more likely to share different perspectives and be themselves (Randel et al., 2018). Therefore, in a homogenous group, less variety of skills, knowledge, and backgrounds is present and cannot benefit the employees. Thus, inclusive leadership might not be as crucial as in a work environment characterized by high perceived diversity (Van Knippenberg & van Ginkel, 2022). For instance, Mitchell et al. (2015) found support for the moderating role of professional diversity. The relation between inclusive leadership and team performance was stronger when team professional diversity was higher. Similarly, we propose that perceived diversity in the work environment will moderate the relationship between inclusive leadership and employee work engagement and task performance.

Hypothesis 3: The positive relationships between inclusive leadership and (a) work engagement and (b) task performance are moderated by perceived workforce diversity, such that the relationships are stronger if perceived workforce diversity is high rather than low.

Following the same logic, we argue that workforce diversity moderates the indirect effects of inclusive leadership, work engagement, and task performance through resource-seeking and helping behavior.

Hypothesis 4: The positive indirect effects of inclusive leadership on (a) work engagement and (b) task performance through employee resources-seeking behavior are moderated by perceived workforce diversity, such that the indirect effects are stronger if perceived workforce diversity is high (vs low).

Hypothesis 5: The positive indirect effects of inclusive leadership on (a) work engagement and (b) task performance through employee helping behavior are moderated by perceived workforce diversity, such that the indirect effects are stronger if perceived workforce diversity is high (vs low).

4.4 METHOD

4.4.1 Participants and Procedure

We collected multisource data with the help of student-recruited samples based on the procedure suggested by Demerouti and Rispens (2014). Our study comprises data on employees and their leaders employed in various male-dominated STEM organizations (e.g., technology, engineering, logistics, transportation, and finance sectors) in Germany and the Netherlands.[1] We used both paper-pencil and digital questionnaires to meet the respondents' preferences. Employees were approached and asked to forward a separate survey to their leader. To guarantee confidentiality within the paper-pencil approach, we ensured that participants could not see their dyad partners' responses by providing separate response envelopes. Digital questionnaires allowed us to reach employees easier, improved the forwarding process to leaders and ensured confidential and anonymous data collection. We matched information from the leader survey to the employee data based on an individually generated code, which we encrypted before analyzing the data. Hence, researchers could not trace back a specific survey to specific individuals. In total, 186 employees and 168 leaders filled in a survey. The final data set we use in the following analyses consists of 152 unique employee-leader dyads. Seven dyads worked at German, while 145 dyads worked at Dutch organizations.[2]

Of the 152 employees, 73.68 per cent identified as male, and 1.97 per cent reported being international. Participants had an average age of 38.32 years (SD = 12.46), had an average tenure in their current organization of 8.19 years (SD = 10.65), and worked an average of 36.17 hours per week (SD = 6.42). Employees were employed in diverse functions (e.g., data analyst, software developer, technical coordinator, engineer, or consultant). Moreover, the average age of the leaders (N=152) was 43.15 years (SD = 10.02), 84.21 per cent of the leaders identified as male, and 1.97 per cent reported being international in their organization. Leaders had an average tenure in their current organization of 11.78 years (SD = 8.80), worked an average of 39.35 hours per week (SD = 6.41), and supervised between two and 150 employees (17.24 employees on average; SD = 20.78).

4.4.2 Measurement Instruments

The questionnaire items were initially compiled in English and translated into German to get data from German organizations. The translation included three steps (Brislin, 1980). First, the English items were translated into German. Subsequently, the items were back-translated into English to compare them in a third step to the original item to ensure an accurate translation. If not differently stated, participants provided their answers on a seven-point Likert- scale.

4.4.2.1 Inclusive Leadership (Employee-Rated)

Employees reported on the behavior of their leaders. We used four items from Zheng et al. (2017). The items read as follows, "My supervisor shows respect and recognition for others", "My supervisor shows appreciation for different voices", "My supervisor encourages open and frank communication", and "My supervisor cultivates participative decision-making and problem-solving processes". Cronbach's α was .84.

4.4.2.2 Resources-Seeking Behavior (Employee-Rated)

We used five items (Tims et al., 2012) to assess the extent to which employees seek social resources from their supervisors. An example item is, "I ask my supervisor for advice". The Cronbach's α was .81.

4.4.2.3 Helping Behavior of the Employee (Leader-Rated)

Leaders were asked to report the extent to which the employee exhibits helping behaviors. We used the three altruism items of the MacKenzie et al. (1991) scale to measure organizational citizenship behavior. An example item is: "The employee at hand is willing to give her/his time to help colleagues". The Cronbach's α was .85.

4.4.2.4 Work Engagement of the Employee (Employee-Rated).

We measured work engagement with the nine-item scale of Schaufeli et al. (2006). An example item reads, "At my work, I feel bursting with energy." Cronbach's α was .86.

4.4.2.5 Task Performance of the Employee (Leader-Rated)

Leaders reported the task performance of the employee by responding to four items from Williams and Anderson (1991). An example item reads, "The employee at hand performs the tasks that are expected of him/her". Cronbach's α was .82.

4.4.2.6 Perceived Workforce Diversity (Rated by Employee and Leader)

We used one item from van Dick et al. (2008) to measure leaders' and employees'

subjective diversity in their current work group. We first sensitized participants to the fact that workforce diversity originates from different characteristics (e.g., age, gender, education, or personal values). Then, we asked participants to report how different their team members are in general. Answers ranged from (1) "not diverse" to (5) "very diverse". We calculated the mean value of both leaders' and employees' perceptions of diversity as we think this can increase the measurement quality and decrease the common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). The higher scores represent higher levels of diversity in their workgroup.

4.4.2.7 Control Variables

We followed the recommendation of Becker et al. (2016) to only control for potent variables. Thus, we controlled for gender identification and participant's age in our analyses. However, including these covariates in our analyses did not change the results.

4.4.3 Statistical Analysis

We performed confirmatory factor analyses (CFA) with latent factors to estimate our model fit. Chi-square, the root mean square error of approximation (RMSEA), the comparative-fit index (CFI), and the Tucker-Lewis index (TLI) examined the distinction of the study constructs. We tested the hypotheses by utilizing the structural equation modelling (SEM) approach using SmartPLS 4.0. SEM has its benefits as it can examine latent variables, generate higher-order constructs, and well manage measurement error, which is one of the greatest limitations in most regression approaches (Hair et al., 2019). We implemented bootstrapping for the conditional direct and indirect effects and used 5000 bootstrap samples to generate 95% bias-corrected confidence intervals (Cheung & Lau, 2008).

Due to its cross-sectional nature, our study was more vulnerable to the inflation of correlations by common method variance (CMV). We performed Harman's single-factor test to investigate whether CMV affected our cross-sectional data. The unrotated exploratory factor analysis conducted in SPSS revealed that one factor explained 25% of the variance of the study items. The value is below the critical rate of 50% (Podsakoff et al., 2003). We thus assume that CMV did not significantly bias the relationships between the study variables.

Table 4.1 Means, standard deviations, and correlations among the studied variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender employee	1.76	.46	–										
2. Age employee	38.32	12.46	-.02	–									
3. Perceived diversity	3.17	.67	.06	.17*	–								
4. Inclusive leadership	5.37	.95	-.20*	-.08	-.10	.84							
5. Resources-seeking	3.12	.73	-.02	-.28**	.01	.50**	.81						
6. Helping behavior	6.18	.78	-.12	.00	-.07	.31**	.15	.85					
7. Work engagement	5.37	.65	-.13	.04	-.05	.30**	.19*	.17*	.86				
8. Vigor	5.34	.65	-.10	.05	-.09	.29**	.15	.11	.80**	.74			
9. Dedication	5.57	.84	-.08	.07	-.05	.24**	.17*	.20*	.86**	.54**	.79		
10. Absorption	5.20	.83	-.16	-.01	.01	.25**	.17*	.11	.87**	.55**	.61**	.71	
11. Task performance	6.14	.60	-.17*	-.04	-.17*	.33**	.22**	.56**	.22**	.20*	.22**	.14	.82

Notes. $N = 152$ employee-leader dyads. Gender (1=female, 2= male, 3= others). Reliability estimates (Cronbach's alpha) are in parentheses on the diagonal when applicable. * $p < .05$; ** $p < .01$.

4.5 RESULTS

4.5.1 Preliminary Analysis

Table 4.1 shows the mean, standard deviations, and correlations among studied variables. All model variables correlated in line with our predictions.

Besides, we conducted a CFA analysis to assess the fit of the measurement model to the data compared to alternative models. The proposed model with five latent variables: inclusive leadership, resources-seeking behavior, helping behavior, work engagement, and task performance revealed a not optimal model fit ($\chi2$ (265) = 452.18, RMSEA = .07, CFI = .88, TLI = .87). To improve the model fit, we compared the five-factor model with a seven-factor model, in which we differentiated the three dimensions of work engagement, namely vigor, dedication, and absorption (Schaufeli et al., 2006). The fit indices of the seven-factor model were improved ($\chi2$ (254) = 398.37, RMSEA = .06, CFI = .91, TLI = .89) and significantly better compared to the five-factor model: ($\Delta\chi2$ = 53.81, Δdf = 11, p < .01). Moreover, the seven-factor model showed the best model fit indices compared to other possible factor solutions, e.g., a one-factor model ($\Delta\chi2$ = 826.68, Δdf

Figure 4.2 Conceptual model with regression coefficients

Indirect paths from inclusive leadership through:
    I.   Proactive employee resources-seeking behavior to
...Vigor .080
...Dedication .115*
...Absorption .077
...Task performance .063*
    II.   Prosocial employee helping behavior to
...Vigor .019
...Dedication .031
...Absorption .024
...Task performance .153**
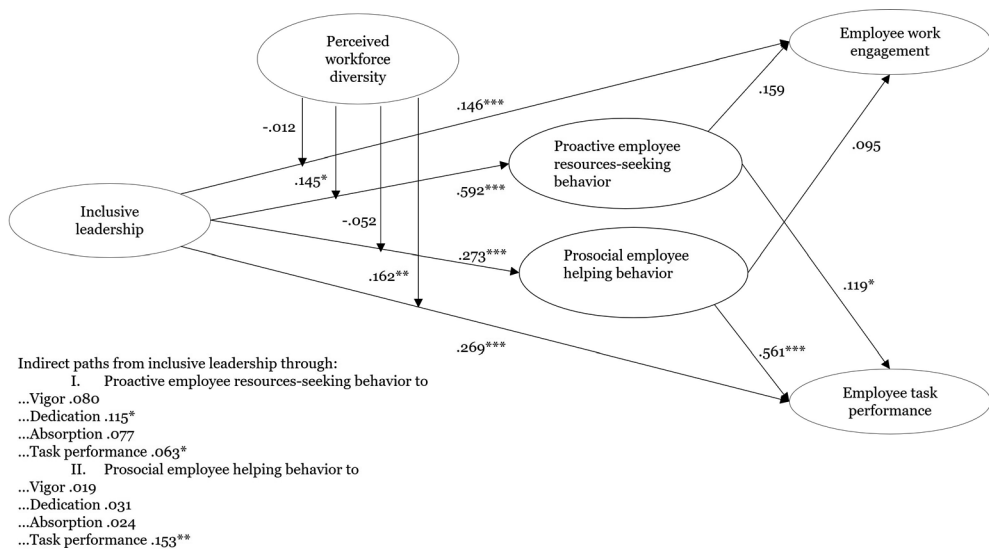
Note. We controlled for age and gender; *** p < .001; ** p < .01; * p < .05.

Table 4.2 Path regressions of conceptual model

Effect	b	se	t	p	95% CI [LL, UL]
Main effects					
Inclusive leadership --> Task performance	0.269	0.080	3.384	**0.001**	**[0.109, 0.422]**
Inclusive leadership --> Vigor	0.301	0.068	4.461	**<.001**	**[0.160, 0.424]**
Inclusive leadership --> Dedication	0.245	0.072	3.419	**0.001**	**[0.095, 0.376]**
Inclusive leadership --> Absorption	0.215	0.080	2.684	**0.007**	**[0.044, 0.358]**
Moderating effects (two-way interactions)					
Inclusive leadership × Perceived diversity --> Task performance	0.162	0.056	2.888	**0.004**	**[0.054, 0.273]**
Inclusive leadership × Perceived diversity --> Vigor	-0.073	0.074	0.984	0.325	[-0.214, 0.073]
Inclusive leadership × Perceived diversity --> Dedication	-0.029	0.067	0.426	0.670	[-0.152, 0.110]
Inclusive leadership × Perceived diversity --> Absorption	0.034	0.081	0.425	0.671	[-0.119, 0.194]
Inclusive leadership × Perceived diversity --> Resources-seeking behavior	0.145	0.058	2.483	**0.013**	**[0.030, 0.262]**
Inclusive leadership × Perceived diversity --> Helping behavior	-0.052	0.108	0.485	0.627	[-0.261, 0.159]
Indirect effects					
Inclusive leadership --> Resources-seeking behaviors --> Task performance	0.063	0.031	2.029	**0.043**	**[0.003, 0.127]**
Inclusive leadership --> Resources-seeking behaviors --> Vigor	0.080	0.066	1.206	0.228	[-0.104, 0.184]
Inclusive leadership --> Resources-seeking behaviors --> Dedication	0.115	0.051	2.245	**0.025**	**[0.016, 0.222]**
Inclusive leadership --> Resources-seeking behaviors --> Absorption	0.077	0.053	1.463	0.143	[-0.034, 0.177]
Inclusive leadership --> Helping behaviors --> Task performance	0.153	0.050	3.038	**0.002**	**[0.065, 0.256]**
Inclusive leadership --> Helping behaviors --> Vigor	0.019	0.022	0.887	0.375	[-0.024, 0.065]
Inclusive leadership --> Helping behaviors --> Dedication	0.031	0.021	1.490	0.137	[-0.010, 0.080]
Inclusive leadership --> Helping behaviors --> Absorption	0.024	0.025	0.956	0.339	[-0.022, 0.077]

Continue Table 4.2

Effect	b	se	t	p	97.5% CI LL UL
Conditional indirect effects					
Conditional on diversity at +1 SD					
Inclusive leadership --> Resources-seeking behavior --> Task performance	0.071	0.030	2.360	0.018	**[0.022, 0.137]**
Inclusive leadership --> Resources-seeking behavior --> Vigor	0.012	0.014	0.914	0.361	[-0.008, 0.048]
Inclusive leadership --> Resources-seeking behavior --> Dedication	0.033	0.020	1.665	0.096	[-0.005, 0.082]
Inclusive leadership --> Resources-seeking behavior --> Absorption	0.016	0.018	0.929	0.353	[-0.008, 0.062]
Inclusive leadership --> Helping behavior --> Task performance	0.035	0.020	1.794	0.073	[0.000, 0.077]
Inclusive leadership --> Helping behavior --> Vigor	0.038	0.027	1.407	0.159	[-0.009, 0.097]
Inclusive leadership --> Helping behavior --> Dedication	0.053	0.033	1.597	0.110	[-0.002, 0.128]
Inclusive leadership --> Helping behavior --> Absorption	0.054	0.034	0.159	0.112	[-0.003, 0.133]
Conditional on diversity at -1 SD					
Inclusive leadership --> Resources-seeking behavior --> Task performance	0.050	0.028	1.782	0.075	[-0.003, 0.108]
Inclusive leadership --> Resources-seeking behavior --> Vigor	0.009	0.011	0.828	0.408	[-0.004, 0.041]
Inclusive leadership --> Resources-seeking behavior --> Dedication	0.023	0.016	1.427	0.154	[-0.000, 0.067]
Inclusive leadership --> Resources-seeking behavior --> Absorption	0.012	0.014	0.838	0.402	[-0.005, 0.054]
Inclusive leadership --> Helping behavior --> Task performance	0.043	0.022	1.947	0.052	[-0.001, 0.088]
Inclusive leadership --> Helping behavior --> Vigor	0.046	0.031	1.484	0.138	[-0.010, 0.111]
Inclusive leadership --> Helping behavior --> Dedication	0.065	0.037	1.752	0.080	[-0.002, 0.145]
Inclusive leadership --> Helping behavior --> Absorption	0.066	0.038	1.749	0.080	[-0.003, 0.147]

Note. We took age and gender variables as control variables in the tested model. N = 152; *** p < .001; ** p < .01; * p < .05; Confidence intervals were calculated based on 5000 bootstrapping. IL refers to inclusive leadership.

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= 21, p < .01). Based on these results we also tested the hypotheses for the dimensions of work engagement separately.

4.5.2 Hypothesis Testing

Figure 4.2 displays the conceptual model containing the regression coefficients. The path regression results (see Table 4.2) showed that inclusive leadership was positively related to employee task performance (b = .269; p = .001) and employee work engagement (dedication [b = .245; p = .001], vigor (b = .301; p ≤ .001], and absorption [b = .215; p = .007]).

In Hypotheses 1 and 2, we expected employee resources-seeking behavior and helping behavior to mediate the relationships between inclusive leadership and employee outcomes. Regarding Hypothesis 1a, predicting resources-seeking behavior to mediate the relation between inclusive leadership and work engagement, we found mediation only on dedication (one dimension of work engagement; b = .115, p = .025, ci = [.016, .222]) but not on the other dimensions of work engagement (b = .080, p = .228, ci = [-.104, .184] for vigor; b = .077, p = .143, ci = [-.034, 0.177] for absorption). In contrast to Hypothesis 2a, we did not find helping behavior to mediate the positive relationship between inclusive leadership and work engagement (b = .019, p = .375, ci = [-.024, .065]; for vigor; b = .031, p = .137, ci = [-.010, .080]; for dedication; b = .024, p = .339, ci = [-.022, .077]; for absorption). Table 4.2 presents these results, which partially support Hypothesis 1a and reject Hypothesis 2a. The mediation analysis showed that both resources-seeking behaviors (b = .063, p = .043, ci = [.003, .127]) as well as helping behaviors (b = .153, p = .002, ci = [.065, .256]) mediated the positive relationship between inclusive leadership and task performance, confirming Hypotheses 1b and 2b.

To examine the moderating effect of perceived diversity, we found that the moderating effect of perceived workforce diversity on the relationships between inclusive leadership and work engagement (Hypothesis 3a) was not supported (b = -.073, p = .325, ci = [-.214,.073] for vigor; b = -.029, p = .670, ci = [-.152, .110] for absorption; b = .034, p = .671, ci = [-.119, .194] for dedication). The results (see Table 4.2) did show that perceived diversity moderated the inclusive leadership-task performance relationship (b = .162, p = .004; also see Figure 4.3). The simple slope test showed that inclusive leadership was positively related to employee task performance when workforce diversity was high (b = .236, p = .033), while it was unrelated when workforce diversity was low (b = .074, p = .100; also see Figure 4.2). Thus, these results reject Hypothesis 3a but support Hypothesis 3b.

Regarding the moderated mediation effects, we found that the two-way interaction between inclusive leadership and perceived diversity was significantly related to employee resources-seeking behaviors (b = .145, p = .013; also see Figure 4.4). Furthermore, we used the process approach in SmartPLS 4.0 to compute the indirect effects at the +1sd and -1sd levels of perceived diversity. Regarding Hypothesis 4a, the

Figure 4.3 The moderating effect of perceived diversity on the relationship between inclusive leadership and task performance
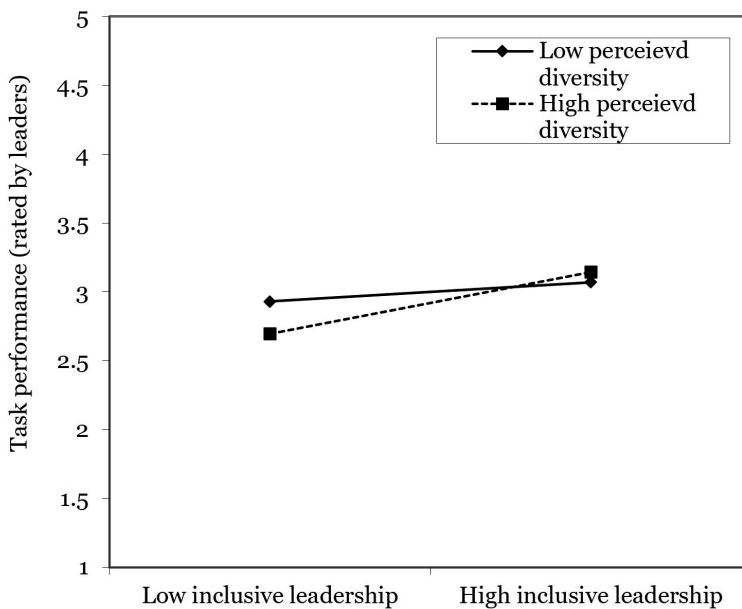
Simple slope test:

High diversity condition: $b = .236$, $p = .033$

Low diversity condition: $b = .074$, $p = .100$

Figure 4.4 The moderating effect of perceived diversity on the relationship between inclusive leadership and resource-seeking behavior
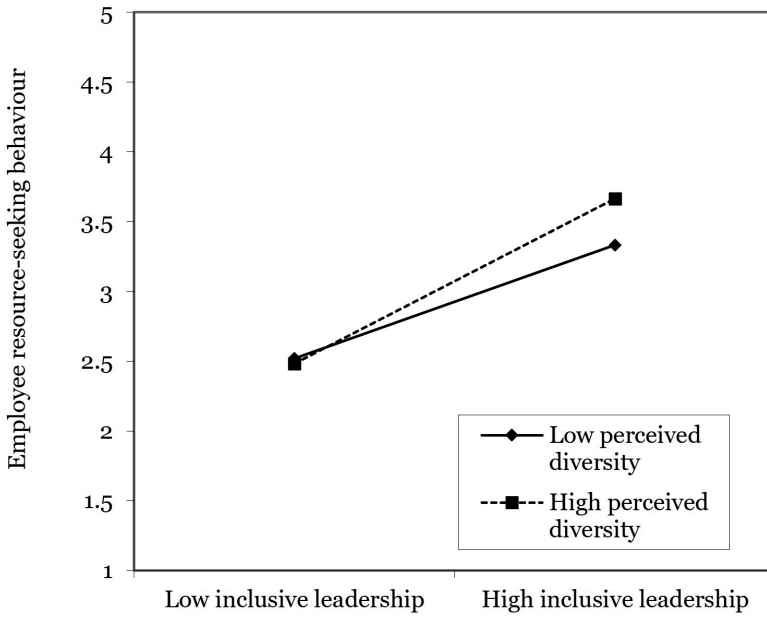
Simple slope test:

High diversity condition: $b = .622$, $p < .001$

Low diversity condition: $b = .428$, $p < .001$

result was insignificant for any dimensions of work engagement. The results showed that the indirect effect of inclusive leadership on task performance through employee resources-seeking behaviors became stronger when perceived diversity was high (b = .071, ci = [.022, .137]). In contrast, it became insignificant when the level of perceived diversity was low (b = .050, ci = [-.003, .108]). Table 4.2 displays the results, which reject Hypothesis 4a and confirm Hypothesis 4b.

Finally, regarding Hypotheses 5a and 5b, we also found insignificant conditional indirect effects. The results showed that the indirect effect of inclusive leadership on task performance through employee helping behaviors was neither significant when the level of perceived diversity was high (b = .035, p = .073) nor significant when it was low (b = .043, p = .052). The same results were found when the outcome variable was the three dimensions of work engagement (due to page limits, please refer to these results in Table 4.2). To conclude, we rejected both Hypothesis 5a and 5b.

Table 4.3 Multigroup structural equation modelling analysis (before the COVID-19 outbreak vs during the COVID-19 outbreak)

Effect	Before the COVID-19 (N = 95)				During the COVID-19 (N = 57)			
	b	se	t	p	b	se	t	p
Main effects								
Inclusive leadership --> Task performance	0.386	0.105	3.676	< **.001**	0.186	0.083	2.254	**0.024**
Inclusive leadership --> Vigor	0.149	0.112	1.325	0.185	0.071	0.086	0.821	0.413
Inclusive leadership --> Dedication	0.267	0.087	3.061	**0.002**	0.077	0.071	1.104	0.271
Inclusive leadership --> Absorption	0.249	0.091	2.726	**0.007**	0.245	0.091	1.048	0.295
Indirect effects								
Inclusive leadership --> Resources-seeking behaviors --> Task performance	0.164	0.082	2.011	**0.045**	0.077	0.056	1.372	0.171
Inclusive leadership --> Resources-seeking behaviors --> Vigor	0.116	0.119	0.976	0.329	0.061	0.084	0.707	0.481
Inclusive leadership --> Resources-seeking behaviors --> Dedication	0.212	0.101	2.092	**0.037**	0.034	0.077	0.438	0.061
Inclusive leadership --> Resources-seeking behaviors --> Absorption	0.253	0.105	2.396	**0.017**	0.068	0.087	0.785	0.432
Inclusive leadership --> Helping behaviors --> Task performance	0.221	0.109	2.032	**0.042**	0.111	0.058	1.889	0.059
Inclusive leadership --> Helping behaviors --> Vigor	0.011	0.032	0.329	0.742	0.011	0.032	0.329	0.742
Inclusive leadership --> Helping behaviors --> Dedication	0.055	0.069	0.793	0.428	0.043	0.035	1.228	0.221
Inclusive leadership --> Helping behaviors --> Absorption	0.003	0.083	0.041	0.967	0.027	0.036	0.744	0.457

Note. Confidence intervals were calculated based on 5000 bootstrapping.

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4.5.3 Additional Analysis (Considering the COVID-19 Circumstances)

The data collection period stretched from May 2018 to April 2021. Therefore, our study includes leader-employee pairs who participated before (95 pairs between May 2018 and February 2020) and during the COVID-19 outbreak (57 pairs between March 2020 and April 2021). Since we were interested in the potential impact of the different working contexts (i.e., primarily working face-to-face vs remotely), we did a multigroup SEM with the grouping variable COVID-19. The results (see Table 4.3) on our dataset showed that during COVID-19, inclusive leadership was only positively related to task performance (b = .186, p = .024) but nonsignificant for any dimensions of work engagement. Also, the result showed that during COVID-19, the indirect effects between inclusive leadership and performance and engagement through employee helping and resources-seeking behavior were insignificant. The findings imply that COVID-19 weakened the positive impacts of inclusive leadership and the indirect effects of employee prosocial and proactive behaviors. In line with our expectations, we found that before COVID-19, inclusive leadership was positively related to task performance (b = .396, p < .001), dedication (b = .267, p = .002), and absorption (b = .249, p = .007). In addition, the indirect effect of resources-seeking behavior was significant for the performance (b = .164, p = .045) and work engagement outcomes (b = .212, p = .037 for dedication; b = .253, p = .017 for absorption). However, the indirect effect of the employee's helping behavior was only significant for the performance outcomes (b = .221, p = .042). These additional analyses may provide further insights into how inclusive leadership, employee prosocial and proactive behaviors, and performance and work engagement were influenced by COVID-19 regulations.

4.6 DISCUSSION

The present study examined whether employee resources-seeking and helping behavior mediated the relationships between inclusive leadership and employee outcomes (i.e., work engagement and task performance) and whether inclusive leadership had a more substantial positive impact in more diverse work contexts. The results expand our knowledge regarding the behavioral mechanism of how inclusive leadership relates to employee work outcomes by identifying resources-seeking and helping behavior as possible mediators for task performance and partially for work engagement. Furthermore, we deepen the limited understanding regarding the impact of

workforce diversity on inclusive leadership (Nishii & Leroy, 2022) and show that inclusive leadership is especially effective in benefiting proactive behavior and task performance when workforce diversity is high. The results make several contributions to the existing research.

First, we found employees' behaviors essential when explaining the positive impact of inclusive leadership on employee outcomes. Earlier research has focused on cognitive or affective mechanisms (i.e., perceived work group identification, perceived psychological empowerment, and perceived psychological safety) through which inclusive leadership links to employee outcomes (Shore & Chung, 2021). Our study confirms previous findings regarding the positive relationships between inclusive leadership and employee work engagement and task performance (e.g., Bao et al., 2022; Mitchell et al., 2015). However, we show that employees' active responses to inclusive leadership display, next to the leadership, a crucial role in benefiting from workforce diversity (Randel et al., 2018). Employees who perceived more inclusive leadership were more willing to exchange resources with others at work, namely, offering help to their colleagues and seeking resources (e.g., advice) from their leaders. Furthermore, exchanging resources with colleagues and the leader led to higher performance ratings. Interestingly, we found inclusive leadership to relate positively to employee work engagement, but the behavioral mechanisms did not play a crucial role in this relationship. The following reasoning might explain these results.

Resources-seeking mediated the relationship between inclusive leadership and only one dimension of work engagement: dedication. We provide a conceptual explanation to the current literature by combining insights from work engagement and workplace inclusion research. Dedication represents the emotional and motivational component of work engagement (while vigor and absorption are behavioral and cognitive dimensions: (Schaufeli et al., 2006). Job resources provided by inclusive leadership (e.g., support to contribute unique opinions) are strong predictors of feeling significant and proud, which also characterizes work dedication (Decuypere & Schaufeli, 2021). This relatedness might explain why the indirect effect through the exchange with the leader (resources-seeking) was only significant on the emotional dimension of work engagement. Another explanation for our results might be that proactive rather than prosocial behavior stimulates the motivational process. Thus, helping others might not immediately provide the resources needed to increase work engagement (Demerouti et al., 2010). Additionally, helping might not be related to experiencing higher work engagement for all employees but perhaps only for those with high prosocial motivation or who are trying to confirm a positive self-identity (Nelissen et al., 2017). Overall, our findings regarding the behavioral mechanisms between inclusive leadership and employee task performance

and work engagement further reveal the adaptive process of inclusive leadership and its effects on employee outcomes (Nishii & Leroy, 2022).

Our second contribution to the existing literature addresses the interdependency of inclusive leadership on workforce diversity. In this regard, workforce diversity displayed a facilitator for the link between inclusive leadership and proactive behavior as well as task performance. Inclusive leadership was only positively related to performance ratings if perceived diversity was high. The indirect effect through resources-seeking behavior was stronger the more workforce diversity was perceived. We confirm the conceptual work, which proposed that inclusive leadership embraces the potential benefits of diversity in organizations (Homan et al., 2020). We show that inclusive leadership supports employees to overcome challenges associated with diversity (e.g., communication barriers or assimilation, Van Knippenberg & van Ginkel, 2022). In diverse teams, employees who receive inclusive leadership are more proactive and perform better. Against our prediction, perceived workgroup diversity did not boost the positive relationship between inclusive leadership and employees' work engagement. We conclude that the relationship between inclusive leadership and work engagement is less sensitive to the perceptions of differences among group members. Our results align with Behnke et al. (2022), who found that aspects of employee well-being (i.e., employee exhaustion) were independent of someone's inclusion experience in a diverse work environment. Thus, we assume that the impact of work characteristics, such as leadership, on work engagement is stable across different levels of diversity (Crawford et al., 2010). Overall, our results confirm the assumption that the positive impacts of workforce diversity and inclusive leadership are not generic but interrelated.

Finally, our results show that STEM organizations can foster the exchange of resources (i.e., helping and resource-seeking behavior) among their employees by ensuring that their leaders make individuals feel included in their workgroups. Most studies in the STEM workplace solely focus on enlarging diversity while neglecting how organizations can effectively use employee differences to benefit from workforce diversity (McClelland & Holland, 2015). Thus, we advance existing literature by underscoring the beneficial role of workplace inclusion (Shore et al., 2018).

Our additional analyses regarding the context of COVID-19 provide a final contribution. The results showed that the COVID-19 condition influenced work engagement rather than task performance. We conclude that COVID-19 significantly influenced the employee health impairment process rather than the duties in employees' formal work descriptions (see the new propositions of job demands-resources theory in times of crisis, Demerouti & Bakker, 2022). inclusive leadership is less effective in stimulating employee engagement when teams work remotely. It might be that leaders

need additional skills to manage the engagement of remote working employees effectively. In this regard, Panteli et al. (2019) observed in their qualitative study that stimulating employees' work engagement in virtual teams needed ongoing effort from the leaders. Moreover, to foster work engagement in virtual teams, appropriate information, financial benefits, and continuous encouragement and feedback were crucial resources (Panteli et al., 2019). Inclusive leadership represents a relational leadership style and thus might focus primarily on providing encouragement and feedback rather than process-related information or payment. Furthermore, research has pointed out that managing remote employees requires e-leadership skills (Chamakiotis et al., 2021). Effective virtual leadership requires the adoption of new behaviors, communication, and collaboration practices to build trust with employees (Panteli et al., 2019). Thus, inclusive leaders need to adjust their practices to deal with the challenges of virtual teams to foster their team members' work engagement (Chamakiotis et al., 2021).

4.6.1 Limitations and Future Research

This study holds some limitations and offers suggestions for future research. First, our sample size is comparatively small and was conducted in a particular sector and cultural context, which prohibits the generalizability of our results for other organizations. Moreover, the cross-sectional nature of our data displays an obvious limitation because we cannot conclude causality. Even though social learning theory suggests a specific causal order, future research may examine the suggested relationships using a longitudinal design. Such a design also allows for exploring whether employees might be role models for their leaders. Recent research suggests that proactive employees encourage their leaders to become more empowering, increasing employee work engagement and crafting behavior (Bajaba et al., 2021). By analogy, it might be that employees potentially stimulate inclusive leadership by practicing the respectful exchange of resources (Nishii & Leroy, 2022).

Although this research is based on cross-sectional data, the results allow for valuable proposals for future longitudinal and multilevel studies. Our study focused on proactive employee prosocial behavior that potentially leads to more inclusive work environments through social interaction based on trust and value from different perspectives. Nevertheless, our study did not examine this consequence as such. Future research may explore how the interaction of inclusive leadership and employee behaviors stimulate an inclusive climate. Moreover, research may study potential team-level processes and outcomes, such as exchanging opinions within teams or team innovation. In line with the suggestion to embrace team research, future studies could make the measure of inclusive

leadership more robust by including multiple team members to estimate inclusive leadership.

Our findings highlight the value of inclusive leadership for performance, especially in more diverse work environments. A next step could be to investigate if inclusive employee behavior is related to better performance and well-being and whether these relationships are stronger in more diverse environments. In this regard, displaying inclusive behaviors at work might hinder social categorization and enable better communication, transparent idea-sharing, and less stereotyping (Van Knippenberg & van Ginkel, 2022).

Future research might also check possible confounds, such as how well the leader and employee knew each other or how frequently they had contact. Potentially, these aspects influenced the ratings of each other's behaviors (i.e., inclusive leadership, helping behavior, and task performance; Derue et al., 2011). For instance, the employees' ratings of inclusive leadership might be biased by the perception that the leader holds the same values (Cho & Knowles, 2013).

4.6.2 Practical Implications

Our study offers several implications for organizations. First, as inclusive leadership stimulates helping and resources-seeking behavior, employee performance and work engagement, employees and teams benefit if leaders adopt inclusive behaviors. Our results also show that inclusive leadership is crucial for task performance and resource-seeking behavior in STEM organizations' desired work environments with high workforce diversity. To improve inclusive leadership competencies, leaders might follow coaching and training programs or nurture a deeper exchange with their employees, as Javed et al. (2019) recommended. Leaders need to know how they can create strong teams (e.g., through shared goals and values) in which individuals feel heard and respected (e.g., through knowing individual strengths and how these contribute to the team). Additionally, Randel et al. (2018) suggested that leaders' pro-diversity beliefs, humility, and cognitive complexity are precursors of inclusive leadership, which can be a focus of development initiatives. Finally, inclusive leaders appear more authentic if they believe in the benefits of diversity (Van Dick et al., 2008) and support organizational initiatives regarding diversity and inclusion (Veli Korkmaz et al., 2022). In this regard, organizations support inclusive leadership by sharing clear organizational missions and strategies regarding diversity and inclusion and ensuring that leaders can communicate these within the organization. On the other hand, organizations need to investigate the alignment of diversity and inclusion values between the organizations and the leaders.

Moreover, the current study highlighted the importance of employee prosocial and

proactive behavior to translate inclusive leadership into improved task performance. Therefore, besides leaders, the employees benefit from awareness of how inclusive leadership benefits their interactions with leaders and colleagues and how their behavior can maximize their work performance. Strategies for resource exchange (i.e., resources-seeking and helping behavior) and how to benefit from resources can be a recurrent theme in team meetings in which leaders share their behavioral intentions and expectations regarding employee behavior. Organizations might also want to provide job-crafting training to their employees to enhance resource exchange (Dubbelt et al., 2019).

4.7 CONCLUSION

Research on inclusive leadership progresses, but knowledge gaps remain regarding how and in which context inclusive leadership is efficient. While investigating the impact of inclusive leadership, studies neglect, on the one hand, how employees' behavior mediates the relationship between inclusive leadership and employee outcomes. On the other hand, the collective impact of inclusive leadership and workforce diversity appears unexplored. Our study, among leader-employee dyads from predominantly Dutch STEM organizations, revealed initial evidence of potential behavioral mechanisms (i.e., prosocial and proactive behavior) between inclusive leadership and employee task performance. Moreover, when high workforce diversity was perceived, inclusive leadership was particularly critical regarding task performance and resource-seeking behavior. Our empirical results confirm other scholars' suggestions to examine the impact of inclusive leadership in a multilevel process model (Nishii & Leroy, 2022). In congruence with our findings, we propose that future research and practitioners take the role of employee behavior and the extent of workforce diversity into account when examining the impact of inclusive leadership.

4

FOOTNOTES

[1] Worth mentioning the data collection took place between May 2018 and April 2021. Therefore, of all 152 employee-leader pairs, 95 pairs participated before the COVID-19 outbreak (May 2018-February 2020), while 57 pairs filled in the questionnaires during the COVID-19 pandemic (March 2020-April 2021). During the pandemic, we assume that based on the sectors and functions included in this study, most participants had to work exclusively or, to a great extent, from home because of recurrent lockdowns in the Netherlands and Germany.

[2] There were no significant differences between the employees from Dutch and German organizations regarding the study variables, despite employees from German organizations reporting higher scores regarding inclusive leadership compared to employees from Dutch organizations (t(150) = -2.111, p = .036). Because of the small sample size and the unequal group sizes, we decided to remain all dyads in the sample. Adding the location as a control variable to our analyses did not change the results.

4

4

Feeling Included and Supported at My New Workplace. An Onboarding Intervention

"The onboarding intervention prevented newcomers from assimilating to the organizational identity and thereby suppressing their own individual identity. Participants of the intervention engaged to a greater extent in sense-making behavior, felt more valued for their unique characteristics, and perceived more social support at their new workplace."

ABSTRACT

In Europe, more than one-third of doctoral candidates leave academia before completing their degree, and most dropouts exit the university before the end of their first year. Examining the aspects that make young academics feel included and socially supported is essential to detect opportunities to decrease the dropout-rate. We tested an onboarding intervention at a Dutch university of technology using a quasi-experimental design (i.e., intervention group, N = 110, and a control group, N = 66). The intervention encourages doctoral candidates to seek social, job, and personal resources, which we hypothesized would increase newcomers' experiences of belongingness, valued uniqueness, and social support of supervisors and peers throughout the onboarding phase (i.e., five weeks and twelve weeks after entry). Multilevel regression analyses revealed that the intervention was particularly successful in increasing the outcome variables, as newcomers who participated in the intervention experienced improved levels of valued uniqueness and social support of peers and their supervisors. Participants in the intervention group also increased their sensemaking behavior. Furthermore, sensemaking behavior was the primary driver of participants' increased experience of valued uniqueness and peer support. Overall, an onboarding intervention that allows newcomers to adjust the onboarding process to their needs and to embrace their unique identities seems to promote young academics' social integration at a technical university. We conclude that a newcomer-centric onboarding approach represents a valuable tool for reducing the attrition rate of new doctoral candidates.

Keywords: Onboarding, inclusion, belongingness, valued uniqueness, social support, proactive behavior, sensemaking, STEM, young academics/doctoral candidates

5.1 INTRODUCTION

Employees from minority groups (e.g., based on gender, seniority, or nationality) are more often exposed to experiences of exclusion and receive less social support at work (Walton & Cohen, 2007). Young academics represent the highest diversity among the academic ranks and are thus particularly threatened by workplace exclusion (VNSU, 2020). Individuals who do not feel welcomed at work are less satisfied and more likely to leave the organization again (Saks et al., 2007). Therefore, universities would benefit from tackling related issues already when a new young academic starts at a university (Findler et al., 2007). During the onboarding period, which refers to the period during which a new employee familiarizes with the new work (Bauer & Erdogan, 2011), organizations provide resources to employees that inform their inclusionary status (Baumeister & Leary, 1995). Inclusion refers to an individual's feeling of being a respected part of the workgroup (Shore et al., 2018). Organizations can provide inclusive procedures or stimulate inclusive interactions between organizational members (e.g., facilitating inclusive leadership). Both can enhance newcomers' inclusion experience because unconscious prejudices toward minority employees are diminished (Dobbin & Kalev, 2016). Nevertheless, organizations are restricted in offering inclusive onboarding if newcomers do not get an active role in the process (Cable et al., 2013). When employees cannot express their individual needs or bring in their unique backgrounds, they potentially suppress their identity and adapt to the organizational norms, which leads to assimilation and dissents from the conditions of an inclusive workplace (Shore et al., 2018).

Newcomers' pro-active behaviors during the onboarding period (e.g., sensemaking or relationship building) are thought to improve the adjustment of new employees (Bauer et al., 2011; Ellis et al., 2015). Xian et al. (2018) evaluated that compared to organizational strategies, newcomers' proactive behaviors have a greater effect on successful socialization (e.g., task clarity). However, there is a need to investigate which specific proactive behaviors (and associated resources) matter most to socialization and, in this way, uncover the context of how and why these behaviors might have an impact on a newcomer's adjustment (Bauer et al., 2021; Ellis et al., 2015). Furthermore, although scholars have recognized the importance of newcomers' proactive behavior in effective workplace adaptation, concrete guidelines and formats of interventions that stimulate proactive onboarding behavior are lacking (Tianyan et al., 2018). Interventions have mostly focused on institutionalized approaches. These helped newcomers become familiar with organizational strategies and goals and thus neglected to help newcomers maintain their individual identity in a new workplace (e.g., Allen, 2006; Saks & Gruman,

2012). Interventions that have emphasized newcomers' authenticity and self-expression are limited to single sessions (Cable et al., 2013). This is problematic because on-the-job training has been found to be most successful in socializing newcomers (Frögéli et al., 2023). Therefore, our intervention encourages young academics to reflect on their unique situation and integrate the proposed beneficial behaviors into their daily work. Focusing on what newcomers' need to integrate successfully is essential to understand how newcomers can feel more inclusion and social support at work (Shore et al., 2018).

To provide a complementary alternative to the existing interventions, we developed an onboarding intervention for young academics who started working at a science, technology, engineering, and mathematics (STEM) university. The stereotypical picture of an academic (i.e., white, senior, and male) may make it hard for doctoral candidates to feel that they belong and can be authentic at their new workplace (Van Veelen et al., 2019). Research has shown that most doctoral candidates drop out during their first year of employment and that social integration displays a major issue for them (Skopek et al., 2022; Wollast et al., 2018). Thus, improving young academics' inclusion experiences from the first day on is essential but has been recognized as specifically challenging in STEM universities (Walton et al., 2015). We designed an onboarding intervention in line with the socialization resources theory (Saks & Gruman, 2012) and the cyclical model of self-regulated learning (Zimmerman, 2013). The intervention sets out to empower newcomers to engage in five proactive behaviors (i.e., building relationships, sensemaking, crafting networks, seeking job resources, and using strengths) that potentially enhance their social integration at their new workplace (Ashford & Black, 1996; Bauer & Erdogan, 2011; Ellis et al., 2015). Training and encouraging these behaviors aim to increase newcomers' feelings of inclusion and perceptions of social support.

Our study contributes to the existing literature in several ways. First, we add to the inclusion literature by examining whether employees can proactively contribute to their feelings of inclusion and social support during the onboarding process. Research has focused on what supervisors and organizations can do to create inclusive workplaces (e.g., training inclusive leader behaviors or formulating inclusive policies), overlooking the role of employees themselves (Nishii & Leroy, 2022; Shore et al., 2018). Thus, we are one of the first to present an HR practice in which newcomers (bottom-up by engaging in proactive onboarding behaviors) and organizations (top-down by providing an onboarding intervention that facilitates social interaction while allowing newcomers' self-expression) share the responsibility to create an inclusive work environment for newcomers.

Second, we offer a newcomer-centric view to the socialization literature by presenting empirical insights into the extent to which newcomers seek social, job, and

personal resources through proactive onboarding behaviors. Our customized onboarding intervention allows us to examine whether these resource-seeking behaviors are trainable and valuable to newcomers' adjustment. Although scholars have recognized the valuable impact newcomers' proactive onboarding behaviors have on successful socialization (Tianyan et al., 2018), the knowledge regarding concrete guidelines of how to train these behaviors and the potential effects of these trainings are still lacking (Frögéli et al., 2023).

Finally, we contribute to the onboarding intervention literature by empirically uncovering whether an online intervention can improve the socialization of young academics in a STEM university. Such an endeavor is timely and essential, as welcoming and including minority groups seems especially challenging in these environments (Walton et al., 2015). Minorities (e.g., internationals, women, or junior staff) who need to adapt to the prevailing organizational identity are prone to suppress their identities, undermining their feelings of inclusion and social support at work (Shore et al., 2018). Our training enables young academics to take control in shaping their own inclusion. Therefore, this study offers a cost-efficient approach to improving young academics' health, performance, and retention (Walton & Cohen, 2007; Williams, 2007). We introduce the mechanisms of the cyclical model of self-regulated learning (Zimmerman, 2013) to the onboarding intervention research and combine it with the socialization resources theory (Saks & Gruman, 2012) to reach the effectiveness of our intervention.

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5.2 THEORY AND HYPOTHESES

5.2.1 Onboarding From a Socialization Resources Theory Perspective

Socialization resources theory (Saks & Gruman, 2012) states that newcomers require specific resources to deal with the uncertainty and stress provoked by entering a new work situation. Resources (i.e., social, job, and personal resources) potentially inform the newcomer regarding their role in the team, their tasks, others' expectations, or the organizational culture (Ellis et al., 2015) and are needed to learn the skills and desired behaviors that they need for their new work role (Bauer et al., 2021). Socialization resources theory distinguishes social resources (e.g., tacit knowledge) that stem from social relationships with organizational insiders from job resources that refer to aspects required to perform their new tasks, such as physical work material, software, or feedback (Saks & Gruman, 2012). We complement these social and job resources with personal

resources (e.g., self-efficacy), which have been postulated as a valuable ingredient of earlier interventions to increase employee functioning (Bakker & van Wingerden, 2020).

Van Maanen and Schein (1979) provided an overview of different onboarding strategies, valuable to reach resources during onboarding, which Jones (1986) characterized as either institutionalized or individual approaches. Institutionalized strategies are standardized for all newcomers and thought to produce uniform responses (Jones, 1986). In this regard, organizations provide predefined job resources (e.g., information on organizational goals, work processes, and work roles) or present predetermined role models (i.e., social resources) to the employees, which has been associated with beneficial newcomer outcomes, such as role clarity or social acceptance (Bauer et al., 2007; Saks et al., 2007). In comparison, within an individualized onboarding approach, newcomers are responsible for their own onboarding experiences (Jones, 1986). The individualized strategies are informal and random and thus might increase uncertainty because the newcomer is not guided by clear job and social resources (Ellis et al., 2015). Nevertheless, since newcomers are personally challenged to adjust their work roles, tasks, and relationships in a way that suits them best, individualized strategies allow for unique learning experiences and tend to lead to more creativity, a greater person-job fit, and higher levels of job satisfaction (Jones, 1986). Especially in the light of onboarding employees from minority groups, it might be beneficial to encourage newcomers to be proactive and seek appropriate resources to become supported organizational insiders while sustaining their personal identity (Scholz & Szulc, 2023).

5.2.2 The Onboarding Intervention

The socialization literature moves towards uncovering the importance of proactive strategies to onboard effectively (Ashford & Black, 1996; Bauer & Erdogan, 2011). However, past studies have been qualitative and thus do not provide quantifiable results (Harris et al., 2020; Mornata & Cassar, 2018). Moreover, intervention studies have focused on institutionalized interventions aiming to help newcomers to build up an organizational identity (e.g., get familiar with organizational strategies and goals, learn about organizational values and desired behavior: Allen, 2006; Saks & Gruman, 2012). Thus, the literature lacks evidence on how to train newcomers' proactivity while maintaining their personal identity in a new workplace. Scholars show that organizations with newcomer-centric interventions (i.e., emphasizing newcomers' authenticity and self-expression) might benefit more. Cable et al., (2013) compared two one-hour sessions during newcomers' first day at an Indian call center. The one session stimulated the creation of an individual identity within the organization, and the other session

strengthened newcomers to develop an organizational identity. They found that the group with the individual identity session had lower attrition rates after six months. Despite these valuable findings, this study does not provide insights regarding newcomers' feelings related to social integration. Some onboarding interventions in the STEM sector have addressed the social belongingness of specific minority groups (i.e., black or female students and female employees) but show inconclusive results (Mobasseri et al., 2021; Walton et al., 2015; Walton & Cohen, 2011). In these studies, participants first received narratives of university/organizational members and, second, reflected on their own experience entering the university/organization in an essay/video. The narratives focused on feeling belonging and overcoming isolation or addressing other aspects and strategies to socialize (e.g., incorporating broader aspects of self-identity to deal with stress: Walton et al., 2015). The social-belongingness interventions reduced GPA differences between minority and majority student groups (Walton et al., 2015; Walton & Cohen, 2011). Nevertheless, a similar intervention offered to female STEM employees was ineffective (Mobasseri et al., 2021). The inconclusive results raise the question of when proactive behaviors effectively stimulate newcomers' social integration. Research has pointed out that on-the-job training rather than stand-alone interventions are successful in socializing newcomers (Frögéli et al., 2023).

We designed an onboarding intervention to address the deficits of existing onboarding interventions and boost young academics' proactive onboarding behaviors. The intervention encourages newcomers to seek social, job, and personal resources, which they require in their unique context. By allowing self-expression during onboarding, our intervention aims to improve newcomers' social integration (i.e., feelings of inclusion and perceptions of social support). We expect the intervention to be effective because it introduces the phases of the cyclical model of self-regulated learning (Zimmerman, 2013) to socialization resources theory (Saks & Gruman, 2012). Self-regulated learning covers the cognitive, motivational, and affective processes that influence learning at the individual level (Panadero, 2017). Our intervention represents the three phases that are essential in the self-learning process (Zimmerman & Labuhn, 2012), namely the forethought phase, performance phase, and self-reflection phase. Throughout these phases, an individual inherently analyzes and plans the task (forethought phase), engages in the task (performance phase), and evaluates one's behavior and the consequences (self-reflection phase). Based on the model of self-regulated learning (Zimmerman, 2013), learning occurs after the three phases have been completed successfully. Still, the reflection phase also contributes to and starts the next forethought phase, eventually leading to a learning-cycle.

In our intervention, the active elements driving behavioral change are action

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planning, behavioral practice, and self-reflection (Michie et al., 2013; Zimmerman & Labuhn, 2012). Appendix 5A presents the phases of the self-regulated learning model. It links the elements of our intervention to the behavioral change techniques that motivate newcomers to seek the necessary social, job, and personal resources to effectively onboard. Within the forethought phase, participants prepare themselves for learning by analyzing their situation and visualizing desired outcomes (Zimmerman & Labuhn, 2012). Strategic planning of how, when, and why to perform the onboarding behaviors increases participants' effectiveness by identifying aspects that may facilitate or hinder their undertaking (Sitzmann & Ely, 2011). Additionally, clarifying desired outcomes likely increases participants' motivation to engage in the behaviors (Michie et al., 2013). Furthermore, during the performance phase, learning is stimulated because participants experience self-control through structuring their environment while monitoring their behavior and outcomes (Zimmerman & Labuhn, 2012). The final learning phase displays a crucial aspect since self-reflection steers the effectiveness of our future actions (what went well and what can be improved: Zimmerman, 2013). Moreover, reflecting on what the participant has achieved potentially improves the participants' self-image to be successful in acquiring social, job, and personal resources in the future (Sitzmann & Ely, 2011).

5.2.2.1 Trained Onboarding Behaviors

During the intervention, we trained four proactive onboarding behaviors, which align with the suggestions of other researchers (Ashford & Black, 1996; Bauer & Erdogan, 2011). We propose that through these behaviors, newcomers can gain social resources (i.e., relationship building with colleagues/supervisor), job resources (i.e., sensemaking and job crafting), and personal resources (i.e., strengths-use).

5.2.2.1.1 Seeking social resources. Social contacts at work support newcomers by providing important informal information about the team and new colleagues. This information helps newcomers to create social relationships and position themselves in the organization (Reichers, 1987). The exchange of resources with others at work is crucial because it builds a fundament for social integration (Bauer et al., 2021). However, resources may differ depending on the source (i.e., supervisor or colleague) that provides them (Chan & Schmitt, 2000). Since we are interested in the distinct impact of these social resources, we differentiate between resource-seeking behavior from colleagues, the supervisor, and the network (i.e., network crafting). Prominent examples of how seeking social resources may occur during the onboarding period are stopping by other's offices, chatting in the coffee/kitchen area or at lunch, interacting with group members at social events, or planning introduction meetings with new colleagues (Ashford & Black, 1996;

Bauer & Erdogan, 2011).

5.2.2.1.2 Seeking job resources. Proactivity is crucial in a successful onboarding experience (Bauer & Erdogan, 2011). Newcomers are urged to seek job resources (e.g., information on policies and procedures) to lower uncertainty regarding their roles and tasks. Newcomers can gain knowledge from organizational materials (e.g., homepage, brochure, or HR information) or organizational stakeholders (e.g., HR personnel, supervisor, or colleague). Seeking job resources is a very individual process that can be adjusted to the personal situation of a newcomer (Tims et al., 2016). As an example, newcomers' work tasks come with specific demands (e.g., creating an education plan costs a starting young academic time and effort to explore appropriate courses and meet the university regulations for such a plan). Seeking resources (e.g., information on the internet regarding valuable courses) can help the newcomer meet specific task demands and improve the work solution (i.e., the education plan).

5.2.2.1.3 Seeking personal resources. We suggest newcomers seek personal resources to adjust to their new workplace (Ellis et al., 2015). Former research has shown that strengths-based interventions effectively increase personal resources (e.g., resilience or self-efficacy: Bakker & van Wingerden, 2000). We, therefore, include strength-use as a behavioral strategy to facilitate the onboarding process. Strengths represent abilities that enable individuals to thrive at their best (Wood et al., 2011). Newcomers who reflect on their interests and abilities to identify their strengths can match these with their work requirements (Kooij et al., 2017) and increase their feeling of competence and self-efficacy (Bakker & van Wingerden, 2020).

Hypothesis 1: Engaging in relationship building with colleagues (1a), relationship building with supervisors (1b), sensemaking (1c), networking (1d), seeking job resources (1e), and strengths-use behavior (1f) will increase over time for participants in the intervention group, while the engagement in these behaviors will not improve for participants in the control group.

5.2.2.2 Newcomers' Social Integration

Our research targets different types of outcome variables related to social integration. First, inclusion consists of two subdimensions (Jansen et al., 2014): The feeling of group belongingness (an experience of being a welcomed group member with a shared group identity) and the feeling that one can be authentic around other organizational members based on the impression that one's unique background and characteristics are valued (i.e., valued uniqueness). Although scholars have recognized these two sub-dimensions, literature tends to examine inclusion as a total construct (Chung et al., 2019) and reveals

positive relationships between inclusion experience and employees' well-being and performance (Chen & Tang, 2018; Jaiswal & Dyaram, 2020). During onboarding, social acceptance seems especially important for the performance of inexperienced employees such as young academics (Bauer et al., 2007).

Inclusion is likely a reciprocating process (Nelissen et al., 2017). Employees who engage in proactive behaviors, which facilitate their adjustment, most likely boost their own feelings of belongingness (Fang et al., 2011). Through social interactions and information acquisition, newcomers will increase social, job, and personal resources that help them become organizational insiders (Bauer & Erdogan, 2011). More specifically, newcomers gain valuable tacit knowledge regarding the new workgroup, desired behaviors, and social norms (Ashford & Black, 1996), which they use to create a shared team identity, eventually resulting in a sense of belongingness.

In addition, employees who can express themselves and adjust their new work environment to their needs will consequently feel that they are seen, valued, and respected in the organization as a unique person (Cable et al., 2013). The proactive behaviors support newcomers to present themselves authentically through sharing their ideas within social interactions or using their strengths in the new work context. This authentic representation process will decrease assimilation to the dominant organizational identity and allows newcomers to form their own identity rather than suppressing it (Cable et al., 2013). Furthermore, people will value the characteristics of others if they frequently exchange with them (Wright et al., 1997). Through the trained proactive behaviors, newcomers reach out to others in the organization and frequently interact. This social exchange with colleagues and supervisors enhances the opportunity to see the newcomers' specific knowledge and characteristics. It thus increases the likelihood that others appreciate the newcomer's unique contributions at work.

Hypothesis 2: Feelings of belongingness (2a) and feelings of valued uniqueness (2b) will increase over time for participants of the intervention, while these feelings will not improve for participants in the control group.

Next, social support refers to interpersonal behaviors of others that are perceived to be helpful and increase a person's psychological or behavioral functioning (J. I. Harris et al., 2007). At work, supervisors and direct colleagues are predominant sources of social support and were shown to increase job satisfaction and performance while decreasing burnout experiences and withdrawal behavior (Baruch-Feldman et al., 2002; Kammeyer-Mueller et al., 2013). Especially during the onboarding period, social support is critical because receiving help at the beginning of one's employment likely increases
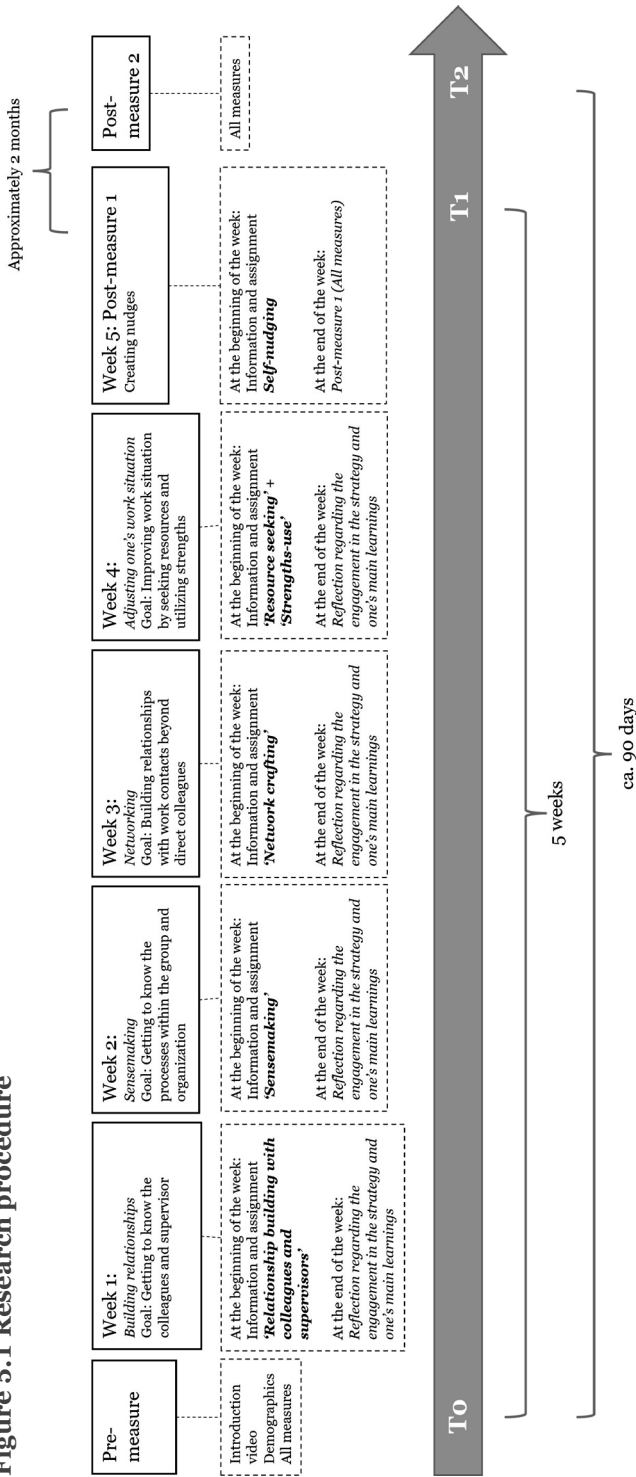
one's productivity (Baruch-Feldman et al., 2002). The interaction with work contacts will create a net of relations that newcomers can access if they need help, whereby frequent interactions will lead to stronger and more trustful relationships, representing a greater source of support (Smallwood & Allen, 2020). In our study, we assume that newcomers who proactively approach others most likely receive more support since people inherently like to help (Zeijen et al., 2020). We distinguish between peer and supervisor support because both provide unique information, and newcomers build different relations with their leaders or colleagues (Baruch-Feldman et al., 2002).

Hypothesis 3: Perceived supervisor support (3a), and perceived peer support (3b) will increase over time for participants of the intervention, while these perceptions will not improve for participants in the control group.

Taken together, our intervention stimulates newcomers to engage in proactive onboarding behaviors that foster social, job, and personal resources. Together, these resources allow newcomers to build their organizational identity (Jones, 1986). Since resources are typically not generically spread by the organization, but newcomers acquire resources that match their personal preferences, newcomers create an organizational identity that allows authentic expression rather than assimilation to the majority of the organization (Cable et al., 2013). Furthermore, our intervention encourages social interactions with other organizational members (and beyond). If newcomers have frequent exchanges with others at work, they will create trustful relationships, which are the basis for receiving support (J. I. Harris et al., 2007). Additionally, the relationships encourage newcomers to share their backgrounds, knowledge, and capabilities, which allows them and others to see how the newcomer can contribute to the organization and leads to feelings of belongingness and that one is valued (Shore et al., 2018). We, therefore, hypothesize that the intervention will indirectly boost the outcome variables through the trained, proactive onboarding behaviors:

Hypothesis 4. The onboarding intervention will relate to increases in onboarding behaviors (i.e., [4.1] relationship building with colleagues, [4.2] relationship building with supervisors, [4.3] sensemaking, [4.4] networking, [4.5] seeking job resources, and [4.6] strengths-use behavior) over time, which will relate positively to changes in (a) feelings of belongingness, (b) feelings of valued uniqueness, (c) perceived supervisor support, and (d) perceived peer support.

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Figure 5.1 Research procedure

Pre-measure	Week 1: *Building relationships* Goal: Getting to know the colleagues and supervisor	Week 2: *Sensemaking* Goal: Getting to know the processes within the group and organization	Week 3: *Networking* Goal: Building relationships with work contacts beyond direct colleagues	Week 4: *Adjusting one's work situation* Goal: Improving work situation by seeking resources and utilizing strengths	Week 5: Post-measure 1 Creating nudges	Post-measure 2
Introduction video Demographics All measures	At the beginning of the week: Information and assignment *'Relationship building with colleagues and supervisors'* At the end of the week: Reflection regarding the engagement in the strategy and one's main learnings	At the beginning of the week: Information and assignment *'Sensemaking'* At the end of the week: Reflection regarding the engagement in the strategy and one's main learnings	At the beginning of the week: Information and assignment *'Network crafting'* At the end of the week: Reflection regarding the engagement in the strategy and one's main learnings	At the beginning of the week: Information and assignment *'Resource seeking'* + *'Strengths-use'* At the end of the week: Reflection regarding the engagement in the strategy and one's main learnings	At the beginning of the week: Information and assignment *Self-nudging* At the end of the week: *Post-measure 1 (All measures)*	All measures

Approximately 2 months
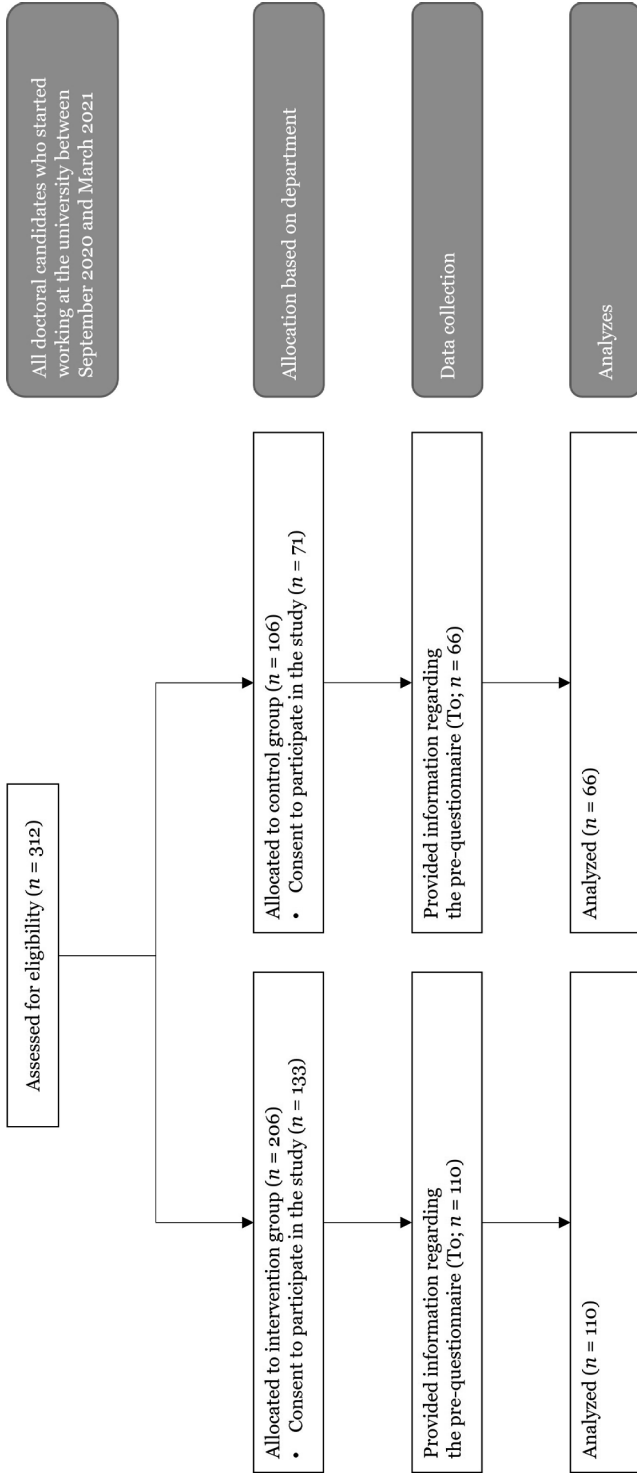
5 weeks

ca. 90 days

T0   T1   T2

5.3 METHOD

5.3.1 Study Design and Procedure

The study was conducted between September 2020 and June 2021 at a Dutch STEM university. To investigate the effectiveness of the onboarding intervention, we conducted a quasi-experiment with a pretest-posttest nonequivalent groups design (Jhangiani et al., 2019). We had a between-subject design study in which participants were not randomly assigned to the intervention and control group, and control group participants did not receive any treatment between pre- and post-measures. We aimed to prevent cross-contamination between the intervention and control group. Thus, we assigned the ten university departments to one of the conditions. To create similar conditions regarding the amount and characteristics of young academics within the two groups, we based the group distribution on human resources data of the departments (i.e., the headcount, gender ratio, origin ratio, and the number of graduates in the previous year).

After the university's Ethical Review Board approved our research approach, we approached the intervention group participants in the first week of their employment by emailing them an invitation to participate in an onboarding intervention. The email entailed an explanation video regarding the intervention's content and process, a form of consent, and the baseline questionnaire (T0). In the following five consecutive weeks, participants received an email at the beginning of the week, including a description of an onboarding behavior as well as instruction on how the young academics might implement the behavior that week (Week 1: Relationship building (with colleagues and with supervisors); Week 2: Sensemaking; Week 3: Networking; Week 4: Adjusting the work to one's preferences (i.e., seeking job resources and strengths-use); Week 5: Creating reminders (See Appendix 5A for an overview of the strategies and assignments). At the end of each week, participants received an additional email with instructions to reflect on and report their engagement in this week's behavior. Moreover, we asked for their main learnings of the week and if they had further comments on their experiences. At the end of the fifth week, participants filled in the total questionnaire (T1). After three months of employment, we approached them again and asked them to complete the questionnaire again (T2). See Figure 5.1 for an overview of the research procedure.

During their first week of employment, the control group received an email with an invitation to participate in a research study. The mail entailed an explanation of the goal and process of the study (i.e., examining the experiences of young academics in the onboarding process by evaluating surveys at three points of time), a form of consent,

Figure 5.2 CONSORT flow diagram (Moher et al., 2001)

| All doctoral candidates who started working at the university between September 2020 and March 2021 | Allocation based on department | Data collection | Analyzes |

Assessed for eligibility (*n* = 312)

Allocated to intervention group (*n* = 206)
- Consent to participate in the study (*n* = 133)

Allocated to control group (*n* = 106)
- Consent to participate in the study (*n* = 71)

Provided information regarding the pre-questionnaire (T0; *n* = 110)

Provided information regarding the pre-questionnaire (T0; *n* = 66)

Analyzed (*n* = 110)

Analyzed (*n* = 66)

and the baseline questionnaire (T0). We sent the same survey to the control group after five weeks (at the same time point as the intervention group: T1). A third survey was distributed after three months of employment (same time point as the intervention group: T2). To increase control group members' motivation to participate in the research, we announced the distribution of ten vouchers to employees participating in all three surveys. Vouchers had a value of ten Euros each and were from a popular Dutch online shop. We shared the onboarding behaviors and the goal of the intervention study with the control group after the study had ended in June 2021. We encouraged the control group participants to utilize the strategies and argued that these pro-active behaviors could still improve their work experience, well-being, and productivity (Tims et al., 2016).

5.3.2 Participants

All 312 employees who started as doctoral candidates between September 2020 and March 2021 were eligible for this research. Two hundred and four employees consented to participate in our study (n=204), whereby 176 provided information on the pre-measure (T0) and were therefore included in the analyses of this study. The group that engaged in the onboarding intervention (intervention group) contained 110 participants, while the control group comprised 66 participants (for an overview of the included participants, see the CONSORT Flow Diagram, Figure 5.2). Fifty-nine percent of the employees of the intervention group were men, and 40.91% were women. The majority (37.27%) was of Dutch origin, while 26.36% stemmed from not European countries. We asked participants to report how well they knew the people in their new research group. Most (42.73%) did not know the group well, while 38.18% had a nodding acquaintance with department members, and 19.09% were familiar to a greater extent with their new colleagues.

The majority of the control group reported identifying as male (62.12%), while 36.36% identified as female, and 1.5% reported identifying differently. Participants originated mainly from Asia (37.88%), from non-Dutch European countries (27.27%), and the Netherlands (24.24%). Most (43.94%) did not know the group well, while 34.85% had a nodding acquaintance with department members, and 21.21% were familiar to a greater extent with their new colleagues. Participants in the control group had similar sociodemographic characteristics to those in the intervention group. A MANOVA revealed that the employees from the intervention group did not differ from control group participants regarding the study variables (baseline questionnaire: T0), their gender identification, origin, and the extent to which they were familiar with colleagues in their new work department. The sample size was determined as appropriate based on earlier

pro-active behavior intervention studies (e.g., Dubbelt et al., 2019; Kooij et al., 2017).

5.3.3 Measures

5.3.3.1 Onboarding Behaviors

All onboarding behaviors were measured on a five-point Likert scale, ranging from never (1) to always (5), if not indicated differently. We asked participants to indicate to which extent they engaged in one of the onboarding behaviors during the last month. Regarding the T0 measure, this time was restricted to the time they worked at the new workplace.

Relationship building. Participants reported the extent to which they engaged in relationship building with their supervisor by answering three items from the proactive socialization tactics- scale (Ashford & Black, 1996). A sample item reads: "I tried to form a good relationship with my supervisor." The scale was reliable at all three measurement points (T0: α = .80, T1: α = .82, T2: α = .86). To capture relationship building with colleagues, we adapted the three items from Ashford & Black (1996) by exchanging "supervisor" by "colleagues." Therefore, the three items read: "I tried to spend as much time as I could with colleagues," "I tried to form good relationships with colleagues," and "I worked hard to get to know my colleagues." The scale was reliable at all three measurement points (T0: α = .76, T1: α = .89, T2: α = .86).

Sensemaking. The proactive socialization tactics- scale (Ashford & Black, 1996) also provided four items to measure sensemaking behavior. Example items read, for instance: "I tried to learn the (official) organizational structure" or "I tried to learn the (unofficial) structure." We found a good scale reliability at all three measurement points (T0: α = .84, T1: α = .89, T2: α = .90).

Network crafting. Participants responded to the network crafting scale (van Gool et al., 202x) on a seven-point Likert scale, ranging from strongly disagree (1) to totally agree (7). Example items read: "I improve my network of relations with connections outside of our university to make my job more productive" or "I improve my network of relations with colleagues to make my job easier." Scale reliabilities were good at all three measurement points (T0: α = .85, T1: α = .91, T2: α = .91).

Seeking job resources. We measured six items related to the construct of seeking job resources of the general job crafting scale developed by Petrou et al. (2012). Sample items include: 'I ask my colleagues for advice.' The scale reliabilities were good at all three measurement points (T0: α = .78, T1: α = .78, T2: α = .79). Strengths-use was assessed with four items introduced by (Govindji & Linley, 2007). The scale was reliable at all

three measurement points (T0: α = .86, T1: α = .86, T2: α = .94). An example item reads: "I played to my strengths."

5.3.3.2 Outcomes

Feelings of inclusion. Participants indicated on a five-point Likert scale from totally disagree (1) to totally agree (5) their feeling of inclusion (Jansen et al., 2014). Three items (e.g., "This research group treats me as an insider") captured the feeling of belongingness (T0: α = .89, T1: α = .95, T2: α = .93). Furthermore, three items (e.g., "This research group encourages me to be who I am") captured the feeling of valued uniqueness at work (T0: α = .92, T1: α = .96, T2: α = .93).

Perceived peer support. Participants rated three items, such as "People I worked with were friendly," on a four-point Likert scale, ranging from not at all (1) to very much (4). The scale (Baruch-Feldman et al., 2002). was reliable at all three measurement points (T0: α = .70, T1: α = .70, T2: α = .73).

Perceived supervisor support. Four items from Kuvaas & Dysvik (2010) and a seven-point Likert scale ranging from totally disagree (1) to totally agree (7) measured participants' perception of supervisor support. Reliability analyses revealed that the reversed formulated item "My supervisor shows very little concern for me" caused problems for the scale reliabilities, especially at measurement points T0 and T2 (T0: α = .59, T1: α = .72, T2: α = .64). Therefore, we decided to exclude the reversed item. The remaining three items (e.g., "My supervisor really cares about my well-being") showed improved scale reliabilities at all three measurement points (T0: α = .74, T1: α = .83, T2: α = .79).

5.3.3.3 Control Variables

We measured gender, origin, and the extent to which participants were familiar with people in their new department as potential control variables. Gender was unrelated to any study variables andhus excluded from our analyses (Becker et al., 2016). We ran the analysis with and without the remaining control variables, which did not change the results.

5.3.4 Strategy of Analyses

Since the data follows a repeated-measures design with measurement points (level 1) nested within individuals (level 2), the hypotheses were tested by means of multilevel regression analyses with MLwiN 3.03 (Rasbash et al., 2019). Time was the within factor (coded as T0 = 0 (pre-measure), T1 = 1 (first post-measure), and T2 = 2 (second post-

Table 5.1 Correlations of the study variables at T0 (N=176)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Existing relationships												
2. Origin	-.14											
3. Relationship building with colleagues	.10	.03										
4. Relationship building with supervisor	.01	.25**	.39**									
5. Sensemaking	.01	.25**	.17*	.36**								
6. Network crafting	.06	.23**	.50**	.49**	.25**							
7. Job resources seeking	.23**	.17*	.59**	.55**	.26**	.59**						
8. Strengths-use	.02	.08	.27**	.32**	.26**	.40**	.51**					
9. Belongingness	.16*	.15	.26**	.28**	.03	.27**	.34**	.31**				
10. Valued uniqueness	.07	.13	.24**	.29**	.16	.20*	.38**	.25**	.73**			
11. Peer support	.09	.12	.13	.35**	.16*	.23**	.30**	.30**	.60**	.58**		
12. Supervisor support	-.04	.11	.17*	.43**	.20*	.26**	.45**	.45**	.32**	.40**	.47**	

Note. **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

Table 5.2 Correlations of the study variables at T1 (N=67)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Existing relationships												
2. Origin	-.14											
3. Relationship building with colleagues	.19	.16										
4. Relationship building with supervisor	.13	.30*	.47**									
5. Sensemaking	.19	.18	.21	.39**								
6. Network crafting	.22	.16	.58**	.30*	.35**							
7. Job resources seeking	.28*	.12	.54**	.53**	.54**	.46**						
8. Strengths-use	.35**	.11	.43**	.44**	.49**	.48**	.51**					
9. Belongingness	.21	.15	.59**	.47**	.15	.29*	.39**	.56**				
10. Valued uniqueness	.24	.20	.62**	.48**	.26*	.38**	.53**	.58**	.83**			
11. Peer support	.18	.10	.46**	.46**	.28*	.29*	.41**	.53**	.76**	.71**		
12. Supervisor support	.24	.24	.37**	.50**	.22	.24	.36**	.65**	.65**	.61**	.56**	

Note. **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

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Table 5.3 Correlations of the study variables at T2 (N=69)

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Existing relationships												
2. Origin	-.14											
3. Relationship building with colleagues	.08	.20										
4. Relationship building with supervisor	-.02	.27*	.14									
5. Sensemaking	.25*	.9	.31*	.20								
6. Network crafting	.11	.17	.56**	.23	.26*							
7. Job resources seeking	.16	.25*	.55**	.49**	.42**	.63**						
8. Strengths-use	.11	.10	.53**	.37**	.28*	.55**	.67**					
9. Belongingness	.27*	.08	.60**	.20	.20	.34**	.37**	.53**				
10. Valued uniqueness	.23	.07	.42**	.31*	.08	.31*	.51**	.65**	.81**			
11. Peer support	.23	.05	.46**	.42**	.33**	.34**	.47**	.60**	.71**	.64**		
12. Supervisor support	-.08	.18	.42**	.49**	.17	.34**	.49**	.58**	.49**	.54**	.47**	

Note. **Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed).

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Table 5.4 Means, standard deviations, multilevel regression analyses, and paired sample t-tests with Cohen's d effect sizes

Behavior/ Outcome	Group	T0 Mean	T0 SD	T1 Mean	T1 SD	T2 Mean	T2 SD	Intervention effects Estimate	SE	t-value	Paired samples t-test	t	p	d
Relationship building with colleagues	Intervention Group	3.69	0.83	3.98	0.81	3.82	0.88	0.13	0.12	1.14	T0 vs T1; N=32	-1.50	0.14	0.27
											T1 vs T2; N=34	1.68	0.11	0.30
											T0 vs T2; N=34	-0.95	0.35	0.16
	Control Group	3.66	0.77	3.52	0.78	3.54	0.828				T0 vs T1; N=30	0.48	0.64	0.09
											T1 vs T2; N=22	0.43	0.67	0.03
											T0 vs T2; N=27	0.06	0.54	0.01
Relationship building with supervisor	Intervention Group	3.75	0.83	3.99	0.77	3.98	0.87	0.05	0.09	0.52	T0 vs T1; N=32	**-2.48**	0.02	0.44
											T1 vs T2; N=26	0.60	0.56	0.12
											T0 vs T2; N=34	-1.67	0.10	0.29
	Control Group	3.75	0.72	3.84	0.71	3.94	0.67				T0 vs T1; N=31	-1.45	0.16	0.26
											T1 vs T2; N=23	-0.13	0.90	0.03
											T0 vs T2; N=29	-0.80	0.43	0.15
Sensemaking	Intervention Group	3.25	0.93	3.73	0.70	3.64	0.74	**0.29**	0.10	3.02	T0 vs T1; N=32	**-2.19**	0.04	0.39
											T1 vs T2; N=26	0.86	0.40	0.17
											T0 vs T2; N=34	-1.98	0.06	0.34
	Control Group	3.53	0.83	3.36	0.94	3.34	1.06				T0 vs T1; N=31	0.75	0.46	0.13
											T1 vs T2; N=23	0.51	0.62	0.11
											T0 vs T2; N=29	0.43	0.67	0.08
Network Crafting	Intervention Group	3.91	1.62	4.40	1.70	4.11	1.62	0.21	0.16	1.26	T0 vs T1; N=32	-1.87	0.07	0.33
											T1 vs T2; N=26	1.28	0.21	0.25
											T0 vs T2; N=32	-1.86	0.07	0.33
	Control Group	4.02	1.46	3.77	1.39	3.82	1.48				T0 vs T1; N=30	0.00	1.00	0.00
											T1 vs T2; N=20	0.79	0.44	0.18
											T0 vs T2; N=24	0.11	0.92	0.02
Job Resources Reeking	Intervention Group	3.61	0.74	3.98	0.59	3.95	0.63	0.09	0.08	1.09	T0 vs T1; N=32	**-2.25**	0.03	0.40
											T1 vs T2; N=26	0.29	0.29	0.06
											T0 vs T2; N=34	**-2.26**	0.03	0.39
	Control Group	3.64	0.68	3.72	0.65	3.78	0.63				T0 vs T1; N=30	-1.44	0.16	0.26
											T1 vs T2; N=22	-0.15	0.89	0.03
											T0 vs T2; N=27	-0.63	0.54	0.12

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Continue Table 5.4

											Comparison			
Strengths-Use	Intervention Group	5.32	0.91	5.56	0.95	5.52	1.00	0.01	0.12	0.06	To vs T1; N=32	-0.73	0.47	0.13
											T1 vs T2; N=26	0.22	0.83	0.04
											To vs T2; N=32	-0.80	0.43	0.14
	Control Group	5.23	1.17	5.14	1.02	5.31	1.25				To vs T1; N=29	-0.06	0.95	0.01
											T1 vs T2; N=20	-0.13	0.90	0.03
											To vs T2; N=23	-0.80	0.43	0.17
Belongingness	Intervention Group	4.16	0.65	4.40	0.74	4.33	0.62	0.11	0.08	1.31	To vs T1; N=32	-1.28	0.21	0.23
											T1 vs T2; N=27	-0.12	0.90	0.02
											To vs T2; N=38	-1.54	0.13	0.25
	Control Group	4.09	0.70	4.16	0.76	4.02	0.78				To vs T1; N=33	-0.74	0.46	0.13
											T1 vs T2; N=24	0.35	0.73	0.07
											To vs T2; N=30	0.50	0.62	0.09
Valued Uniqueness	Intervention group	4.11	0.75	4.42	0.71	4.25	0.61	**0.17**	0.09	2.01	To vs T1; N=32	-1.79	0.08	0.32
											T1 vs T2; N=27	1.10	0.28	0.21
											To vs T2; N=38	-1.24	0.22	0.20
	Control group	4.14	0.71	4.07	0.84	3.99	0.83				To vs T1; N=33	0.65	0.52	0.11
											T1 vs T2; N=24	0.38	0.71	0.08
											To vs T2; N=30	1.73	0.10	0.32
Peer Support	Intervention group	3.55	0.48	3.57	0.51	3.68	0.39	**0.23**	0.06	4.16	To vs T1; N=32	0.13	0.90	-0.02
											T1 vs T2; N=27	-1.84	0.08	0.35
											To vs T2; N=39	-1.39	0.17	0.22
	Control group	3.60	0.43	3.31	0.55	3.21	0.65				To vs T1; N=35	**2.38**	0.02	0.40
											T1 vs T2; N=24	0.51	0.62	0.10
											To vs T2; N=30	**2.98**	0.01	0.54
Supervisor Support	Intervention group	5.74	0.97	5.89	0.97	6.08	0.74	**0.27**	0.11	2.40	To vs T1; N=32	-0.77	0.45	0.14
											T1 vs T2; N=26	-1.36	0.19	0.27
											To vs T2; N=32	**-2.23**	0.03	0.39
	Control group	5.89	0.84	5.51	0.89	5.85	0.89				To vs T1; N=29	**3.03**	0.01	0.56
											T1 vs T2; N=20	-0.65	0.52	0.15
											To vs T2; N=23	0.96	0.35	0.20

Note. T0: Intervention group (N=110) and control group (N=66); T1: Intervention group (N=32) and control group (N=35); T2: Intervention group (N=39) and control group (N=30); While estimating the intervention effect, we controlled for their origin and the degree to which a newcomer had existing relationships with the new colleagues

measure), and a unique individual participation number represented the between factors. Compared with the more conventional repeated measures ANOVA, multi-level analyses are less likely concerned with sphericity or homoscedasticity violations because the variance is correctly distributed to the different levels of analysis. Therefore, predicted effects are more precise, and Type 1 error rates are diminished (Quené & Van Den Bergh, 2004; Snijders & Bosker, 2003). During the analyses, we left dummy-coded covariates uncentered and grand mean-centered the mediating variables (i.e., onboarding behaviors).

We followed three steps (Mathieu & Taylor, 2006) to test for indirect effects regarding Hypothesis 4. First, the interaction of time*group membership (control group = 0 and intervention = 1) needs to relate significantly to the mediators (i.e., onboarding behaviors). Second, while controlling for the interaction effect of time*group, the mediators need to relate to the outcome variables. Finally, the last step involves a significance check of the indirect effects using the Monte Carlo method for assessing mediation (MCMAM; Selig & Preacher, 2008). In addition, to gain additional insights into the effects of the intervention, we conducted the Paired-Samples T-Test for the control and intervention groups separately.

5.4 RESULTS

Tables 5.1 to 5.3 display the variables' correlations at T0, T1, and T2. Table 5.4 shows the statistical analyses' means, standard deviations, and results.

5.4.1 Test of Hypotheses

Hypothesis 1 suggested the effectiveness of the intervention on participants' engagement in onboarding behaviors. The results of the multilevel regression analyses showed that participants in the intervention group reported a significant increase in sensemaking behavior compared to the control group (Week 2: estimate = .293, z = 3.021, p = .001). This finding supports Hypothesis 1c. The intervention group did not report higher levels of the other onboarding behaviors across time compared to the control group (H1a: Relationship building with colleagues: estimate = .133, z = 1.137, p = .128; H1b: Relationship building with supervisor: estimate = .045, z = .517, p = .303; H1d: Network crafting: estimate = .206, z = 1.256, p = .105; H1e: Seeking job resources: estimate = .088, z = 1.086, p = .139; or H1f: Strengths-use: estimate = .007, z = .058, p = .477).

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Table 5.5 Multilevel regression results testing the mediation of sensemaking on the outcome variables.

Variables	Belongingness			Valued Uniqueness			Peer Support			Supervisor Support		
	Est.	SE	t	Est.	SE	t	Est.	SE	t	Est.	SE	t
Constant	**3.88**	0.16	23.82	**4.04**	0.18	22.67	**3.66**	0.116	31.54	**5.61**	0.23	24.08
Existing Relationships												
Know them well	**0.39**	0.15	2.64	0.31	0.17	1.83	0.15	0.11	1.32	0.32	0.21	1.50
Origin												
North America	**0.62**	0.31	2.01	0.63	0.36	1.73	0.17	0.24	0.71	**1.365**	0.43	3.16
South America	0.39	0.21	1.85	0.23	0.24	0.93	0.33	0.16	2.09	0.220	0.31	0.71
Group	0.02	0.16	0.11	-0.06	0.17	-0.35	**-0.23**	0.11	-2.07	-0.216	0.23	-0.96
Time	-0.03	0.06	-0.43	-0.08	0.07	-1.20	**-0.18**	0.04	-4.17	-0.090	0.08	-1.07
Group x Time	0.11	0.08	1.31	0.13	0.09	1.44	0.22	0.06	3.72	0.232	0.11	2.07
Sensemaking	0.03	0.05	0.70	**0.10**	0.05	1.96	**0.07**	0.03	2.03	0.124	0.06	1.94
Random Part												
Level: ID												
Var(Constant)	0.16	0.04		0.32	0.16		0.07	0.07		0.30	0.07	
Var(Time)	0.00	0.00		0.03	0.03		≤0.01	0.02		0.00	0.00	
Level: Time												
Var(Constant)	0.26	0.03		0.23	0.04		0.12	0.02		0.42	0.05	
Units: ID	161			161			161			143		
Units: Time	287			287			287			260		
Estimation:	IGLS			IGLS			IGLS			IGLS		
-2*loglikelihood:	541.27			579.42			347.39			626.09		

Notes. Existing relationships: Ref. Category= Do not know them well; Origin: Ref. Category= Dutch; Group: Group: 0= Control, 1= Intervention, Ref. Category= Control; Time: 0= T0, 1=T1, 2=T2; Non-reference categories of the control groups that provided insignificant estimates are left out; Significant estimates are marked bold: $1.96 < t < 2.6 = p<.05$, $2.6 < t < 3.3 = p<.01$, $t > 3.3 = p<.001$

To test Hypotheses 2 and 3, we analyzed the impact of the intervention on participants' feelings of belonging (H2a) and valued uniqueness (H2b), as well as their perceptions of support provided by colleagues (H3a) and supervisors (H3b). Participants of the intervention and control group did not differ regarding their levels of experienced belongingness (H2a: estimate = .107, z = 1.305, p = .096). However, we did detect an intervention effect on feelings of valued uniqueness whereby participants of the intervention group reported an increase, and the control group participants experienced a decrease in valued uniqueness (H2b: estimate = .171, z = 2.012, p = .022). The intervention similarly affected perceptions of peer support (H3a: estimate = .229, z = 4.165, p ≤ .001). Finally, the intervention increased perceptions of supervisor support in the intervention group over time compared to the control group (H3b: estimate = .266, z = 2.418, p = .008). These findings provide support for Hypotheses 2b, 3a, and 3b.

We performed Paired-Samples T-Tests to gain more insight regarding the changes across time and between groups. We compared the pre- and post-measures (T0-T1, T1-T2, and T0-T2) separately for the intervention and control groups (see Table 5.4). The control group did not show significant increases in the study variables over time. Nevertheless, the control group showed significant decreases in perceived peer support and perceived supervisor support levels between T0 and T1 (i.e., short-term effect) and significant decreases in perceptions of peer support between T0 and T2 (i.e., medium-term effect). The intervention group showed an increase in relationship building with supervisors (T0-T1), sensemaking (T0-T1), seeking job resources (T0-T1 and T0-T2), and perceived supervisor support (T0-T2). Overall, the changes dominantly occurred right after the intervention (i.e., after five weeks) between T0 and T1

Hypothesis 4 hypothesized that the onboarding intervention will relate to an increase in onboarding behaviors (i.e., [H4.1] relationship building with colleagues, [H4.2] relationship building with supervisors, [H4.3] sensemaking, [H4.4] networking, [H4.5] seeking job resources, and [H4.6] strengths-use behavior) over time, which will relate positively to changes in (a) feelings of belongingness, (b) feelings of valued uniqueness, (c) perceived supervisor support, and (d) perceived peer support. We tested the indirect effect by examining whether the three conditions stated by Mathieu and Taylor (2006) hold. First, the interaction of time * group must relate significantly to the proposed mediator (i.e., engagement in onboarding behaviors). As reported above, the interaction was only significantly related to sensemaking. Thus, we tested the hypothesized indirect effect for sensemaking solely. The results for Step 2 (i.e., sensemaking must relate to the outcome variables while controlling for the main effects of time, group, and their interaction effect) are presented in Table 5.5. Sensemaking did relate positively to feeling valued for uniqueness (estimate = .100, z = 1.96, p = .049) and perceived peer

support (estimate = .069, z = 2.029, p = .043). Sensemaking did not relate significantly to feelings of belongingness (estimate = .033, z = .702, p = .482) or perceived supervisor support (estimate = .124, z = 1.938, p = .053). Regarding Step 3, which investigated the significance of the indirect effect, the MCMAM supported the positive and indirect effects of the time*group interaction on feeling valued for uniqueness (LL = .0001, UL = .072) and perceived peer support (LL = .0003, UL = .048) through sensemaking. We thus confirm Hypotheses 4.3b and 4.3c.

5.5 DISCUSSION

5.5.1 Theoretical Implications

The current study tested a newcomer-centric onboarding intervention for young researchers in a STEM university. During the onboarding intervention, we introduced four proactive behaviors through which newcomers sought resources and evaluated if the intervention improved the newcomers' experience of social integration. The intervention successfully increased the outcome variables, as intervention participants experienced improved levels of valued uniqueness and social support from peers and their supervisors. Moreover, the intervention also increased participants' sensemaking behavior, which partially explained the increase in participants' experience of valued uniqueness and peer support. Action planning, behavioral practicing, and self-reflection were potential active elements that stimulated the sensemaking behavior of young academic newcomers.

Our first theoretical implication concerns the active role of employees in inclusion management. Newcomers participating in the onboarding intervention reported improved feelings of valued uniqueness and perceived social support during their onboarding process compared to the control group. In this respect, our findings extend the current literature by showing that, in addition to organizations and leaders, employees themselves can play a role in shaping their social integration at work (Shore et al., 2018). Our findings confirm our assumption that inclusion is a reciprocating process and that (stimulated) proactivity of employees plays a crucial role in effective inclusion management. If employees are enabled to engage in onboarding behaviors, they perceive their supervisors and colleagues as more supportive, and they feel that they can be their authentic selves. This implies that employees' behavior may represent a relatively overlooked antecedent of their own inclusion experience and that employees need to be integrated as active actors in organizational inclusion management (Nishii & Leroy,

2022; Shore et al., 2018).

Furthermore, we are one of the first studies that examine the impact of antecedents on the two sub-dimensions of inclusion separately. Rather than contributing to feelings of inclusion as a whole, the training only affected one sub-dimension of inclusion: valued uniqueness. Although the intervention increased employees' perceptions of support by the supervisor and peers, and this social support also displays a sense of connection (Smallwood & Allen, 2020), the impact of the intervention on feelings of belongingness was insignificant. In their inclusion framework, Shore and her colleagues (2011) conceptualized non-favorable situations in which employees are seen for their unique contribution to the organization but are not treated as organizational insiders as differentiation. However, differentiation most likely did not occur in our sample as participants showed remarkably high –and stable- levels of belongingness throughout the intervention period. Notwithstanding, when feelings of valued uniqueness and belongingness are imbalanced, organizations need to handle differentiation and its consequences for employees (e.g., loneliness). We detected a slight increase in valued uniqueness among the intervention participants and a decrease in valued uniqueness among control group participants. Thus, since our intervention group reported moderately high levels of belongingness, one can argue that the intervention enabled participants to feel more included by safeguarding their sense of valued uniqueness. In this regard, the intervention prevented assimilation (i.e., high belongingness and low valued uniqueness: Shore et al., 2018) of the newcomers to the general organizational identity. The intervention allowed newcomers to create their individual identities and contribute their personal backgrounds and needs to their new workplace (Cable et al., 2013; Shore et al., 2018).

Another possible explanation for why the intervention triggered solely feelings of valued uniqueness might be that to experience belongingness, newcomers need to feel a strong group membership based on recurrent positive interactions within a group (Baumeister & Leary, 1995). Likely, our intervention did not stimulate this experience appropriately. On the one hand, the COVID-19 restrictions at the time of the intervention limited in-person work and, thus, face-to-face interactions with colleagues. On the other hand, the studied period might not have been long enough for frequent, affectively pleasant interactions to strengthen the group membership. Additionally, the exercises stimulated the newcomers' distinctive selves by encouraging them to express their needs and adjust their tasks to their personal preferences. This self-expression likely relates to the concept of being seen as an individual with unique characteristics and does not necessarily strengthens one's experience of group membership (Shore et al., 2018). In addition, the unique situation of starting a new job connects to increased uncertainty,

whereby the knowledge deficit might lead newcomers to focus on information exchange rather than creating deeper bonds in social interactions with new colleagues (Ellis et al., 2015).

As a second theoretical implication, this research uncovers the impact of concrete resource-seeking behaviors and to what extent they are trainable. In doing so, we respond to previous socialization research, which has pointed out that proactive behavior is powerful for effective onboarding (Tianyan et al., 2018) but that a newcomer-centric view on onboarding interventions is missing (Bauer et al., 2021). Our results show that a self-training intervention can stimulate newcomers' sensemaking behavior. Furthermore, sensemaking appeared to be the mechanism through which newcomers felt more valued for their individual contributions and their colleagues' support. We performed additional analyses (i.e., Paired-samples t-tests) to examine the impact of the intervention on newcomers' behavior in more detail. The intervention group, but not the control group, showed increased relationship building with the supervisor and seeking job resources immediately after the intervention period. The intervention group also sought more job resources after three months in the organization. The long-term effects of seeking job resources align with existing job-crafting interventions in the STEM sector (Dubbelt et al., 2019). Moreover, our quantitative evidence complements existing qualitative work (Harris et al., 2020; Mornata & Cassar, 2018).

In addition, newcomers in the control group but not in the intervention group showed a significant decrease in perceived social support from peers and supervisors. These results indicate that the absence of onboarding interventions that encourage interactions and knowledge exchange between newcomers and existing staff potentially leads to a lack of perceived social support. These results extend the existing socialization literature by providing insights into how individual behavior, rather than organizational initiatives, contributes to perceptions of social support (Allen & Rhoades, 2013; Ellis et al., 2015).

A final theoretical implication adds to organizational intervention literature. We inform current research by providing quantifiable results about which proactive strategies contribute to more felt inclusion and social support. In this regard, we extend the limited and inconclusive existing onboarding interventions studies (Cable et al., 2013; Frögéli et al., 2023; Mobasseri et al., 2021) examined how interventions during the onboarding of new employees can stimulate social integration. Our findings imply that action planning, behavioral practicing, and self-reflection might be active elements that promote sensemaking behavior of young academics in their new work environment. Sensemaking behavior further improved newcomers' feeling of valued uniqueness and their perception of peer support. Instead of starting with a narrative of others' experiences, our intervention immediately emphasized the newcomers' needs (i.e.,

social, job, and personal resources) and their fit with the new job. Thereby, the exercises during the intervention stimulated newcomers to evaluate what they need to succeed in integrating into the new work context rather than signaling values of inclusion through training materials (Mobasseri et al., 2021). Lastly, our training design accompanied newcomers during the first weeks of their employment. It encouraged employees to integrate the behaviors into their daily work, which appears to be a promising approach to stimulating behavioral change (Frögéli et al., 2023). We provide an integrative approach to train proactive onboarding behaviors, whereby the learning is integrated into one's actual work instead of presented in separate sessions.

5.5.2 Practical Implications

This research provides valuable recommendations for STEM universities and the onboarding of young academics. First, the intervention displays a cost-effective and time-efficient approach to encourage doctoral candidates to engage in proactive behaviors and express their needs in social interactions. The presented intervention allows room for self-expression and can be offered to newcomers as an e-learning tool to prevent assimilation into the traditional organizational "ways of working." In this way, by reducing newcomers' suppression of their identity, the intervention displays a potential bottom-up approach that, next to organizational top-down inclusion practices, facilitates newcomers' inclusion experiences.

Furthermore, by implementing the onboarding intervention, STEM universities can stimulate newcomers' feelings of inclusion and social support in the new workplace. Particularly, engaging in sensemaking behavior during the onboarding lead to improved feelings of valued uniqueness and perceived social peer support. Universities can foster sensemaking by providing organizational information about processes, strategies, and projects. Nevertheless, our research showed that self-expression was essential for positive outcomes. Thus, while providing organizational information, universities may still want newcomers to voice their needs and personal preferences. Therefore, organizational information could encourage newcomers to relate their projects to the organizational strategy or think about links with their work and running projects within the research group.

5.5.3 Limitations and Future Research

Despite the value of the research findings, some limitations must be named. First, the analyses are solely based on self-reports risking a common method bias (Podsakoff et al., 2003). However, a statistical test comparing the hypothesized factor structure (i.e., ten-factor model) with a two-factor model (grouping proximal and distal outcomes of the intervention) and a one-factor model showed poorer model fit indices.[1] Furthermore, since we were interested in subjective perceptions of the work environment (i.e., feelings of inclusion and social support), the self-measures were appropriate for these constructs to gain this type of information. Nevertheless, observing some constructs (e.g., the behaviors of the newcomers) through other raters would have been valuable. For instance, colleagues and leaders can be asked to rate newcomers' proactive behaviors. Additionally, examining if proactive onboarding behaviors lead to a collective inclusion experience is insightful. Notwithstanding, we do not expect common method biases to be a crucial problem in our data set. The variables were generally not highly correlated, and there were no likely hidden mediation effects, which similar change patterns would have indicated in the intervention and control group (Holman et al., 2010).

Second, we cannot conclude the long-term effects of the onboarding intervention. We choose the time point of our second post-measure (i.e., after about 90 days of employment) in line with other socialization research (Frögéli et al., 2023). However, building relationships and networks or finding one's spot in a new organization might take longer than three months, and specifically, feelings of belongingness might develop over time (Shore et al., 2018). Thus, future research should evaluate the long-term effectiveness of onboarding interventions.

A third limitation relates to our sample. Since our sample intentionally focused on doctoral candidates, the findings may not be generalizable to other occupations or senior staff within STEM universitie\s. Moreover, although our initial response rate was more than half of the eligible participants, considerably fewer participants provided answers to our T1 and T2 survey.[2] Dropout represents a common limitation of online interventions

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[1] A confirmatory factor analysis revealed that the fit of the proposed ten-factor model was significantly better in comparison to the two-factor model ($\Delta\chi^2$= 822.85, Δdf= 44, p<.01), and the one-factor model ($\Delta\chi^2$= 1365.83, Δdf= 45, p<.01). Additionally, the ten-factor model showed an adequate fit (2[549] = 898.83, p<.01; root mean square error of approximation = .06; comparative fit index = .88), and all relationships between factors and items were significant, suggesting an appropriate model (Hu & Bentler, 1999).

(Demerouti, 2023) and requires careful interpretation of the results. Although the statistical software we used dealt with the missing values (Rasbash et al., 2019), future research needs to replicate our findings in various samples and contexts.

Finally, we introduced the intervention during the Covid-19 outbreak (i.e., between September 2020 and March 2021). National regulations and a working-from-home policy marked this period, which likely restricted the extent to which young academics could engage in the assignments. Participants in the Intervention group reported that they never (37.31%) or occasionally worked in the office one or two days per week (35.82%). Only 26.87% reported that during the intervention, they regularly spent three days or more at the campus (only specific laboratory work was permitted during the lockdown). This hindrance to face-to-face social interaction might have restricted their engagement in onboarding behaviors. Indeed, participants indicated during their self-reflection on the assignments that working from home hindered them from approaching colleagues and finding information. The findings of this research thus offer a first indication, and a relatively conservative test, of how an onboarding self-training can stimulate newcomers' perception of social support and feelings of inclusion through engagement in proactive onboarding behaviors. Still, future research could further examine effective strategies for newcomers starting in remote or on-campus teams.

5.6 CONCLUSION

This research offers evidence-based insights into how an onboarding intervention can improve newcomers' perceptions of social support and feelings of belongingness and valued uniqueness. The online self-training, which was designed based on socialization resources theory (Saks & Gruman, 2012) and the concept of self-regulation of learning (Zimmerman & Labuhn, 2012), encouraged newcomers to engage in proactive onboarding behaviors (i.e., relationship building, sensemaking, network crafting, job resource seeking, and strengths-use), which potentially provided social, job, and personal resources to the newcomer. The intervention successfully raised newcomers' feelings of valued uniqueness, perceived peer support, and perceived supervisor support. It also increased sensemaking behavior, which boosted valued uniqueness and perceived peer support.

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[2] Eligible were all 312 doctorate candidates that started between September 2020 and March 2021. 176 (i.e., 56.41%) participants filled in the baseline questionnaire. Considerably fewer participants of the total population provided answers to our T1 (i.e., 21.47%) and T2 (i.e., 22.12%) survey.

This study is valuable because it provides a newcomer-centric approach rather than a uniform organizational approach to onboarding. Furthermore, our findings uncover that sensemaking as a resource-seeking behavior is trainable through behavioral change techniques (i.e., action planning, behavioral practicing, and self-reflection). In addition, sensemaking benefits newcomers' adjustment to the new workplace. If allowed to self-express their personal needs and develop unique work identities, we show that newcomers do not assimilate to existing values and behaviors, which is essential for inclusive onboarding (Shore et al., 2018). Thus, next to top-down initiatives, which foster inclusion in the organization, this onboarding intervention displays a helpful way to encourage bottom-up employee behavior that additionally leads to improved social integration. Overall, our findings are beneficial to prevent young academics' identity suppression and, thus, improve their health, performance, and retention (Walton & Cohen, 2007; Williams, 2007).

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APPENDICES

Appendix 5A.

Table 5.6 Behavioral change techniques during the self-regulated learning phases

Phases	Intervention aspects that reflect self-regulated learning	Behavioral change techniques (Michie et al., 2013)
1. Forethought		
a. Task analyses	Instructions to **set goals** Instructions to create a **strategic plan** of when and how to engage in the proposed onboarding behavior	Goal setting Action planning
b. Self-motivation	Creating clear **outcome expectations** by describing the positive consequences of the onboarding behavior (i.e., seeking resources that support the social integration) Increase participants' **self-efficacy** to accomplish the assignment by breaking down complex tasks or providing clear examples Providing room for self-actualization to increase **task interest/value** Triggering participants to follow their **personal goal orientation** by instructing them to customize one's onboarding experience and thus engage in the assignments based on what motivates the individual participants to engage in the onboarding behavior	Salience of consequences Social and environmental consequences Social reward Instruction on how to perform a behavior
2. Performance		
a. Self-control	Empower employees to **self-instruct** Empower employees to execute their **task strategy** Empower participants to **structure their environment** Empower participants to **seek help**	Behavioral rehearsal/practice
b. Self-observation	Participants monitor their performance and learning through **self-observation**	Self-monitoring of outcomes of behavior Self-monitoring of behavior
3. Self-reflection		
a. Self-judgment	Instructions to **self-evaluate** performance and learning	Review behavior goal(s)
b. Self-reaction	Participants respond with a **satisfactory or affective reaction** Instructions to create cues to maximize the **adaptation of the behavior**	Self-affirmation Prompts/cues

Note. Phases are formulated in line with the cyclical model of self-regulated learning (Zimmerman, 2012).

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Appendix 5B.

Table 5.7 Overview of the onboarding behaviors and the weekly assignments

Week	Proactive Behavior	Assignment
1	Relationship Building	This week, approach some of your colleagues and/or your supervisor. Ask questions in order to get to know them better. Also, introduce yourself. Talk for example about your previous work experiences, what awaits you at the university, what you like to do in your leisure time, or additional information you feel comfortable sharing. See examples of questions you could ask below: (e.g., "When did you start working here?", "What is your research about?", "Which courses do you teach?")
2	Sensemaking through Seeking Information	To make more sense of your new work environment, please think about information you need to accomplish your work. Information can be related to specific colleagues or your supervisor (e.g., their expectations) or they can be related to official or informal rules that are generally applied in your group (or at the university). This week, approach your colleagues and/or supervisor and ask questions in order to get a better understanding of your new workplace and gain a thorough impression of the working conditions, rituals, processes, and people. See examples of questions you could ask below: (e.g., "When are your home-office days?", "How does the course evaluation tool work?", "Is there any support for research funding?", "Are there informal rituals in our group, for example, related to lunch breaks, etc.?"
3	Network Crafting	To expand your network and to learn which people are important for your work, please do the following: 1. Write down the names of people from outside of your research group that you think are/will be valuable for your work. These people could be valuable because they can provide you with feedback on your work, provide expertise that is valuable for your work, or you can use her/his influence to help you in your job, etc. 2. Select one of the persons you have listed. Schedule a meeting this week or stop by that person's desk to introduce yourself. Exchange your research and teaching experiences and interests, share your first impressions of the university, find similarities of research interests, or elaborate on how this person will contribute to your work at the university.

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Continue Table 5.7

4	Adjusting One's Work Situation through Seeking Job Resources and Strengths-Use	Job crafting means to make (little) adjustments to your work environment. There are multiple ways to do so and it dependents on the type of job, your work relations, and your own personal preferences. Important is that the way you change your work tasks helps you to find your work more meaningful. Another important thing is that the adjustments that you make do not have to be big changes, they can also be really small.

Please follow the subsequent 5 steps to develop your own job crafting action for this week.

Step 1. Identify a relevant work task: First, identify one relevant work task that you are or will be engaged in this week (e.g., creating a literature review of the research topic). My relevant work task is:

Step 2. Identify your work demands: Next, identify what this task requires you to do. These requirements are called "demands". Job demands are aspects of your work that require your energy (e.g., identify key authors in your research area). Related to the task you indicated above, please name 1 relevant job demand that you want to focus on this week?

Step 3. Identify work-related resources: In the following, please think about aspects that help you to cope with your demand. These aspects we call "resources". Concrete examples of work-related resources for your situation could be: An example literature overview created by another doctoral candidate, advice from other doctoral candidates on your education plan, or feedback from your supervisor. Please name 1 work-related resource that is especially important for you in order to deal with the demand that you chose to focus on this week:

Step 4. Identify personal strengths and interests: Next to the work-related resources, also your strengths and interests can help you to accomplish your work. Strengths and interests are aspects that you are especially good in and/or that you enjoy engaging in. These aspects most likely provide you with a mean to do your tasks in an optimized and more efficient way and they motivate you to invest your energy and time to accomplish a task. Concrete examples of strengths and interests and how you use them for your benefit could be: previous experiences (e.g., from your masters or a (writing) course that can help you with writing the research proposal). Please name 1 strength or interest that can help you with dealing with the demand that you chose to focus on this week:

Step 5. Identify job crafting action: Assignment for this week: Be as precise as possible and identify 2 concrete actions that you want to undertake this week (acquiring and using 1 work related resource and 1 of your strengths/interests to accomplish the task that you identified above).

This is how I will acquire or use the work-related resource this week:

This is how I will acquire or use my strengths/interests this week:

5	Creating Reminders	In this last week, we want to introduce a great way to remind yourself to keep practicing the introduced strategies. You can create personal reminders to engage in certain behaviors (e.g., A cross on your hand, a picture on your desktop, a phrase on a cup). Please think about 1 concrete reminder for each behavior, so you will be reminded of 1. Sense making; Seeking information and feedback from colleagues and your supervisor to make your tasks and the work processes more clear; 2. Networking & Relationship building: Connecting with people who are valuable for your work; 3. Creating a situation at work that suits you.

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Examining a Radical Gender Equality Policy

"The radical gender-equality policy increased female applicants' intention to apply to an academic position at the university because they sensed that the university is female-friendly and takes gender equality seriously. Open dialogues and transparent procedures are necessary to address peoples' prejudices that radical approaches may compromise quality standards."

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Behnke, J., Rispens, S. & Demerouti, E. We need more women now! Examining a radical gender equality policy at a STEM university.

ABSTRACT

This study contributes to understanding the process of change toward gender equality in academia, examining the implementation of a radical gender equality policy, an intervention that has been both criticized and praised for its ability to bring about change. Drawing upon an empirical case study at a Dutch STEM university, we offer a theoretical framework originated in strategic human resource management to explore the implementation process leading from the intended policy to the actual policy to the perceived policy. Moreover, we seek to understand how societal, organizational, and individual factors impact this process and, thus, the objective and subjective consequences of the implementation. Our findings show that the radical policy attracted more female talent and raised awareness of gender issues. Furthermore, negative assumptions about radical approaches were hindered, while leadership commitment boosted the implementation. These conditions should be considered when implementing similar policies in academia.

Keywords: Academia, STEM, gender equality, radical policy, recruitment, organizational change, top-down implementation

6

6.1 INTRODUCTION

Women in STEM (science, technology, engineering, and mathematics) face significant underrepresentation and more discrimination than their male counterparts (VNSU, 2020). In an international context, the Dutch higher education sector ranks among the lowest in terms of the proportion of female academics(European Commission, 2021). To address the adverse effects of underrepresentation, universities strive for gender equality (GE), which entails ensuring equal rights, responsibilities, and opportunities for both women and men (European Commission, 2023). Past research has shown that the underrepresentation of women is unrelated to a lack of skills or ambitions but a result of human and organizational gender biases and discriminatory organizational processes (Faniko et al., 2022). For instance, the attributes and expectations associated with the "ideal academic" often align more with male characteristics, perpetuating women's underrepresentation in academia (Maatta & Lyckhage, 2011). Thus, individual biases during the recruitment process often lead to favoritism of male over female candidates (Van den Brink et al., 2006). Consequently, universities can significantly benefit from implementing policies and practices that actively address and mitigate individual and organizational biases, thereby promoting GE (Roos et al., 2020).

In academia, radical approaches have been considered promising for achieving greater GE because they involve explicit actions and hold stakeholders accountable (Roos et al., 2020). However, they are also associated with various negative assumptions (Benschop & Verloo, 2011), such as concerns that quotas may compromise quality standards, that women hired through quotas may be stigmatized, and that male candidates may face disadvantages, leading to perceptions of unfairness. Conclusively, the effectiveness of radical GE policies remains a topic of intense debate, and comprehensive evaluations are still lacking (Benschop & van den Brink, 2014).

The evaluations of radical GE policies and their potential to contribute to GE in STEM stay vague. The implementation of radical GE policies in STEM universities has been limited, challenging the development of clear guidelines on how to facilitate the organizational change toward GE. There is a pressing need for a guiding theoretical framework to inform research on the implementation dynamics of the radical approaches (Gender Action, 2020). Additionally, both quantitative and qualitative data, along with appropriate evaluation tools, are essential for comprehensively analyzing the complex dynamics among interventions, stakeholders, and the outcomes of GE interventions (Kalpazidou Schmidt & Cacace, 2017). The lack of insights into the implementation process and the effects of radical GE policies in STEM universities significantly hinders progress in this field. Without a deeper understanding of these aspects, advancing and

fostering meaningful change toward GE in STEM universities is not possible.

To address the existing research gap, we conduct an empirical case study within a Dutch STEM university that implemented a radical GE policy intending to increase the representation of female academics. Grounded in the strategic human resource management (SHRM) process model (Wright & Nishii, 2008), our study explores the dynamics of the policy implementation process and its consequences for organizational change towards GE, including both objective and subjective outcomes. Moreover, our research provides a comprehensive analysis by collecting quantitative and qualitative data on various factors that influence the implementation process at the macro- (i.e., societal beliefs and national legislations), meso- (i.e., organizational decision-making and leadership commitment), and micro-level (i.e., individual beliefs regarding GE and the radical approach). We examine the consequences that facilitate organizational change towards GE, containing objective organizational outcomes, such as the number of female applicants and hires, and subjective outcomes, such as individual perceptions of gender awareness, a change in gender balance, and the change toward more equality for women and men (Kalpazidou Schmidt & Graversen, 2020). Therefore, we aim to answer the following research questions: How do macro- (i.e., societal beliefs and national legislation), meso- (i.e., organizational decision-making and leadership commitment), and micro- (i.e., individual beliefs about a radical approach to GE) level factors promote or hinder a radical GE policy implementation? (2) How does a radical GE policy contribute to the desired cultural change regarding GE (indicated by objective and subjective consequences)?

Our research makes several contributions to existing literature. By adopting the SHRM process model, our study offers valuable insights into the mechanisms through which cultural change towards GE can occur within organizations. We contribute to the GE literature by highlighting the significance of the actual GE policy (reflected in the implementation by the department chairs) and the perceived GE policy (captured through the perceptions of employed women and hiring professors) as explanatory factors for achieving more GE. Moreover, our study extends the existing research on strategic HRM by moving beyond examining motivational outcomes (e.g., work engagement and satisfaction) and delving into the implementation dynamics of a radical GE policy (Van Beurden et al., 2021). Furthermore, we contribute to HRM implementation research by empirically uncovering the potential impact of macro, meso, and micro-level aspects on the implementation of a radical GE policy. Line managers' resistance has been identified as a key obstacle to successful policy implementation (Benschop & van den Brink, 2018). In the context of radical GE policies in academia, we shed light on the impact of additional individual, organizational, and societal aspects. Taking a systemic approach, we evaluate

how different components of the overall system (e.g., societal beliefs, organizational structures, and individual motivations) interact and affect the implementation of GE policies (Molineux, 2013). Finally, our study contributes to the GE literature by providing empirical evidence beyond conceptual research and examining the subjective and objective outcomes of GE policy implementation (Kalpazidou Schmidt & Graversen, 2020). While the scarce previous empirical studies on the impact of GE interventions have focused on simple indicators such as women in STEM, women in leadership positions, or gender dimensions in research and education, we provide a more holistic evaluation of the GE policy's objective and subjective consequences, as advocated by scholars in the field (Kalpazidou Schmidt & Cacace, 2017). Figure 6.1 visually represents the constructs considered in our research and their proposed relationships.
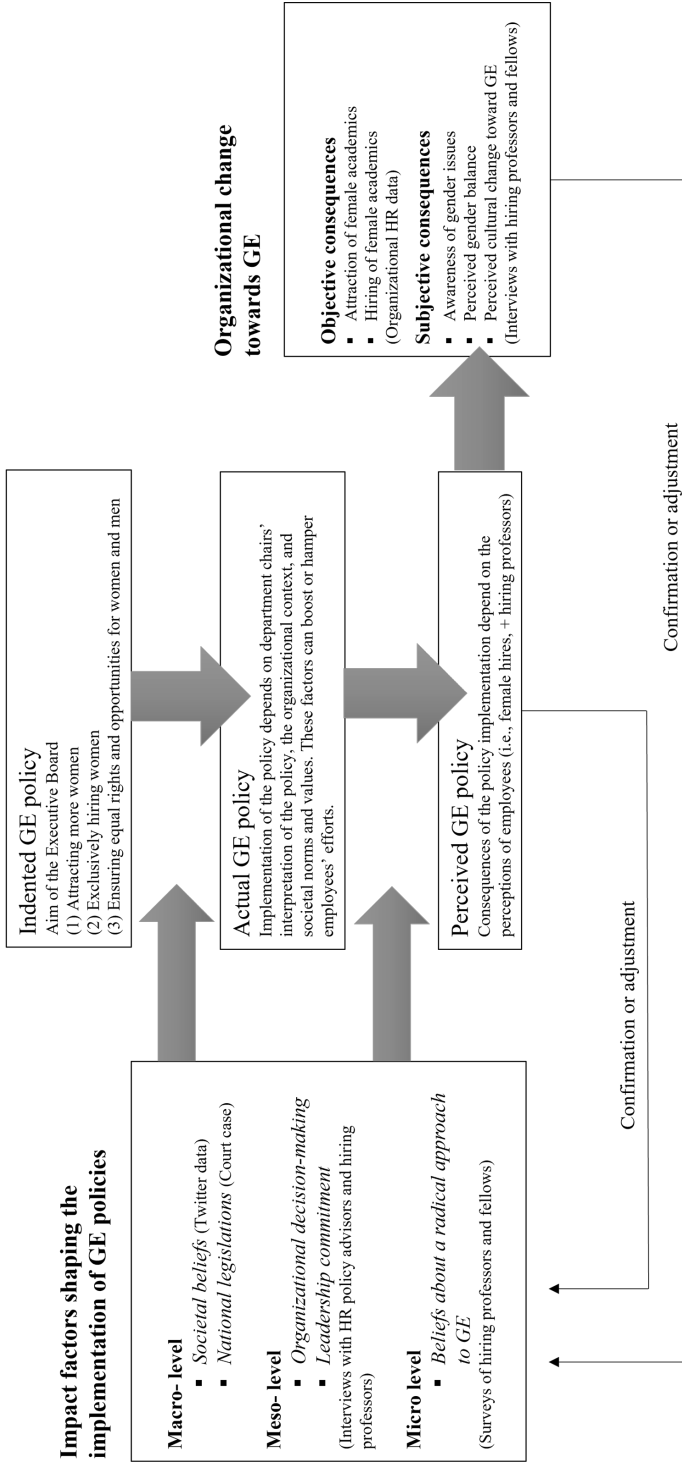
6.2 THEORETICAL BACKGROUND

6.2.1 Radical Interventions to Reach Gender Equality

Jewson and Mason (1986) distinguished between liberal and radical equality policies, leading research to differentiate between individual and structural strategies for promoting gender equality in the workplace (Benschop & Verloo, 2011). Individual strategies, rooted in the principles of liberal equality, aim to ensure fair treatment for all but often reinforce stereotypes and fail to address systemic disadvantages women face (Benschop & Verloo, 2011). Overall, research has yielded inconsistent or no effects of individual strategies on workforce diversity or change regarding gender equality (Dobbin & Kalev, 2016). Therefore, scholars and policymakers point out that structural approaches, which aim to change organizational processes, are more successful in creating GE (Benschop & van den Brink, 2014). Structural approaches acknowledge organizational structures as the root cause of gender inequality (Benschop & Verloo, 2011). They aim to reshape organizational procedures to prevent discriminatory practices in recruitment, promotion, and evaluation. Research distinguishes transformational and radical strategies (Benschop & Verloo, 2011). Transformational strategies involve substantial changes to power relationships and structures, such as collaborative leadership and increased staff participation in decision-making, aiming for systemic transformation. Radical strategies, on the other hand, involve temporary measures, such as quotas or special programs, to address underrepresentation to balance the gender

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Figure 6.1 Theoretical framework regarding the process of a radical policy implementation toward gender equality

Impact factors shaping the implementation of GE policies

Macro- level
- *Societal beliefs* (Twitter data)
- *National legislations* (Court case)

Meso- level
- *Organizational decision-making*
- *Leadership commitment*

(Interviews with HR policy advisors and hiring professors)

Micro level
- *Beliefs about a radical approach to GE*

(Surveys of hiring professors and fellows)

Indented GE policy
Aim of the Executive Board
(1) Attracting more women
(2) Exclusively hiring women
(3) Ensuring equal rights and opportunities for women and men

Actual GE policy
Implementation of the policy depends on department chairs' interpretation of the policy, the organizational context, and societal norms and values. These factors can boost or hamper employees' efforts.

Perceived GE policy
Consequences of the policy implementation depend on the perceptions of employees (i.e., female hires, + hiring professors)

Organizational change towards GE

Objective consequences
- Attraction of female academics
- Hiring of female academics

(Organizational HR data)

Subjective consequences
- Awareness of gender issues
- Perceived gender balance
- Perceived cultural change toward GE

(Interviews with hiring professors and fellows)

Confirmation or adjustment

Confirmation or adjustment

ratio (Gender Action, 2020). Organizations implementing these measures formulate strict objectives for either preferential treatment in organizational processes in the form of quotas (e.g., reaching a 30 percent share of female researchers) or special programs for underrepresented groups (e.g., mentoring programs with specific funding lines for female researchers).

The effectiveness of radical strategies is debated (Benschop & Verloo, 2011; Lansu, 2019; Lewis et al., 2017). Some argue that exclusive interventions targeting specific minority groups may be perceived as unfair and generate resistance and negative stereotypes (Benschop & van den Brink, 2018). In addition, inclusive approaches have shown greater success in improving employee satisfaction and performance (Ryan & Kossek, 2008). However, radical strategies are well accepted as a necessary step toward GE (European Commission, 2023). Explicitly, quotas have demonstrated short- to medium-term success in increasing female representation and changing power dynamics, leading to better firm performance (Besley et al., 2017; Hunt et al., 2020; Marinova et al., 2016). Despite these promising findings, there is a need for a more comprehensive evaluation of the consequences of radical GE interventions, including a more systemic approach and considering the influences of societal, organizational, and individual factors that shape the implementation process (Kalpazidou Schmidt & Graversen, 2020; Molineux, 2013).

6.2.2 A Systemic Approach to Facilitate the Organizational Change Toward GE

Organizational cultural change is generally challenging, with a relatively low success rate, as Smith (2003) found in studies of 284 cases, where only 19 percent achieved success. Scholars describe gender inequality in academia as a persisting challenge, often referring to it as the "unbeatable seven-headed dragon" (van den Brink & Benschop, 2012). Gender inequality in academia has been especially persistent, so scholars refer to the unbeatable seven-headed dragon (van den Brink & Benschop, 2012). However, there are successful cases of cultural change, and these propose a systemic approach (Molineux, 2013). The SHRM process model (Wright & Nishii, 2008) offers a dynamic view into HR policy implementation, displaying the interwoven relations between the process, the stakeholders, influence factors, and outcomes.

The SHRM process model suggests that various factors influence the involved stakeholders and processes, which results in divergent stages of the policy implementation and explains why the ultimate outcomes of the policy may differ from the intended policy outcomes (Wright & Nishii, 2008). The model distinguishes between the intended HR

practices, which are the practices outlined by an organization on paper, the actual HR practices implemented by line managers, and the by employees perceived HR practices. The intended HR practice embodies the result of formulating an HR strategy aimed at designing an HRM practice that the organization's decision-makers believe will effectively elicit the desired organizational and employee responses (i.e., for example, the increased effort to attract and hire female academics resulting in a higher share of female academics). HRM implementation literature (Mirfakhar et al., 2018; Trullen et al., 2020) states that a variety of factors from the macro-, meso-, and micro-level affect the implementation behavior of line managers (actual HR practices) and the perspectives of employees who experience these HR practices (perceived HR practices). This might cause a disconnection between what an organization strategically aims for, the extent to which line managers interpret and execute the policy, and employees' perceptions and reactions (Trullen et al., 2020).

Macro-level factors, such as national legislation and culture, significantly impact the implementation of GE interventions (Kalpazidou Schmidt & Graversen, 2020). External pressures for equality, both positive and negative, can shape the implementation of GE interventions, as highlighted by Acker (1990). For instance, the European Union's requirement for formal GE plans in public bodies and educational institutions to receive funding has pushed institutions to prioritize GE (European Commission, 2023). Additionally, societal beliefs are crucial in motivating or hindering effective implementation. Information processing theory suggests that individuals develop attitudes based on social information they receive, and negative societal beliefs can impede implementation, while positive beliefs can promote it (Salancik & Pfeffer, 1978).

At the meso-level, organizational systems and practices within STEM organizations, historically built on male needs and beliefs, impact the implementation of GE interventions (Acker, 1990). Research shows that supportive cultures and practices enhance the effectiveness of HR initiatives (Dewettinck & Vroonen, 2017; Veli Korkmaz et al., 2022). Shared beliefs about HR interventions among employees also influence their acceptance and engagement in implementation behaviors (Wright & Nishii, 2008).

Furthermore, micro-level factors involving stakeholders' beliefs play a role in GE intervention implementation (Mirfakhar et al., 2018). Stakeholders' attitudes toward the intervention and their belief in its effectiveness influence their engagement in implementation behaviors (Pearce & Sims, 2002). However, radical GE policies are often associated with negative assumptions, including concerns about compromising recruitment standards, negative perceptions of female hires, and unfairness toward men's careers (Benschop & Verloo, 2011; Mirfakhar et al., 2018). These negative assumptions can limit commitment to implementing radical GE policies. Conversely, stakeholders'

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beliefs about the appropriateness and effectiveness of increasing the number of female academics are crucial for motivation and effort in policy implementation (Mirfakhar et al., 2018). Understanding the interplay between macro-, meso-, and micro-level factors in the implementation process is essential for promoting more GE at STEM universities.

6.2.3 Cultural Change toward More GE in Academia

Based on the theory of change, Kalpazidou Schmidt and Graversen (2020) conceptualized how and under which conditions the implementation of radical GE policies leads to objective and subjective consequences. Objective consequences relate to quantitative effects caused by an intervention (i.e., the increased share of female applicants and hires). Still, they can also display cultural or structural changes that are qualitative. The latter refers to the transformation of work procedures and practices within the organizations implementing the HR intervention (Kalpazidou Schmidt & Cacace, 2017). The subjective impact refers to stakeholders' experience resulting from the HR intervention implementation, such as perceptions that female and male staff hold equal rights, responsibilities, and opportunities or increased gender awareness (Bührer et al., 2019; Kalpazidou Schmidt & Graversen, 2020). The SHRM literature additionally describes that the perceptions of the implemented HR policy vary across employees and strongly predict employees' reactions to the HR intervention (Wright & Nishii, 2008).

6.2.3.1 From Intended to Actual GE Policy

Societal and personal beliefs can influence the intentions and commitment of department chairs toward implementing a radical GE policy (Kalpazidou Schmidt & Graversen, 2020). If society holds strong negative beliefs about radical GE policies, such as perceiving unfair treatment of men, it may lead to policy adaptations that provide more flexibility. For example, departments might deviate from exclusively hiring female academics by making exceptions for male candidates or leaving vacancies unfilled for a certain period to allow the hiring of male candidates afterward. This deviation from the intended approach would result in a lower influx of women into the departments. Department chairs' personal beliefs about the benefits of gender diversity within their departments also play a role (Veli Korkmaz et al., 2022). Lower beliefs in the benefits may lead to a lower commitment to implementing the policy as intended and less intention to invest extra effort in finding and hiring female academics. Moreover, research suggests that management's commitment (in this case, the department chairs and Executive Board) plays an essential role in a policy's effective implementation (Parkes et al., 2007). Leaders can increase employees' understanding of the policy, and by fostering

positive attitudes throughout the faculty, they stimulate employees' positive mindset and implementation behaviors (Pearce & Sims, 2002).

Furthermore, national legislation can have an impact on the radical GE policy (Kalpazidou Schmidt & Cacace, 2017). It can either prohibit or limit the scope of the policy. On the one hand, a court may deem the radical approach too extreme and not aligned with the intended goal, leading to legal restrictions. On the other hand, the prospect of a court inspection may create a sense of constraint among deans, causing them to implement the policy less strictly.

Finally, the approach taken by the Executive Board in developing and introducing the radical GE policy can significantly impact the motivation of department heads to implement the policy as intended (Mirfakhar et al., 2018). Organizational change is a complex process that requires employees to understand the reasons behind the change, and organizations must provide them with the necessary resources to navigate the change effectively (Van Den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009). A top-down approach, where the Executive Board imposes the policy without involving department heads in the development and decision-making process, can limit the sensemaking process of implementation agents. Sensemaking refers to the process through which individuals comprehend the necessity, objectives, and personal roles concerning the intervention and its implementation (Gioia & Chittipeddi, 1991). By excluding department heads from this process, their understanding of the policy's content, roles, and responsibilities may be compromised, leading to resistance or confusion during implementation (Van den Heuvel et al., 2009; Wright & Nishii, 2008).

6.2.3.2 From Actual to Perceived GE Policy

The SHRM process model posits that the consequences of HR policies depend on the perception and interpretation of individual employees (Wright & Nishii, 2008). Personal experiences, motivations, and beliefs play a significant role in how employees make sense of HR-related information, contributing to variance between individuals (Van Beurden et al., 2021). In this regard, this study zooms in on two relevant employee groups affected by the GE policy: The hiring professors and the hired female academics (fellows). Hiring professors and fellows form opinions about the implemented policy through processing the information stemming from the GEolicy (social information processing theory: Salancik & Pfeffer, 1978). Ultimately, their beliefs about the policy and regarding GE in general translate into subjective consequences (i.e., perceptions to what extent the policy led to equal opportunities for men and women, awareness of gender issues, and perceptions regarding a cultural change).

Individuals who hold strong beliefs in gender equality and recognize the importance

of radical policies are more inclined to perceive such policies as promoting equal rights, responsibilities, and opportunities for both women and men (Noon, 2010). These individuals will likely acknowledge that implementing such policies brings attention to gender issues and initiates discussions regarding discrimination against both genders (Kalpazidou Schmidt & Cacace, 2017). Furthermore, individuals who firmly believe that organizations should prioritize gender equality and address the disadvantaged position of female academics are more prone to interpret radical policies as opportunities for fostering cultural change within the organization (Benschop & Verloo, 2011). They perceive these policies as vehicles for increasing the representation of female role models, leveling the playing field for women, and signaling to students and society at large that gender inequality is a matter of concern for the university, and they are committed to enacting change (Gender Action, 2020).

6.2.3.3 Feedback Loops

We acknowledge that the perceptions and consequences of the radical GE policy might influence the impact factors in a feedback loop. In this regard, employees' experiences with the policy can confirm or disconfirm their beliefs about such an approach (Mirfakhar et al., 2018). Moreover, conclusions that the organization takes from the objective and subjective consequences can lead the decision-makers to adjust or confirm their personal beliefs, commitment, or organizational procedures concerning the policy implementation. Overall, creating more gender balance and equal opportunities can reinforce positive societal beliefs regarding GE and the necessity for radical approaches.

6.3 Materials and Methods

Our empirical case study entails a recruitment policy at an international-oriented STEM university in the Netherlands. The university counts nearly 12.000 enrolled students and about 3.700 academic staff members, of whom 26.89 percent are women (Annual report 2018, including PhDs, Post-Docs, Assistant, Associate, and Full Professors on payroll). To reach their gender equality targets (i.e., 20 percent female full professors, 25 percent associate professors, and 35 percent assistant professors), the university decided to introduce the radical policy, which started September 1st, 2019, and entailed opening vacancies for permanent academic staff exclusively to women in the first six months of recruitment per vacancy. The recruitment policy would apply for one year and a half to 100 percent of the vacancies that would be opened after 01.09.2019. The university pointed out that the hired female academics would be part of the policy for five years starting with the appointment date. Additionally, they would be entitled to an

additional start-up package of 100.000 Euros and a mentoring policy.

The national and international media highly debated this radical policy and its effectiveness in reaching GE (Dance, 2019). The Executive Board justified the approach by pointing out that the university comprised the lowest share of female researchers compared to all other Dutch universities (VNSU, 2020). According to the Executive Board, female underrepresentation had been a long-lasting and prominent topic of many strategical meetings, and the university board did not expect to reach their targets without establishing additional measures (Dance, 2019). Prior approaches (e.g., female participation in selection committees or stating yearly ratio goals regarding the male-female staff ratio) to increase the share of female scientists were not successful or only generated slow and minor changes. The main goal of the policy has been stated as:

"This program is aimed to attract talented women who pursue an academic career in our university. Aside from the advantages of a diverse workforce, these fellows can serve as role models for the next generation of female scientists". (First email from the Executive Board to internal staff, 2019)

6.3.1 Data Collection

GE interventions are embedded in complex systems involving multiple stakeholders who interact and contribute to the eventual consequences (Kalpazidou Schmidt & Graversen, 2020). To simultaneously maintain a broad overview and in-depth knowledge of the perceptions of the policy, we utilized a mixed-method approach with a variety of data collection methods (i.e., surveys, interviews, and desk research) and data sources (i.e., organizational documentation, Twitter data, hiring professors, fellows). Data were collected between December 2019 and September 2020. Table 6.1 provides a chronological list of the collected data and their link to the research questions.

6.3.1.1 Measuring Macro-Level Impact Factors

To reflect on macro-level factors' impact on the recruitment policy implementation, we received insight into the social media behavior around the GE intervention. In September 2020, the university's communication department provided data filtered from the University's Twitter account using a specific search query . We examined Twitter data from three different periods (data retrieved 7.10.2020): The introduction phase (16.6.2019 – 31.8.2019), the operationalization phase (1.9.2019 – 2.7.2020), and the post-operationalization (3.7.2020 – 31.8.2020). The three-stage analytical process of "capturing," "understanding," and "presenting" (Fan & Gordon, 2014) formed the

Table 6.1 Data sources and their connection to the research questions

Data collection period	Data source	Addressed RQ	Data insight
December 2019	Online surveys • Professors • Fellows	RQ1	Micro-level factors that promote or hinder the implementation
February/March 2020	Interviews • Fellows	RQ2	Consequences for individual behavior, cognition, and affect
June/July 2020	Interviews • Hiring professors	RQ2	Consequences for individual behavior, cognition, and affect
September 2020	Organizational data • Staff and recruitment data	RQ2	Objective recruitment outcomes
	Interviews with HR advisors	RQ1	Meso-level factors that promote or hinder the implementation
	Organizational data • Complaints sent to DIHR • Decision of the DIHR	RQ1	Macro-level factors that promote or hinder the implementation
October 2020	Twitter data • Period 1: 16.6.2019 – 31.8.2019 • Period 2: 01.9.2019 – 02.7.2020 • Period 3: 03.7.2020 – 31.8.2020	RQ1	Macro-level factors that promote or hinder the implementation

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foundation for the analysis of the Twitter data. First, we captured relevant conversations and collected 10,843 direct tweets (tweets matching the search query) and 9,719 related comments (tweets on direct tweets). For each of the three phases, we captured the following data: Number of tweets, the total potential reach of tweets (i.e., total views of tweets), a total of different authors, the gender distribution of authors, the ranking of the most used words, and the total amount (and amount per gender group) of tweets that included the following words and their combinations: "positive discrimination," "discrimination," "men disadvantaged," "unfair men," "opportunity," "advantage women," "gender equality," "women role model." We further examined if variables or the content changed throughout the three phases and finally visualized an overview of the data. Table 6.2 in Appendix A represents the overview.

A second macro-level factor that influenced the implementation of the radical GE policy displays the Dutch Institute of Human Rights (DIHR) ruling. We received documents from the university's Executive Board in September 2020 containing an overview of the accusations, the decision, and feedback concerning the positive discrimination of male candidates. The data provided an overview of the process and the impact of such a ruling.

6.3.1.2 Measuring Meso-Level Impact Factors

We established the timeline and an overview of the stakeholders by interviewing two HR policy advisors separately in November 2019. Both advisors outlined the implementation process and identified the stakeholder groups engaged in each phase. We compared the provided information and created a total overview that was agreed upon by both advisors and can be found in Table 6.3 in Appendix B. We used these overviews to examine the decision-making approach regarding the GE policy. Moreover, semi-structured interviews with 15 hiring professors provided insights into their perceptions of the upper management's commitment toward the policy (in this case, the department chairs and Executive Board). Figure 6.2 visualizes the implementation phases.

6.3.1.3 Measuring Micro-Level Impact Factors

We used online surveys to provide insight into micro-level factors that impacted the implementation of the radical GE policy (i.e., hiring professors' and fellows' beliefs regarding GE and the radical approach). We distributed the online survey in December 2019 to nearly 400 hiring professors. Overall, 111 individuals responded (response rate of 27.75 percent). In addition, 14 fellows filled in a survey between December 2019 and January 2020.

Figure 6.2 Timeline of the policy implementation

6.3.1.4 Measuring Objective and Subjective Consequences

We evaluated the objective consequences of the policy by acquiring HR data in December 2020 on the number of applicants and new hires (from 2013-2020). Additionally, the HR data informed us about the female-male ratio of all nine scientific departments. To thoroughly evaluate the subjective consequences of radical GE interventions, we followed the recommendations of scholars and captured in-depth information from involved stakeholders (Kalpazidou Schmidt & Graversen, 2020). We conducted semi-structured interviews in February and March of 2020 with seven female academics hired within the GE policy between September 2019 and March 2020. The interviewed new hires all started as assistant professors. Moreover, in June and July 2020 we interviewed 15 hiring professors involved in the recruitment process. We obtained information regarding peoples' perceptions of gender awareness at the university as a consequence of the HR policy. Additionally, we asked them to report the policy's potential consequences regarding equal rights, responsibilities, and opportunities for female and male academic staff.

The first author transcripted all interviews and coded the transcripts regarding the aspects (1) upper management's commitment toward the GE policy (meso-level factor), (2) perceptions regarding equal rights, responsibilities, and opportunities for male and female employees, (3) gender awareness, and (4) the potential impact of the policy on a cultural change toward GE at the university. Table 6.4 outlines the participants' demographics of these semi-structured interviews.

Table 6.4 Overview of survey and interview participants' demographics

		Surveys		Interviews	
Demographic	Category	Hiring professors	Fellows	Hiring professors	Fellows
Gender	Female	28	14	5	8
	Male	82	0	10	0
	Identified as another gender	1	0		
Nationality	Dutch	89	-	6	1
	EEA	15	-	9*	4
	Non-EEA	7	-	-	2
Total n		111	14	15	8

Note. * International professors did not specify EEA (European Economic Area) or non-EEA nationality in the interviews

6.4 RESULTS

To address research question one, we explored six factors that potentially impacted the implementation of the radical policy and might explain a disconnection between intended, actual, and perceived GE policy (see Figure 6.1: Macro-level: societal beliefs, national legislations; Meso-level: Organizational decision-making, leadership commitment; Micro-level: Individual beliefs about a radical approach to GE). Furthermore, we present insights into research question two by capturing the objective and subjective consequences of the policy implementation, which we present at the end of this section.

6.4.1 Factors Affecting the Implementation of a Radical GE Policy

6.4.1.1 Macro-Level Factors

On the macro-level, the Twitter data provided insights into societal beliefs regarding GE, radical policies, and gender representation in academia. Adverse reactions on Twitter may hinder implementation, while positive responses can encourage stakeholders' implementation behavior (Salancik & Pfeffer, 1978). We identified discrimination-related tweets as negative content and tweets related to opportunities for women and equality as positive content. Overall, the most tweets were recorded in the introduction phase (n = 15,574 in 76 days) compared to the operationalization phase (n = 1,529 in 306 days) and the post-operationalization phase (n = 3,460 in 59 days). The negative tweets dominated the positive ones in each phase (see Appendix A for an overview of the Twitter data). Throughout the phases, men posted a higher proportion of negative content compared to women (introduction phase: 49 percent men, 14 percent women, 37 percent unknown; operationalization phase: 49 percent men, 29 percent women, 22 percent unknown; post-operationalization phase: 47 percent men, 13 percent women, 40 percent unknown).

The organizational documents revealed that the DIHR the DIHR received 49 complaints, displaying a public reaction. A court hearing invitation was received on July 23rd, 2019, to assess the appropriateness of the radical GE policy, explicitly concerning discrimination against male candidates during recruitment and selection. From July 2019 to July 2020, the institute investigated the suspected discrimination. On July 2nd, 2020, the institute concluded, based on European law, that the policy constituted

illegal discrimination against men. Although the institute's decision was non-binding, the university's Executive Board revised the policy in response. This macro-level factor significantly impacted the operationalization phase, ending and altering the policy.

6.4.1.2 Meso-Level Factors

We examined the organizational process of implementing the radical GE policy, focusing on the decision-making approach and leadership commitment as influential factors. Our findings revealed that the university's highest level had a dominant role in the initial development and introduction of the policy, while department chairs and hiring professors had limited involvement in its formulation but were responsible for its execution. In the later stages of development, the department chairs and the university council played crucial roles by approving the policy proposal before its implementation by the Executive Board. However, this top-down approach, with a significant imbalance in the contributions of hierarchical actors, is likely to hinder the intended implementation of the policy. It restricts the opportunity for implementation agents to identify with the content and process of implementation (Mirfakhar et al., 2018), affecting the policy's effectiveness. Additionally, as two interviewed hiring professors put it, professors' autonomy in today's academic culture clashes with the top-down approach used when implementing the radical GE policy. These comments display an additional reason why the top-down decision-making approach may hinder the implementation of the policy as intended.

"You get it [the policy] on your table, but you are not told how to execute it. There you are in your world with mixed feelings, which in turn hinders further discussions and process". - Hiring Professor 3

Moreover, the interviews with hiring professors provided insights into their perceptions of upper management's commitment to the GE policy. Overall, hiring managers acknowledged the bold decision of the Executive Board to introduce a radical policy, which they reported shows high commitment toward the issues of GE and their motivation to change the current gender imbalance at the university. We identified several statements from hiring managers reporting that their leaders' commitment was crucial for their own reactions toward the GE policy. In addition, hiring managers noted differences between departments regarding the department chairs' commitment to the GE policy implementation.

"I experienced the rector as very, very supportive. Our dean, what I said, did extremely well. That is why I had the idea, okay, if this is important enough, then I have to convey to the people around me in the same way that this is a good idea. And that we are going to do this." – Hiring Professor 9

6.4.1.3 Micro-Level Factors

Further, we received insights into hiring professors' and fellows' beliefs regarding the radical GE policy, which they provided through online surveys (Table 6.5 in Appendix C). Research on effective HR policy implementation shows that actors' attitudes toward new policies partially determine employees' implementation behavior and reactions, thus displaying a crucial impact factor for the policy's consequences (Dewettinck & Vroonen, 2017).

We asked hiring professors what factors they thought hindered the implementation of the radical GE policy. The most frequent answer was that a lack of qualified female academics prevents STEM organizations from finding suitable female candidates. Employers would therefore need to lower their recruitment standards while recruiting women. In this regard, we observed that the departments' current gender composition and the availability of female candidates in the field did not exclusively shape employees' attitudes toward the policy. We compared the mean scores of the five faculties with a share of female academics lower than 25 percent. A one-way ANOVA revealed a statistically significant difference between departments ($F(9, 87) = 3.09$, $p \leq .01$). Two departments stated that the radical GE policy displayed a good or fantastic approach. In comparison, the other three departments thought that the policy was a questionable or bad approach. Potential reasons for the difference between departments could be the leadership commitment or the communication transparency regarding the policy goals (Mirfakhar et al., 2018).

Hiring professors expressed concerns about radical GE policies potentially negatively affecting female hires' perception, as they might be perceived as being hired based solely on their gender. The experiences of the majority of women (six out of seven) during the initial months of employment did not indicate discriminatory treatment from individuals within or outside the university. However, discriminatory treatment could arise in specific work situations or later in their careers (VNSU, 2020).

Finally, a considerable number of professors (one-third, n = 111) expressed critical attitudes towards the GE policy in surveys, considering it questionable or unfavorable. Additionally, one in five professors believed implementing the radical GE policy would lower selection standards, while one-third reported concerns about its impact on male academics' careers. In contrast, fellows showed less concern about the policy hindering

male colleagues' careers, with only two out of the 14 surveyed fellows sharing this sentiment.

6.4.2 Objective Consequences of a Radical GE Policy

To answer the second research question and examine the objective consequences of the GE policy, organizational HR data revealed that the share of female applicants increased due to the introduction of the gender equality policy from 19 percent (January 2019) to an average of 28 percent (July 2019 till July 2020). The university recorded the highest share of female applicants at the start of the policy in July 2019 (34 percent). Furthermore, an analysis of female hires in headcount numbers showed that from 2013 to the beginning of the policy in July 2019, the average increase per year was 13 female scientists. In the period of the policy (July 2019 till and including June 2020), this has increased to 36 female scientists. Therefore, the rate of attracting top female faculty has almost tripled. Noticeably, in addition to the increase of 36 women, the university hired 42 male academics during the policy period. Thus, females represented 46.15 percent of the total hires, not the intended 100 percent. The cause lies in various exceptions for specific hiring cases (e.g., agreements with male academics made before the policy launch or faculties were able to hire male applicants after reposting the unfilled vacancy after six months).

Looking at the changes in the share of female academics, the total percentage of female academics at the university has amplified from 22.48 percent to 25.31 percent during the period of the policy (Figure 6.3). The share of female academics increased between July 2019 and July 2020 at all functional levels. Specifically, the function of assistant professors showed a boost within the policy period compared to the year before. The university did not yet reach its gender equality targets (i.e., 20 percent female full professors, 25 percent associate professors, and 35 percent assistant professors).
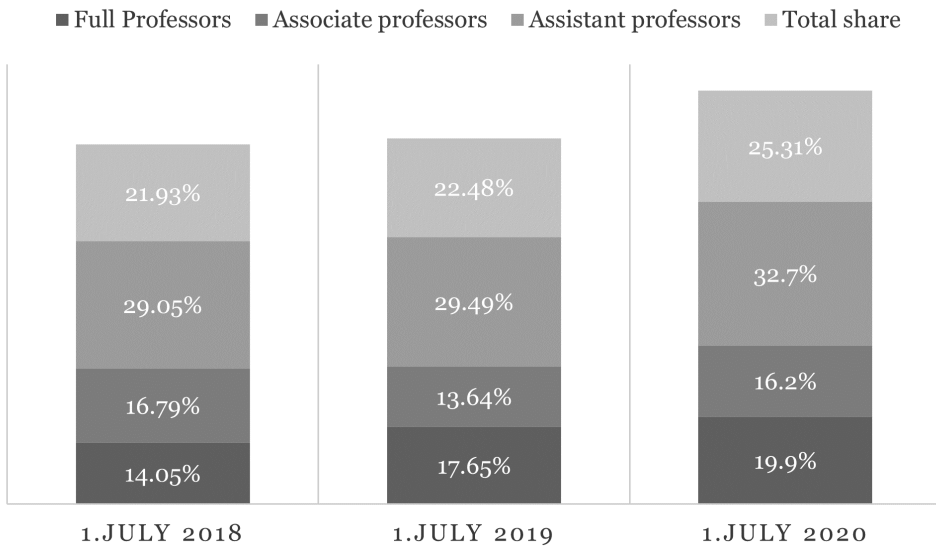
6.4.3 Subjective Consequences of a Radical GE Policy

Concerning the second aspect of research question two, the interview data of hiring professors and fellows provided insight into the extent to which the GE policy led to gender awareness, gender balance, and a perceived change toward more GE at the university.

6.4.3.1 Perceived Gender Awareness

First, hiring professors and fellows acknowledged that implementing the radical

Figure 6.3 Share of female academics per year and function group

■ Full Professors ■ Associate professors ■ Assistant professors ■ Total share

	1.JULY 2018	1.JULY 2019	1.JULY 2020
Total share	21.93%	22.48%	25.31%
Assistant professors	29.05%	29.49%	32.7%
Associate professors	16.79%	13.64%	16.2%
Full Professors	14.05%	17.65%	19.9%

GE policy has significantly generated awareness and initiated discussions about gender issues within the university community. The interviews revealed that although the policy may not initiate immediate behavioral change, it has been perceived as a symbolic gesture to the outside world, showcasing the institution's strong standpoint on gender equality. Interviewees believed that the conversations about the policy and gender diversity have contributed to an increased understanding of the importance of gender equality and opened the door for future discussion and actions around equality.

"Well, it has helped raise a lot of awareness. It has never been talked about as much as in the past year". – Hiring Professor 5

"The problem is there, so the policy is very good for awareness". – Fellow 7

6.4.3.2 Perceived Gender Balance

Second, hiring professors reported that the STEM university's radical GE policy has significantly improved the gender balance. The share of women has notably increased, not exclusively among assistant, associate, and full professors, but also postdoctoral positions.

"Last year, we had two female professors. I think we're at five or so now. It has helped in that regard". - Hiring Professor 5

"It is nice to see that if we have a meeting with Teams, to see more concentration of females than what it was before, you know. It just feels better". – Hiring Professor 6

Implementing the policy has substantially increased the number of highly qualified female applicants and hires across various positions. Interviewees praised fellows for their exceptional qualifications and contributions. They mentioned that a proactive approach of deans in reaching out to potential candidates had attracted top applicants.

"The people who applied, uh, to these five positions where really the best in the world. It is amazing what kind of people we were able to attract". - Hiring Professor 12

"I see now in all kinds of positions women functioning beautifully. So that is just a good thing". - Hiring Professor 10

6.4.3.3 Perceived Gender Equality

Finally, hiring professors and fellows expressed their perceptions of how a radical gender equality policy has led to a cultural change toward more gender equality. Both interviewee groups viewed the policy as an important attempt to break the existing cycle and promote equality. Hiring professors acknowledge that traditional measures to achieve balance have not yielded significant results and highlighted the necessity of a radical approach.

"At the university, we are quite autonomous. Everyone is always looking for holes everywhere [hahaha], pushing the boundaries. So if you do this very loosely […] then not much happens at the university." - Hiring Professor 11

"I mean, once there's a rule, there are plenty of creative minds trying to get around the rules." - Hiring Professor 2

The program's ability to address inequality and create a more balanced environment is seen as a powerful aspect. Fellows felt that the radical GE policy created fairness for them. Fellows reported that they typically face additional challenges in the male-dominated fields and that the policy made it easier for them to prove themselves and secure job opportunities. The program provided resources and opportunities that women often must work harder for or may not otherwise receive.

"There are a lot of men in hardware, you need to prove yourself even more if you are a women. It will make it more equal." – Fellow 6

"I think the program is leveling the playing field. It is not like we will not ever hire a men again."- Fellow 4

Nevertheless, while acknowledging the efforts made by the Executive Board to initiate change, it is also recognized that the program alone cannot lead to a substantial change in the organization without a concurrent shift in behaviors and cultural norms. The interviewees believed that organizational changes, such as shifts in management, work processes, and the overall culture, were necessary to ensure that the new female hires felt supported upon arrival. Only then could the university sustainably foster increased diversity and inclusion. The interviewees also acknowledged the limitation of the policy in addressing the larger societal culture in the Netherlands. However, they hoped that academic staff could learn in a more equality-respecting environment and then promote equality in society through education and interactions with others outside the university.

"In the short term, the program will succeed, but then someone comes from outside, and they have a radically different view on how something can be carried out. Then there is really a long way to go until it is listened to openly." – Hiring Professor 3

"The program will succeed if hired women will stay. The problem is bigger. It is difficult for women to balance work and private life. The program is a good starting point." – Fellow 3

Moreover, particularly hiring professors raised some concerns regarding the fairness of the policy towards male candidates, as they may feel deprived of opportunities or face delays in their career advancement. However, one hiring professor also mentioned the potential of the increased gender balance in changing opponents' attitudes regarding the policy. One hiring professor stated that they initially had skepticism but changed their opinion after witnessing the quality of female candidates attracted by the policy. Furthermore, interviewees noted that the policy could increase the exchange between male staff and new female hires, lowering stereotypes and creating awareness that diversity benefits the departments. Different perspectives and approaches can contribute to better academic output. A practical suggestion from the interview is facilitating the exchange through a buddy-system.

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"I have a problem with the very explicit 'we only hire women' because you exclude people. You put them at a disadvantage. 'You are a man. You are only allowed in 6 months'. Some people feel like, well, I'll go somewhere else". – Hiring Professor 5

"For men it could be disapointing and feel unfair, but women without examples that is also unfair". – Fellow 2

"Male candidates are deprived of the opportunity, or at least with a time delay. I do not think that is fair." – Hiring Professor 13

"This is not only a policy for the women, it is also a program for the men. I hope that they [men] are starting to understand, so really feel, I mean, experience on a daily basis that an imbalance is just to their own disadvantage." – Hiring Professor 1

"What a lot of people don't understand of the policy: There is no provision in this program that says "you need to hire uh, a woman, and you need to compromise on quality" It is nowhere, and people do not understand that. – Hiring Professor 12

The interviewees mentioned various additional positive opportunities of the policy for GE. Hiring professors stated that the policy would inspire other women to pursue an academic career in the Netherlands because they see possibilities for female academics. Moreover, the radical policy broadened the recruitment processes, resulting in a more diverse female talent pool. The policy temporarily removed inequality and enabled women to be evaluated solely on their qualifications. One hiring professor stated that women were historically discriminated against, which they believed justifies the positive discrimination against men for a limited period.

The policy also challenged biases, as demonstrated by a dean's surprise regarding the great pool of talented women that applied. Furthermore, the program created a women-friendly environment, attracting candidates based on the institution's commitment to inclusivity.

"We did a broad recruitment process for the very first time in our department." – Hiring Professor 2

"I think that is the powerful thing about this policy, you take that inequality out of it for a while." – Hiring Professor 9

"The female applicants were saying that this [the policy] is the reason for us to come. And the reason was not the package but the fact that they felt this was a women-friendly environment." – Hiring Professor 15

6.5 DISCUSSION

This study aimed to fill the research gap regarding the implementation dynamics and effects of radical GE policies in STEM universities. Radical approaches were considered promising but faced concerns and lacked comprehensive evaluations (Benschop & van den Brink, 2014; Kalpazidou Schmidt & Cacace, 2017). The lack of insights into the implementation process hindered progress in the field. To address this gap, an empirical case study was conducted in a Dutch STEM university that implemented a radical GE policy.

Our first research question addressed the extent to which macro- (i.e., societal beliefs and national legislation), meso- (i.e., organizational decision-making and leadership commitment), and micro- (i.e., individual beliefs about a radical approach to GE) level factors promote or hinder a radical GE policy implementation. These theoretical insights contribute, on the one hand, to the GE literature and provide a deeper understanding of the process through which a radical policy leads to the desired GE. On the other hand, by exploring additional individual, organizational, and societal factors that potentially influenced the policy implementation, our study contributes to HRM implementation literature by extending its focus on line managers' resistance to change (Van den Brink et al., 2018).

Consistent with previous conceptual and empirical research (Ip et al., 2019; Kalpazidou Schmidt & Graversen, 2020), our findings demonstrate that it is crucial to examine the context of the radical GE policy implementation to address societal assumptions regarding radical GE policies (e.g., negative connotation for female hires). Our data revealed that the prominent negative societal beliefs and personal doubts regarding radical approaches and GE in academia might lead department chairs to create certain flexibility in the intended GE policy. Instead of hiring exclusively women, the university hired 46.15 percent female academics. One could conclude that a radical approach was necessary to achieve a gender-balanced recruitment outcome. Furthermore, our research confirms previous studies that claimed implementation agents' essential role in a policy's effective implementation (Parkes et al., 2007). Leaders perceived as highly committed toward the policy's goal also stimulated other employees' positive attitude toward the policy.

Our research extends current literature by empirically showing that addressing the

negative assumptions of radical approaches is necessary because these personal and societal beliefs can hinder the successful implementation of a radical GE policy that effectively contributes to more GE in STEM universities. In this regard, open dialogues and transparent procedures are necessary to address peoples' prejudices that radical approaches may compromise quality standards, that women hired through such programs may be stigmatized, and that male candidates may face unfairness (Noon, 2010).

Furthermore, our research adds to the question of how radical GE policy contributes to the desired cultural change regarding GE. We explored quantitative and qualitative data to receive comprehensive conclusions regarding the objective and subjective consequences of the policy implementation. The data showed that the policy increased female applicants' intention to apply to an academic position at the university because they sensed that the university is female-friendly and takes GE seriously. Thus, in line with social information processing theory (Salancik & Pfeffer, 1978), the university signaled sincerity regarding the topic of GE by taking a radical approach.

Moreover, we expand current SHRM research that had focused on motivational outcomes (e.g., work engagement and satisfaction) regarding implementation consequences (Van Beurden et al., 2021). Our research shows the applicability of the SHRM process model (Wright & Nishii, 2008) to the implementation dynamics of a radical GE policy. The intended aim of the policy of exclusively hiring women and contributing to GE diverged from the perceptions of hiring professors and fellows. Although, the interviewees recognized the potential of the radical GE policy, they also acknowledged the importance of complementary organizational changes to foster sustainable GE within the university. Generally, radical approaches are not expected to lead to GE if existing structural inequalities within the academic system are not erased (Roos et al., 2020). In this regard, professors reported issues related to work-family interference or career development possibilities. If organizations support work-life initiatives, women will show higher aspirations for leadership, experience less conflict between family and work domain, and feel confident in using flexible work arrangements and job autonomy, which benefits their performance (Kossek & Buzzanell, 2018).

6.5.1 Organizational Implications

This research provides beneficial implications for organizations implementing a radical GE policy. First, organizations must consider macro, meso, and micro-level factors when implementing a radical GE policy. By doing so, they increase the chances of success to promote GE in their institutions. At the macro-level, public reactions, both

negative and positive, can influence internal stakeholders' implementation behavior. Organizations must address concerns and engage in open dialogue to facilitate a smoother implementation process. At the meso-level, the organizational structure plays a role. Balancing involvement and empowerment across hierarchical levels is crucial to ensure implementation agents' ownership and commitment to the policy. At the micro-level, employees' beliefs and attitudes are key. Positive attitudes promote motivation and active participation, while negative attitudes hinder implementation. Clear communication and addressing concerns are vital.

In particular, we found stakeholder involvement and commitment to be crucial for their attitudes and efforts toward more GE. Therefore, we recommend that organizations demonstrate the radical policy's necessity early in the development phase to raise stakeholders' awareness which will consequently heighten acceptance of the radical approach (Ip et al., 2019). Research showed that if implementation stakeholders understand and acknowledge the systematic discrimination of minority groups, their resistance decreases, and their support for the radical approach rises (Castilla & Benard, 2010). Moreover, the early involvement of stakeholders, the stimulation of positive attitudes, and the creation of clear responsibilities for leaders can also increase the success of radical GE policies (Mirfakhar et al., 2018). Our findings further highlight the importance of top management's commitment to the implementation and effectiveness of gender equality policies. Organizations could introduce focus groups or workshops to facilitate involvement and raise stakeholder commitment (Bleijenbergh & Benschop, 2008).

6.5.2 Limitations and Future Research

Finally, we want to address the limitations of our research. The interpretation of this research's findings is limited to the time length of the research design. We investigated the perceptions and effects of the radical GE policy for a year. Future research should analyze whether the policy yields high retention rates and good performance of the new female hires over time to evaluate the long-term outcomes of the policy. Additionally, although we collected various information about the new policy's effectiveness and implementation, we did not consider changes related to outflows or promotions of female academics. Moreover, the staffing planning at the time of the policy allowed for hiring more new academics. This influenced the recruitment activities, and we cannot estimate the impact of these circumstances. Nevertheless, the amplified share of female academics concerning the total number of hires shows that the policy boosted the hiring of more women and diversified the gender distribution at the university. Finally,

the current literature misses in-depth information regarding the effects of radical GE policy implementation on men. Future research would benefit from considering these consequences when refining guidelines on how to facilitate the organizational change toward GE.

6.5.3 Conclusion

In summary, women are underrepresented in STEM (Catalyst, 2019), and it is crucial to guarantee GE in order to ensure that outcomes are not functionally restricted (Hunt et al., 2020). Our research showed that macro- (i.e., societal beliefs and national legislation), meso- (i.e., organizational decision-making and leadership commitment), and micro-level factors (i.e., individual beliefs about a radical approach to GE) might prevent the fast progress of GE in STEM organizations. In this regard, the SHRM process model (Wright & Nishii, 2008) states that a potential disconnect between the intended and the realized consequences of HR policies exists because of implementation stakeholders' personal interpretations and reactions. Overall, the policy increased female faculty, and the radical approach signaled to female applicants that the university is female-friendly and serious about GE. Thus, concrete and time-bounded goals of the radical GE policy can successfully increase the gender balance among employees in STEM universities. However, to avoid negative consequences for implementation agents or new hires, organizations should increase involvement across all phases of the implementation, and the combination of radical and transformational strategies is essential to sustain GE.

APPENDICES

Appendix 6A.

Table 6.2 Twitter data characteristics and content

	Introduction phase	Operationalization phase	Post-operationalization phase
Time period	16.06.2019-31.08.2019	01.09.2019-02.07.2020	03.07.2020-31.08.2020
Number of tweets	15,574 51.39% direct posts and 48.61% related comments*	1,529 78.22% direct posts and 21.78% related comments	3,460 59.65% direct posts and 40.35% related comments
Total potential reach of tweets	35,218,625 views	8,625,326 views	9,934,995 views
Total of different authors	6,895	969	1,874
Gender distribution of authors	Female: 25% Male: 46% Unknown: 29%	Female: 28% Male: 41% Unknown: 31%	Female: 21% Male: 54% Unknown: 24%
Posts related to discrimination claims**	485 14% posted by women, 49% posted by men, 37% posted by unknown	49 29% posted by women, 49% posted by men, 22% posted by unknown	18 13% posted by women, 47% posted by men, 40% posted by unknown
Posts related to opportunities of the policy***	45 29% posted by women, 41% posted by men, 30% posted by unknown	16 42% posted by women, 25% posted by men, 33% posted by unknown	9 22% posted by women, 56% posted by men, 22% posted by unknown
Most used words in the tweeds	Women, Men, [Male professor's name]****, I work...,	Reaches, Women across, Women professors, Qualified women	Women, Human Rights, College for Human Rights, Discrimination, Men

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Appendix 6B.

Table 6.3 Overview of stakeholders and their primary time of involvement in the implementation process of a radical GE policy

	Development phase (January - 15.06.2019)	Introduction phase (16.06. -31.08.2019)	Operationalization phase (01.09.2019 - 01.06.2020)	Revision phase (02.06.2020 - 31.03.2021)
Stakeholders				
Organizational strategic level				
Executive Board	Initiated the policy	Led the internal and external communication	Took the decision to re-vice the policy	
HR policy advisors	Developed a policy concept			Revised the policy
Women network of the university			Used the female network for recruitment purposes	
Chief diversity officer of the university	Supported a radical gender equality policy			
Organizational execution level				
Department chairs	Agreed on a policy that focuses on hiring 100% female academics	Communicated the policy within faculties	Recruited, selected, and interacted with new female hires	
Managing Directors		Communicated the policy within faculties		
Group leaders		Communicated the policy within faculties	Recruited, selected, and interacted with new female hires	
Assessment Committee			Recruited and selected of new female hires	
Supervisors of the new female hires			Recruited, selected, and interacted with new female hires	
HR professionals			Recruited and interacted with new female hires	
Applicants for research positions				
Rejected candidates			Applied to an academic position	
Hired candidates			Applied to an academic position	
Internal employees				
Employees (colleagues)		Reacted towards the gender equality policy	Interaction with new female hires	
External individuals or institutions				
General public		Reacted towards the gender equality policy	Reacted towards the gender equality policy	Reacted towards the gender equality policy
Other (STEM) universities		Reacted towards the gender equality policy	Competed for female academics	
LNVH network (National network of women professors)		Reacted positive towards the gender equality policy		
Dutch Institute of Human Rights			Investigated and decided on the case of discrimination	Provided feedback on revised gender equality policy

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Appendix 6C.

Table 6.5 Employees' beliefs regarding the radical GE policy

Belief regarding the radical GE policy	HR professionals (total n=18)	Professors (n=111)
What is your opinion about the gender equality program? (1) It is a bad approach - (5) It is a fantastic approach)	Fantastic or good approach (11) Neither a good nor bad approach (5) Questionable approach (2) Bad approach (0)	Fantastic or good approach (50) Neither a good nor bad approach (10) Questionable approach (29) Bad approach (8)
Do you think the program will successfully increase the share of female scientists? (1) Definitely not - (5) Definitely yes	Believe in the success* (16) Indifferent about the success** (1) Do not believe in the success*** (0)	Believe in the success* (69) Indifferent about the success** (19) Do not believe in the success*** (9)
The gender equality program offers mainly opportunities for the university; (1) Strongly disagree - (5) Strongly agree	Agree or strongly agree (11) Indifferent (3) Disagree or strongly disagree (1)	Agree or strongly agree (46) Indifferent (30) Disagree or strongly disagree (22)
The gender equality program is hindering the career of male scientists; (1) Strongly disagree - (5) Strongly agree****	Agree or strongly agree (4) Indifferent (7) Disagree or strongly disagree (2)	Agree (30) Indifferent (31) Disagree or strongly disagree (35)
I believe that the university is going to lower their selection standards because of the gender equality program; (1) Strongly disagree - (5) Strongly agree	Agree or strongly agree (1) Indifferent (1) Disagree or strongly disagree (15)	Agree or strongly agree (18) Indifferent (21) Disagree or strongly disagree (58)

CHAPTER 7
General Discussion

7

STEM organizations strive to increase diversity among employees to generate more innovation and competitive advantage (Jones, 2016). Yet, only in inclusive environments is diversity thought to reliably lead to better employee well-being and functioning (Mor Barak et al., 2016). Thus, organizations and researchers realized the importance of creating inclusive workplaces where employees experience being accepted in an existing group and valued for their personal needs and characteristics (Jansen et al., 2014). Nevertheless, STEM organizations still contain a relatively homogenous workforce that slowly diversifies (Fry et al., 2021). Moreover, they lack information on how inclusion interacts with other work aspects and if it leads to the desired outcomes in the STEM context (Moreu et al., 2021).

This dissertation aimed to generate knowledge and contribute to solving the puzzle of how workforce diversity and inclusion affect employees' work experience in STEM organizations. Furthermore, I examined three organizational interventions (i.e., inclusive leadership, onboarding self-training, and a radical gender equality policy) and the extent to which they promote a diverse and inclusive environment where all employees can be productive, happy, and healthy.

7.1 ANSWERING THE RESEARCH QUESTIONS

Research Question 1: How do perceived workforce diversity and experienced inclusion shape the relations between work characteristics (i.e., work demands and resources) and employee functioning and well-being?

Studies have examined the direct effects of workforce diversity on individuals, teams, and organizations and yielded inconclusive outcomes (Joshi & Roh, 2009; Van Dijk et al., 2012). Scholars argue that workforce diversity does not impact employees in isolation and call for research considering diversity as a context variable (e.g., Jaiswal & Dyaram, 2019). In addition, studies on the impact of work characteristics on employee functioning and well-being do not consider the organizational context of rising diversity in STEM organizations (Bakker & Demerouti, 2017). The extent to which employees feel included has been pointed out as an essential element for teams to manage diversity effectively and benefit from it (Mor Barak et al., 2016). Thus, considering experienced inclusion while examining how workforce diversity shapes employee outcomes is valuable. The conceptual model in **Chapter 2** provides the foundation for my work on the joint effects

of work characteristics, workforce diversity, and experienced inclusion on employee functioning and well-being. The framework proposed that (a) the work context (i.e., job/organizational demands and resources) depends on the extent to which employees differ from each other (e.g., regarding age, gender, or expertise), (b) employees who receive appropriate work resources (e.g., support, feedback, and empowerment) feel more included at work while work demands (e.g., conflicts with colleagues or between private and work role) reduce employees' inclusion experience because they may perceive their environment as less suitable for them, and (c) more inclusion in diverse environment safeguards that employees feel safe and are encouraged to express their personal needs and perspectives. Overall, inclusion is proposed to improve employee functioning and well-being. Especially with rising diversity, inclusion prevents the negative consequences of individual differences, such as intercultural misunderstandings or the cognitive load of managing differing perspectives.

Furthermore, I empirically tested the interactions of work characteristics and workforce diversity on employee outcomes to reveal how employee outcomes depend on perceived workforce diversity. In **Chapter 3**, I investigated how work demands (i.e., high work-family conflict and non-transparent procedures), perceived workforce diversity, and experienced inclusion jointly affected employee exhaustion and affective commitment. The findings confirmed my expectations regarding affective commitment. Work demands diminished employees' affective commitment to a lesser extent if they felt included in perceived diverse work environments. Nevertheless, the impact of work demands on employee exhaustion was not dependent on the workforce diversity or inclusion experience. Moreover, extreme negative workplace experiences (i.e., discrimination) always lead to harmful employee outcomes. Thus, the buffering function of experienced inclusion shows limits. The impact of experienced discrimination and the effects on employee exhaustion cannot be safeguarded by experienced inclusion. Additional instruments are necessary to secure employees' health and support employees that face workplace discrimination.

Additionally, I was interested in how workplace diversity would potentially shape the relationships of work resources (i.e., inclusive leadership) on employee functioning and well-being. The results from **Chapter 4** showed that inclusive leadership was especially important in more diverse workplaces as it safeguarded employee functioning in diverse groups. Furthermore, with rising workforce diversity, inclusive leadership also, to a greater extent, stimulated employees' resource-seeking behavior, which benefited the exchange of diverse knowledge and innovation (Hajro & Gibson, 2017; Nelissen et al., 2017). Against my predictions, inclusive leadership led to more helping behavior and work engagement independently of the workforce diversity within a group.

In addition to the beneficial joint effects of work characteristics, workforce diversity, and experienced inclusion, I proposed a feedback loop between the outcomes and antecedents (see the conceptual model in **Chapter 2**). In this regard, increased employee functioning and well-being, I proposed, would relate to more inclusive environments, which translates into more resources and fewer demands on the work floor. Employees who are healthy and productive see the benefits of diversity and are energized to invest resources in other people. Thus, they will more frequently engage in inclusive behaviors and contribute to an inclusive environment (Nelissen et al., 2017). Furthermore, inclusive environments impact work characteristics. If employees feel included, they are more likely to exchange resources (e.g., facilitating a feedback culture where colleagues can openly share opinions and feel safe to ask for feedback: Collins & Smith, 2006). Moreover, work demands decrease because inclusive environments minimize relational barriers and create respect and understanding between employees. Such work climates prevent conflicts with colleagues (Jehn et al., 1999) and reduce discrimination and harassment on the work floor (Van Knippenberg & Schippers, 2007).

The studies in this dissertation bring together occupational health research and diversity and inclusion literature. Rather than examining the impact of workforce diversity in isolation, I show that diversity and felt inclusion shape the extent to which work characteristics relate to employee functioning and well-being. Overall, inclusion contributes to improved employee outcomes, especially in diverse environments. Nevertheless, the buffering effects are limited. Inclusion did not prevent the health-impairment process or the negative consequences of workplace discrimination. Inclusive leadership has been revealed to be a powerful instrument contributing to more proactivity and task performance of employees in diversifying organizations. A fruitful next step might be to investigate what resources (e.g., inclusive leadership) may help to secure employee health and to develop interventions that transfer these resources.

Research Question 2: How can organizational interventions stimulate employees' feelings of inclusion and perceptions of social support?

STEM organizations are responsible for offering equal opportunities for everyone and preventing discrimination (United Nations Development Programme, 2019). Research on diversity and inclusion points towards deficits of current diversity management in STEM organizations, but did not clarify which practices would be more effective to benefit from diversity (van Veelen et al., 2019; van Knippenberg et al., 2020). Generally, a climate of inclusion has been called to be valuable for sharing and utilizing diverse abilities, knowledge, and skills (Mor Barak, 2017; Shore et al., 2018). The findings of

this dissertation also supported this notion. Nevertheless, the question remains if and how STEM organizations, which consist of a relatively homogeneous workforce and try to increase diversity, can ensure an inclusive environment for minority employees (e.g., women: Täuber, 2020; Van Veelen et al., 2019). **Chapter 2** provides a more holistic view on diversity and inclusion management by considering the composition and impact of work characteristics within homogenous workplaces. Organizations can impact an inclusive workplace by providing work resources or diminishing work demands. Generally, employees interpret cues from their work environment (i.e., job demands and resources) to conclude their inclusionary status within an organization (Brewer, 1979; Leary & Baumeister, 2000; Shore et al., 2011). Organizational environments that offer resources to all employees, such as social support and fair treatment, stimulate individuals' experience that they are valued members of the organization (Mor Barak & Cherin, 1998). Additionally, access to resources enables employees to express their needs, proactively deal with work challenges (Parker et al., 2006), access information, and be part of decision-making processes (Demerouti et al., 2001). Overall, it enables employees to build relationships with colleagues and their supervisor (e.g., through the support offered by supervisors or information exchange with colleagues). This increases employees' impression of being a valued organizational member, which resembles high feelings of inclusion (Jansen et al., 2014).

In contrast, employees might feel less included if organizations cannot diminish work demands. Work demands most likely hinder employees from expressing their personal preferences at work. On the one hand, work demands (e.g., work pressure or task conflicts) cost energy that cannot be utilized to engage in self-expression or build inclusive relationships with other organizational members (Bakker & Demerouti, 2017). On the other hand, employees who suffer from consequences of high or continuously present work demands (e.g., stress or headaches: Bakker & Demerouti, 2007) may perceive their environment as less suitable for them, and their sense of belongingness and valued uniqueness drops (Hofhuis et al., 2014).

Moreover, **Chapter 4** shows that inclusive leadership creates inclusive workplaces where employees effectively share diverse information. If leaders were perceived as more inclusive (i.e., employees felt treated as group members and sensed that their characteristics matter to the group's success: Randel et al., 2018), employees were more likely to ask their leaders for feedback or advice. Additionally, inclusive leadership encouraged employees to offer their colleagues more help (e.g., expertise or insider information). These types of knowledge exchange are essential to benefit from varying knowledge and competencies (Van Knippenberg et al., 2004).

Finally, in **Chapter 5**, I introduced a self-training to doctoral candidates who started

working at a STEM university. The results of the quasi-experimental study suggest that newcomers can be trained to apply sensemaking behaviors (i.e., seeking information about the work context and other colleagues) and that those who more frequently made sense of their new work environment improved their own feelings of valued uniqueness and perceived social support during the onboarding process. In this regard, the onboarding intervention prevented newcomers from assimilating to the organizational identity and suppressing their own individual identity. Instead, the intervention contributed to newcomers' ability of self-expression, and it increased the interaction with organizational members, which translated into the sense that the workgroup valued newcomers' unique contributions and supported them.

Overall, this dissertation shows that stakeholders from multiple levels are involved in the process of inclusion creation. Organizations are advised to evaluate their employees' work demands and resources regularly. In this way, organizations want to provide resources, such as inclusive leadership, to stimulate employees to express their needs and be themselves. Additionally, organizations secure inclusion by reducing workplace demands. Moreover, STEM universities can help doctoral candidates to feel more included by encouraging them to engage in proactive behaviors and make sense of their work environment.

Research Question 3: How can organizational interventions increase workforce diversity?

Rising workforce diversity displays a reality for STEM organizations, which they need to address (European Commission, 2023). At the same time, STEM orgnizations actively pursue workforce diversity to achieve a competitive advantage (Hunt et al., 2020). Despite the necessity and desire to increase workforce diversity, limited research in STEM organizations offers research on the impact and effectiveness of diversity policies and practices (Moreu et al., 2021). Generally, in **Chapter 2**, I argue that happy, healthy, and productive employees potentially contribute to a more inclusive work environment, which attracts and retains a more diverse workforce in the long term. Motivated and energetic employees most likely feel more committed to their organizations and thus have a stronger sense of belonging (Meyer et al., 2002). Additionally, engaged employees who display extra-role behaviors (e.g., helping behavior) potentially embrace a work environment where they experience a greater appreciation of differences and individuality (Nelissen et al., 2017). More inclusion contributes to respectful workplaces where discrimination and harassment on the work floor are decreased (Van Knippenberg & Schippers, 2007). This inclusive environment makes employees feel more comfortable

within their organizations (Chen & Tang, 2018). Organizations can, in this way, retain their diversified workforce (Brimhall et al., 2014). Taking the example of the gender equality policy (**Chapter 6**), the university is more likely to maintain recruited female academics by safeguarding women's experience of inclusion. Suppose the organizational climate, processes, and practices meet women's needs. In that case, they will more likely stay at the university because they feel like accepted organizational members.

Additionally, while promoting inclusion, organizations create a pro-diversity employer branding (Jonsen et al., 2019). The positive reputation potentially attracts diverse individuals because applicants sense that their unique backgrounds, skills, or ideas will be accepted and valued at the prospective workplace (Cunningham & Melton, 2014; Ng & Burke, 2005). Despite these positive conclusions, my research in **Chapter 6** showed that specific gender equality programs, which aim to create a more gender-balanced workforce and favor female applications above male, do not necessarily generate the desired gender equality. Overall, the radical policy increased the number of female applicants, and compared to previous years, more women were hired, especially at the assistant professors' level. The policy also boosted the dialogue outside and within the university about women's disadvantaged position in STEM. Nevertheless, although the policy was formulated as a radical recruitment policy, which allowed faculties only to hire women, only 46.15 percent of the new hires appointed during the year in which the policy was executed were women. Potential hindrance factors for an incomplete implementation were a public backlash regarding the program, the internal resistance of implementation agents, and a potential lack of supervisor commitment (Mirfakhar et al., 2018; Salancik & Pfeffer, 1978; Van den Heuvel et al., 2009). Taken together, organizational interventions that contribute to a more inclusive climate will, in the long run, have more potential to attract and maintain employees with minority characteristics. Additionally, radical recruitment policies, which aim to boost gender equality, can be successful if STEM organizations effectively manage internal and external resistance against radical gender equality approaches.

Research Question 4: How can employees' proactive and prosocial behaviors contribute to effective diversity and inclusion management?

Recent research has primarily discussed what organizations and leaders can do to contribute to diverse and inclusive workplaces (e.g., Hunt et al., 2018; Nishii & Leroy, 2022; Shore & Chung, 2021). Although scholars point out that employees' attitudes, behaviors, and abilities likely impact the creation of more workforce diversity and inclusion in organizations (Li et al., 2019; Nelissen et al., 2017; Van Knippenberg

et al., 2004), insufficient research defines employees' role in diversity and inclusion management (Nishii et al., 2018).

The empirical studies in this dissertation allow drawing first conclusions on how employees might contribute to diversity and inclusion management from the bottom up. **Chapter 4** revealed that employees played a significant role in linking inclusive leadership to better individual task performance. Receiving inclusive leadership related to higher performance ratings, partially through stimulating employees to exchange resources (i.e., information or help) with their leaders and colleagues. These results confirmed the assumptions that employee behaviors needs to be considered when designing diversity or inclusion interventions. Furthermore, in **Chapter 5**, I examined specific onboarding behaviors of newcomers and how these would relate to their sense of social support and inclusion (i.e., the feelings of valued uniqueness and belongingness). Employees' sensemaking behavior partly explained the intervention's effect on feelings of valued uniqueness and social support of peers. Thus, the intervention encouraged employees to seek more information from their work contacts, and in this way, newcomers felt more seen and supported by their colleagues. Lastly, **Chapter 6** shows that implementing a radical gender equality policy depends on stakeholders' effective implementation behaviors. In this regard, two aspects majorly guided the implementation behavior. On the one hand, employees who were motivated and acknowledged the necessity to increase the diversity among the faculty, were more likely to actively search for women and engage in new recruitment possibilities (e.g., work actively with the talent recruitment team, ask current female employees to access their networks, personally invite candidates). On the other hand, the perceived commitment of the upper management increased stakeholders' recruitment efforts. Professors who observed a positive attitude of their leaders towards the policy felt urged to put more energy into finding and hiring female academics. Overall, this dissertation presents evidence that the employees and their behavior may influence the diversity and inclusion efforts of STEM organizations. By examining potential antecedent (i.e., inclusive leadership, perceived leader commitment, and mindset) and possible outcomes (i.e., feelings of belongingness, feelings of valued uniqueness, and perceived peers' and leaders' social support) of employee behaviors I showed that proactive and prosocial employee behaviors are supportive of organizational initiatives and employee functioning.

7.2 THEORETICAL IMPLICATIONS

The presented research has three overarching theoretical contributions and informs a variety of research streams. The first theoretical implication informs the occupational

health and diversity and inclusion literature regarding the combined effects of work characteristics, workforce diversity, and inclusion on employee functioning and well-being. Looking at workforce diversity in isolation to estimate individual or organizational outcomes evoked criticism because the context in which diversity occurred was not taken into account (Guillaume et al., 2017; Van Knippenberg & Schippers, 2007.). In this dissertation, I presented the interactive relationships of work characteristics, diversity, and inclusion on employee functioning and well-being. Thus, I offered a more comprehensive view of the complex work environment in which diversity and inclusion interact to affect employees. I provided valuable insights to diversity and inclusion research on how inclusion buffered the negative impact of work demands on employee affective commitment. These results underscored the potential benefits of inclusion as presented in the inclusion framework (Shore et al., 2011). Moreover, the findings aligned with and extended previous research within the occupational health literature, which suggests that more resourceful environments promote employees' ability to handle constraining job aspects (e.g., Bakker et al., 2005). My findings provided insights into a less-researched positive leadership style that could potentially offer valuable work resources to employees (Decuypere & Schaufeli, 2020). In more diverse environments, inclusive leadership was more beneficial in promoting proactive and prosocial employee behaviors and securing employees' task performance. These findings supported the assumptions that inclusive leadership helps employees to overcome challenges associated with diversity (e.g., communication barriers or assimilation: Van Knippenberg & van Ginkel, 2022).

Moreover, research on inclusion has stated that inclusion generally benefits employees and organizations (Chung et al., 2019; Mor Barak et al., 2016). The research in this dissertation provided the first insights into the boundaries of inclusion. Specific work experiences (i.e., workplace discrimination) harmed employee well-being independently of employees' reported inclusion level. Furthermore, the relationships between work demands and employee health (i.e., employee exhaustion) were independent of workforce diversity or felt inclusion. I responded to scholars' requests to uncover potential health consequences of diversity (Jaiswal & Dyaram, 2019) and concluded that the experience of inclusion in diverse work environments is not sufficient to prevent the impact of extreme work experiences or stop the health impairment process described in the JD-R theory (Bakker & Demerouti, 2017; Crawford et al., 2010). Additional resources, such as coaching or support from leaders, might be needed to decrease the work demands or help employees to sustain their health (Bakker et al., 2005).

Altogether, I showed that it is necessary to investigate the impact of diversity and inclusion not in isolation but to include other aspects of the work context (i.e., work

demands and resources). I provided a theoretical outline and valuable research findings to guide future studies. I contributed to the theory of diversity and inclusion by offering suggestions regarding which work characteristics can stimulate or harm inclusion feelings and, in turn, secure employee functioning and well-being within diversifying organizations. Researchers can use the findings to design studies and interventions to maximize the outcome of interest (e.g., inclusion, diversity, employee functioning, or well-being).

A second theoretical implication contributes to inclusion literature by highlighting overlooked antecedents of inclusion experience (Li et al., 2019). Although research on inclusive leadership and how it stimulates inclusion has rapidly evolved (Nishii & Leroy, 2022; Randel et al., 2018; Shore & Chung, 2021; Veli Korkmaz et al., 2022), less knowledge is accessible on how aspects of the work environment or the employees themselves affect the inclusion experiences (Li et al., 2019). The present dissertation provided valuable knowledge on how, in particular, STEM organizations can effectively improve employee inclusion experiences. The framework in **Chapter 2** proposed that work characteristics inform employees' feelings of inclusion. Based on sociometer theory (Baumeister & Leary, 1995), I argued that individuals continuously monitor their environment for cues on their inclusionary status. Employees who report high work demands (e.g., work-family conflict or discrimination) feel constrained and sense a lower fit with their work environment (Kristof-brown & Guay, 2011), resulting in a lower inclusion experience (Shore et al., 2018). Contrary, high levels of work resources such as leader support or access to information signal that employees are appreciated organizational members, and their inclusionary status rises (Jansen et al., 2014). These suggestions are consistent with the job demands-resources theory (Bakker & Demerouti, 2017), which outlines that work demands can lead to stress-related outcomes, while work resources can boost employee well-being and motivation. Moreover, the research extends the job demands-resources theories' outcomes (i.e., employee health, functioning, and motivation) by the concept of felt inclusion. The dissertation highlighted the importance of offering sufficient work resources to promote inclusion feelings.

Furthermore, the findings demonstrated that employees' inclusion experience was affected by their proactive behaviors during their onboarding period. Employees trained to engage in proactive onboarding behaviors perceived their supervisors and colleagues as more supportive and felt more valued for their individual characteristics. Overall, I conclude that employees' behavior may be overlooked as an antecedent in creating inclusive workplaces. I contribute to existing multilevel diversity and inclusion frameworks that consider the employee a passive actor in organizational inclusion management (Nishii & Leroy, 2022; Shore et al., 2018).

7

Another contribution of this dissertation lies in investigating the potential impact of diversity and inclusion efforts in STEM organizations. The presented studies shed light on how inclusive leadership and a radical gender equality policy impacted various stakeholders within STEM organizations. First, although recent research has focused on the dimensions and consequences of inclusive leadership (Randel et al., 2018; Shore & Chung, 2021; Veli Korkmaz et al., 2022), less is known on how inclusive leadership contributes to the exchange of diverse knowledge and perspectives, which is essential for STEM organizations' innovation and competitive advantage (Smit et al., 2020). My study showed that inclusive leadership contributed to an inclusive work environment in which employees more frequently sought resources from their leader and helped their colleagues. Moreover, inclusive leadership was especially valuable in more diverse environments to ensure productivity and boost proactive resource-seeking behavior. The results align with social learning theory (Bandura, 1985), which suggests that employees learn social behaviors by observing their environment and deciding to engage in those behaviors that they perceive to have positive consequences. The results underscore the beneficial role of workplace inclusion (Shore et al., 2018) and contribute to research in STEM organizations that, to a great extent, examined how to increase workforce diversity (Kroeper et al., 2022; McClelland & Holland, 2015).

The evaluation of a radical gender equality policy at a STEM university, which allowed exclusively hiring female academics, revealed, next to objective results (i.e., numbers of female hires), a variety of cognitive, behavioral, and affective consequences for hiring professors, rejected applicants, and female hires. Past research solely focused on simple indicators (i.e., mainly quantitative information: e.g., (Besley, Folke, Persson, & Rickne, 2017). We followed the call for a more comprehensive overview of the consequences of gender equality policy implementations (Kalpazidou Schmidt & Graversen, 2020). University employees stated that the radical policy implied that the university board committed to their diversity targets and that such an approach increased awareness for gender equality and the disadvantaged position of female academics. In addition, the data showed that the policy increased female applicants' intention to apply to an academic position at the university because they sensed that the university is female-friendly and takes gender equality seriously. The results align with social information processing theory (Salancik & Pfeffer, 1978). The university signaled sincerity regarding the topic of gender equality by taking a radical approach. This sincerity also motivated numerous professors to expand their recruitment strategies and search and hire female academics. Moreover, although none of the new hires reported unfavorable treatment by organizational or external individuals, hiring professors also voiced their worries that the radical approach would stigmatizes the female hires in the future. In line with social

identity theory (Tajfel & Turner, 1986) the insights suggest that stigmatization most likely leads female academics to suppress their identities and experience discrimination. Consequently, the women likely leave the organization, gender equality cannot be sustained, and the policy's long-term success might be restricted (Davies et al., 2019).

My final theoretical implication informs organizational intervention research in STEM organizations. Existing interventions that aimed to improve the social integration of employees provided inconclusive findings and offered a limited possibility for employees to take control in shaping their own inclusion (Cable et al., 2013; Frögéli et al., 2023; Mobasseri et al., 2021). The onboarding intervention presented in this dissertation encouraged employees to integrate taught behaviors into their daily work, thus displaying an on-the-job learning possibility that stimulated newcomers' proactive onboarding behaviors. By introducing the mechanism of the cyclical model of self-regulated learning (Zimmerman, 2013) to the onboarding intervention research, I showed that sensemaking behavior can be trained through action planning, behavior practice, and self-reflection. The findings confirmed the socialization resources theory (Saks & Gruman, 2012), which states that to successfully onboard, newcomers need to acquire the social, job, and personal resources, which reduce uncertainty and stress. Moreover, the dissertation uncovered that sensemaking behavior improved newcomers' feeling of valued uniqueness and their perception of peer support. The intervention confirmed that by offering room for self-expression, participants evaluated their needs (i.e., social, job, and personal resources) and took control in integrating into the new work context (Cable et al., 2013). Overall, we inform current research by providing quantifiable results about to what extent proactive strategies contribute to more felt inclusion and social support (Bauer et al., 2021; Frögéli et al., 2023).

7.3 PRACTICAL IMPLICATIONS

Research stated that more workforce diversity will provide a competitive advantage to STEM organizations because they can increase their innovative output (Leroy et al., 2021). Additionally, the diversification of the workforce is a societal phenomenon that organizations need to deal with (Fry et al., 2021). Therefore, it is essential that organizations know what they can do to increase and benefit from the difference between their employees. The research included in this dissertation points towards a positive impact of diversity. Still, as expected, these benefits cannot be reached without considering other workplace characteristics or workplace inclusion. Thus, I advise STEM organizations to...

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...increase the workforce diversity by...

... introducing concrete policies and interventions supported by an organization's upper management. The radical gender equality policy increased the number of female applicants and hires because it was formulated clearly and the university committed to the issue of gender equality (Benschop & Verloo, 2011; Noon, 2010). However, organizations need to take a variety of important influence factors into account when implementing such initiatives. First, societal beliefs and stereotypes embedded in an organization's culture most likely influence the resistance of implementation agents and need to be addressed during the implementation. Secondly, employees who did not recognize women's disadvantaged position in the labor market or did not acknowledge the necessity of increasing gender diversity were less likely to accept and implement the radical approach. Organizations can sensitize employees to the disadvantages women face in STEM by communicating facts and numbers (e.g., Catalyst, 2022) or sharing personal testimonials of female employees. Finally, the findings showed that if stakeholders within the university were positive and supported the policy, it motivated others to put more effort into finding female academics. In this regard, I recommend that organizations increase stakeholders' commitment by involving them in developing and deciding to implement radical policies.

Overall, I conclude that it is insufficient to increase solely workforce diversity. Raising awareness for the needs of different minority groups and creating an environment where employees believe in the power of diversity is essential. Thus, for organizations to benefit from employee differences, it is critical to...

... consider the workplace experience of different employee groups.

If diversity is relatively low in an organization, it is crucial to consider that different employee groups might experience the work environment differently. Minority employees are more likely to have less (access to) work resources such as social support and higher work demands (e.g., work-self conflict or harassment). Consequently, they are less engaged in their work, show less affective commitment to their organization, and perform less well. I advise organizations to cautiously examine their employees' work environments in terms of job and organizational-related aspects and processes and ensure that these are fair and resourceful for all employees. In addition, by offering sufficient resources, employees can deal with work demands and express themselves at work. This will contribute to employees' experience of being valued and accepted in the organization. Thus, employees will experience higher inclusion (Shore et al., 2018). More

inclusion creates a safe work environment in which employees can and or are willing to share their differing opinions and express their needs (Nembhard & Edmondson, 2006). Different backgrounds can be utilized to derive advanced and innovative solutions only if differing needs and perspectives are communicated(Leroy et al., 2021). Thus, to benefit from the increased diversity, I suggest that organizations...

...increase workplace inclusion...

... through organizational initiatives. In this regard, STEM organizations can create inclusive climates, develop inclusive leaders, and provide inclusive practices (Shore et al., 2011). First, an inclusive climate, thus employees' shared perception that the organization cares for one's individual well-being and is committed to diversity and inclusion issues, contributes positively to employees' feelings of inclusion (Nishii & Rich, 2014). In this regard, organizations need to create organizational systems that guarantee fairness and value differences of employees.

Furthermore, leaders facilitate inclusion by engaging in inclusive leadership (e.g., inviting and appreciating unique contributions(Nembhard & Edmondson, 2006). In line with Randel et al. (2018), I propose that leaders' pro-diversity beliefs, humility, and cognitive complexity influence the extent to which leaders act inclusively. Pro-diversity beliefs refer to the perceptions that diversity links to positive group outcomes (Homan et al., 2007). Humility is the acknowledgment that oneself is "not the center of the universe", but that other peoples' needs are valid (Nielsen et al., 2010, p. 34). Lastly, cognitive complexity displays the ability of people to perceive and understand complex social information systems (Dierdorff & Rubin, 2007). First, organizations might want to hire and promote leaders that show tendencies of these aspects. Second, organizations can provide developmental initiatives focusing on increasing pro-diversity beliefs, humility, and cognitive complexity. For instance, organizations can nurture a deeper exchange between the leaders and the employees (Javed et al., 2019) by, for example, letting them solve challenges together. The increased interaction will enhance leaders' awareness of individual employee needs and how the differences between employees can lead to better solutions (Dobbin & Kalev, 2016). Finally, inclusive leaders appear more authentic if they believe in the benefits of diversity (Van Dick et al., 2008) and support organizational initiatives regarding diversity and inclusion (Veli Korkmaz et al., 2022). Therefore, organizations can share clear diversity and inclusion missions, and strategies empower leaders to communicate these within the organization.

Lastly, inclusive practices enhance the inclusive feelings of team members (Shore et al., 2018). As mentioned ealier, different employee groups may perceive organizational

procedures differently(Bleijenbergh & Van Engen, 2015). Thus, I advise organizations to include multiple employee groups in evaluating existing and designing new procedures and policies. One way in which organizations can provide safe spaces to minority employees is by offering employees channels, which can be facilitated through, for example, communities (e.g., LGBQ+ or female networks). Important is the open dialogue with these communities and the appreciation of the voiced perspectives and concerns (Nembhard & Edmondson, 2006).

Diversity and inclusion management has been recognized as a multidimensional construct (Nishii et al., 2018; Nishii & Leroy, 2022; Shore et al., 2018). Based on my research, I argue that besides top-down approaches, also bottom-up approaches are valuable in increasing diversity and inclusion in STEM organizations. In addition to the organizational possibilities to facilitate workplace inclusion, I therefore suggest to...

...encourage employees' proactive and prosocial behaviors.

The findings presented in this dissertation show that the employee displays a crucial and overlooked role in diversity and inclusion management. In this regard, if employees exchange diverse information with leaders and colleagues, their performance benefits from the diversity in their work environment. Strategies for resource exchange (i.e., resources-seeking and helping behavior) and how to benefit from resources can be a recurrent theme in team meetings where leaders share their behavioral intentions and expectations regarding employee behavior. Organizations might also want to provide job-crafting training to enhance proactive resource exchange between employees (Dubbelt et al., 2019).

Furthermore, employees feel more appreciated for their unique contribution if they can make sense of their work environment (by seeking information about one's work context and colleagues). In return, employees who proactively engaged in conversations with their work relationships felt more socially supported by colleagues and leaders. Employees should be empowered from their first day in an organization to proactively seek information needed, express personal needs, and adjust the work context to their personal preferences. Stimulation of behavior can happen implicitly through policies, practices, and leadership (e.g., empowering or inclusive leadership: Arnold et al., 2000; Randel et al., 2018) that enables the employee to make sense of their work environment proactively. Additionally, integrating the message of valued proactivity into organizational communication (e.g., intranet, on the first slide of the organizations' PowerPoint template, or sharing research findings, such as ours, at corporate events) makes the desired behavior salient and can boost employees awareness and intention

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to engage in proactive sensemaking behavior (Bauer et al., 2021; Connelly et al., 2011).

7.4 LIMITATIONS

The presented dissertation holds several limitations and provides implications for future research directions. First, most of our research is cross-sectional in nature, and causality can thus not be concluded. In addition, I relied to a great extent on self-reported measures. An exception presents the leaders' reports of an employee's helping behavior and performance in **Chapter 4**. Measuring the constructs of interest at one time and from one source increases the chance of common method bias (Podsakoff et al., 2012). To ensure an accurate interpretation of the presented findings, it is essential to consider the potential impacts of this bias carefully. I took several precautions to minimize the chance of common method bias. I performed specific analyses, such as the Harman's single factor test, or the theories guiding our research models suggested a particular causal order (e.g., job demands and resources theory). Furthermore, certain constructs of interest (e.g., feelings of inclusion, experiences of one's work, or perceptions of experienced social support) were not easy to measure accurately from external sources (Podsakoff et al., 2012). In this regard, self-reports have been pointed out to represent the real world accurately and be reliable in predicting employee and organizational outcomes (Riggle et al., 2009). In the same vein, studies showed that diversity perceptions explained the impact of objective diversity and that perceptions of organizational members adequately described the existing workforce (Harrison & Klein, 2007; Shemla et al., 2016). In addition, examining the outcomes of employees in STEM, research has found that the performance ratings of minority employees were biased (Smith et al., 2001). Ideally, researchers should, thus, carefully reflect on the appropriate source of information and combine different sources of reports, as I did in **Chapter 4**, to derive more robust results.

I presented and evaluated individual-level models of how work characteristics, jointly with workplace diversity and inclusion, impact employee outcomes. Although I was interested in individual workplace experiences, employees do not work in a vacuum but depend on the team and organizational dynamics. Additional insights regarding team aspects and consequences can enrich our understanding of effective diversity and inclusion management. For instance, teams' knowledge exchange and learning processes, hierarchical structures, or organizational policies influence how employees behave and feel in organizations. Prior literature examined the impact of these dynamics and how they affected individual functioning and well-being (De Dreu & West, 2001; Tekleab & Quigley, 2014). Scholars have shown that team aspects, such as collective team identity and team learning, influence and explain the incoherent results of diversity research

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(van Veelen & Ufkes, 2019). Besides **Chapter 6**, which estimates macro- and meso-level factors that potentially impact implementing a radical gender equality policy, I neglected the organizational and team dynamics and their potential effects.

Overall, the study design of the presented studies did not allow for conclusions about long-term effects. Studies were either cross-sectional in design or focused on a limited period. The onboarding intervention ended after three months of employment, and I followed the implementation of the radical gender equality policy for a year. More prolonged periods would have been appropriate to evaluate the long-term effects of the interventions. Regarding radical gender equality policies (i.e., quotas), research has shown that it takes a considerably long time for organizational climate and individual behavior change (Wauters et al., 2014). Thus, following up on the gender equality policy and its impacts would be necessary for several decades.

Moreover, since I was interested in examining how STEM organizations, in particular, can effectively manage their workforce diversity and inclusion, our findings are not necessarily generalizable to other sectors, such as healthcare or retail. Nevertheless, I argue that diversity and inclusion issues are not unique to the STEM sector and that our findings might apply to other organizations. Dika and D'Amico, 2016 showed that the experience of minority groups and their outcomes were similar across STEM and non-STEM settings. Additionally, men working in female-dominated fields face similar challenges to women in male-dominated organizations, including experiencing gender role conflicts and exclusion (Blackley et al., 2019). Our research provides valuable insights into how employees and organizations in the STEM sector can benefit from, e.g., proactive employee behaviors, inclusive leadership, or the buffering effect of experienced inclusion on employee functioning and well-being. Although research will benefit from confirming our conclusions in different contexts, I also want to emphasize that diversity and inclusion research in STEM is not exhausted and needs further attention.

7.5 STRENGTHS

The present dissertation holds many strengths in terms of research methodology, data, and its value for theory and practice. First, the efforts of this dissertation provide valuable theoretical contributions by combining insights from occupational health research and diversity and inclusion research. For instance, in **Chapter 2 and 3** I build on the job demands- and resources theory (Bakker & Demerouti, 2017) to create the conceptual model that addresses how work characteristics, workplace diversity, and feelings of inclusion jointly relate to employee functioning and well-being. Moreover, the results of **Chapter 3** provide more defined knowledge to occupational health literature

on how diversity and inclusion experiences shape the relationships between work demands/resources and employee outcomes. In addition, the dissertation exceeds a theoretical contribution by introducing practical tools that organizations can implement to increase (gender) diversity through a recruitment policy (**Chapter 6**) and inclusion through an onboarding intervention (**Chapter 5**). Therefore, I offer solutions to prevailing organizational challenges related to inclusion and diversity. These solutions also benefit the broader society as more diverse and inclusive organizations contribute to a more inclusive society (Ferdman, 2014).

Second, we based the answers to our research questions on a variety of research methods, ranging from a conceptual design (**Chapter 2**), cross-sectional design (**Chapters 3 and 4**), quasi-experimental design (**Chapter 5**), to a mixed-methods design, which combines quantitative and qualitative data (**Chapter 6**). The breadth of approaches provides a more complete understanding of the overall research question and can enhance the generalizability when applying the results to theory or practice. Together the empirical studies included in this dissertation offer robust evidence regarding the joint effect of work characteristics, workplace diversity, and inclusion experience because I included data from different stakeholders and the studies have a longitudinal and multilevel design. Thus, the methodology improves the accuracy of the presented findings and recommendations (Teddlie & Tashakkori, 2009).

Finally, the collected data represented in this dissertation is of great value. The data reflects the affected population (i.e., STEM employees) in their actual work environment, which has several benefits, including enhanced external validity, increased representativeness, and reduced sampling bias (Hanel & Vione, 2016). To be more specific, the analyses in **Chapter 3** are based on a relatively large sample (N = 1187) of scientific and non-scientific STEM university staff members. Furthermore, in **Chapter 4**, I collected data from leader-employee dyads working in a variety of STEM organizations, which increases the generalizability of the findings. In addition, the implementation and evaluation of the presented diversity and inclusion initiatives (i.e., the onboarding intervention in **Chapter 5** and the gender equality policy in **Chapter 6**) were examined in the actual work context and the conclusions regarding the extent to which the gender equality policy improved the share of female academics are based on objective HR data, which has been rarely done in the past (Lau et al., 2022).

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7.6 FUTURE RESEARCH RECOMMENDATIONS

First, our research shows that the diversity and inclusion literature benefits from integrating theory from other domains (i.e., occupational health research). I encourage future studies that examine the consequences of diversity and inclusion to build and extend our findings. Moreover, other research streams might hold valuable expertise to further enlighten diversity and inclusion management and theory. For instance, sociology research examines how social structures shape organizations and how organizations might affect society and individuals. Incorporating insights from sociology into diversity and inclusion research can enrich the knowledge of how societal structures and beliefs influence organizational diversity and inclusion management (Nishii et al., 2018). Theories and concepts from social psychology, such as social comparison theory (Gerber et al., 2018), potentially discover the processes of how minority and majority employees evaluate their behaviors and emotions in comparison to other in- or out-group employees. In addition, insights from social facilitation (Bond & Titus, 1983), which looks at the impact of others on personal affection and functioning, showed that in the presence of others, individuals were more productive if they performed complex tasks, which is essential for the knowledge-intense work in STEM.

I propose that future research examines diversity and inclusion issues in the context of contemporary developments that change how teams and individuals operate in many STEM organizations. For instance, teamwork has changed drastically in STEM occupations due to the developments after the COVID-19 outbreak in 2020. Working remotely has become more routine, and meetings and events more often occur in a hybrid form (Gratton, 2021). These developments provide opportunities and threats for diversity and inclusion management (Dowling et al., 2022). On the one hand, working remotely allows employees to arrange personal and work issues more flexibly and according to their needs (Ingusci et al., 2021). Employees experience more room to adjust their work to personal needs (e.g., care work, household, less time spent traveling to work). Additionally, work tasks can be arranged according to personal preferences (e.g., performing concentration work at home while engaging in knowledge exchange in a face-to-face meeting: (Ingusci et al., 2021). These benefit the feelings of inclusion because people can be more authentic and feel valued if they get the freedom to arrange their work context (Ellsworth et al., 2020). Furthermore, it might support predominantly minority employees, who are now empowered to organize their, from the majority group, differing needs (e.g., employees who take care of their elderly parents or Muslims who

find the space to pray multiple times per day).

On the other hand, the changes regarding remote work and hybrid working teams also represent potential threats to employees and organizations in the light of diversity and inclusion (Dowling et al., 2022). Multiple responsibilities at work and home can increase demands and lead to more exhaustion of employees (Demerouti & Bakker, 2022), which might be worse for minority employees who experience less organizational support to cope with the demands (Hofhuis et al., 2014). Discrimination can also be harder to detect in hybrid teams, and organizations may need to prioritize social safety concerns (Yilmaz & Peña, 2014). Additionally, leadership in hybrid teams displays a higher level of complexity, and e-leadership skills are required to navigate diverse teams effectively (Chamakiotis et al., 2021). Knowledge exchange in hybrid teams can also be hampered, whereby the dynamics between off and online meeting participants potentially lead to the exclusion of perspectives from those joining online (Ellsworth et al., 2020). I suggest future research benefits from examining team dynamics and employees' different experiences in modern work teams. I would be especially interested in knowledge of the factors contributing to or hindering inclusion feelings in hybrid work teams. Discovering if and how diversity and inclusion boost or prevent teams' effectiveness and other consequences for individuals would be of great value for organizational diversity management.

Finally, as pointed out in our studies, I want to call for more research on the individual employee as an active stakeholder in diversity and inclusion management. Creating inclusive workplaces requires top-down initiatives, but a cultural change cannot be realized if employees do not support this culture through their behaviors and interactions with others (Workman-Stark, 2017). Inclusive behavior has been called out to prevent social categorization and stimulate transparent knowledge exchange (Van Knippenberg & van Ginkel, 2022). Nevertheless, research lacks conceptualization, antecedents, and concrete consequences of inclusive employee behavior (Nelissen et al., 2017). **Chapter 5** shows that proactive behavior can be trained (i.e., sensemaking). Employees proactively sought the additional social, job, and personal resources, which benefited their experiences of inclusion and social support in the organization. Insights into other individual strategies, intervention possibilities, and outcomes for oneself, others, and the organization would be of great value to further advance diversity and inclusion research in and outside of STEM.

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Initiative - Effectiveness (Moderator: Overall goal is directed linked to initaitives) meaning: initative is not only done because of its popularity, etc. Always take already used initiatives into account

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Summary in Dutch

De STEM-sector (Science, Technology, Engineering, Math) is een kennisintensieve werkomgeving die snel verandert (Smit et al., 2020). Om te kunnen overleven moeten STEM organisaties zich kunnen aanpassen en bij blijven met innovatie binnen het vakgebied. Over het algemeen gaan mensen uit de praktijk en wetenschap ervan uit dat diversiteit van het personeelsbestand, dat wil zeggen variatie in kenmerken van werknemers zoals geslacht, leeftijd of opleiding (Knippenberg et al., 2007), binnen een organisatie het concurrentievoordeel oplevert, omdat het leidt tot verschillende ideeën en meer creativiteit (Hülsheger et al., 2009; Nederveen Pieterse et al., 2013). Het is belangrijk dat verschillende perspectieven vertegenwoordigd zijn in teams om te voorkomen dat individuen de meningen van de groep volgen zonder alternatieven te overwegen. Bijvoorbeeld, als in een team, dat werkt aan een gezichtsherkenningstechnologie, medewerkers met allemaal dezelfde demografische kenmerken en opleidingsachtergronden werken, kunnen ze met vergelijkbare ideeën komen, wat resulteert in eentonige oplossingen. Studies tonen aan dat gezichtsherkenningstechnologieën minder accuraat zijn voor vrouwen en mensen van kleur, wat waarschijnlijk te wijten is aan het gebrek aan diversiteit in het ontwikkelingsteam. Als het team divers is en mensen met verschillende levenservaringen bevat, is de kans groter dat ze met verschillende ideeën komen en de beste technologische oplossing vinden.

Ondanks deze positieve aanname zijn de effecten van diversiteit in teams onvoldoende onderzocht en weten we nog onvoldoende of mensen in diverse teams zich beter kunnen ontwikkelen en daardoor gezonder en productiever zijn (Jaiswal & Dyaram, 2019; van Knippenberg et al., 2020). Sommige onderzoeken ondersteunen de aanname dat diversiteit positieve effecten heeft, terwijl andere negatieve resultaten hebben gevonden (bijvoorbeeld conflicten; Joshi & Roh, 2009; Van Dijk et al., 2012). Bovendien worstelen STEM organisaties nog steeds met het succesvol vergroten van diversiteit onder hun personeel. Het personeelsbestand in STEM organisaties is overwegend homogeen en heeft vergelijkbare kenmerken (Fry et al., 2021). In de afgelopen decennia hebben minderheidsgroepen (bijv. vrouwen of etnische minderheden) langzaam toegang gekregen tot de STEM sector, maar er blijft een aanzienlijke kloof bestaan (Eagly, 2021; Holman et al., 2018). Een vraag is wat kunnen bedrijven doen om de diversiteit van hun personeelsbestand efficiënt te vergroten en toegang te bieden aan minderheidsgroepen? En als bedrijven succesvol zijn geweest, hoe kunnen ze dan profiteren van de diversiteit van hun personeelsbestand?

Om te profiteren van de diversiteit van het personeelsbestand, is er aandacht besteed aan de inclusiebenadering (bijv. Shore et al., 2018). Onderzoekers stellen dat werknemers die een sterker gevoel hebben erbij te horen en hun uniekheid waarderen,

eerder bereid zijn en meer vertrouwen hebben om verschillende perspectieven te delen en constructief samen te werken aan innovatieve oplossingen (Nembhard & Edmondson, 2006; Leroy et al., 2021). Dit proefschrift onderzoekt daarom hoe STEM organisaties de diversiteit en inclusie van hun personeelsbestand kunnen verbeteren. In het bijzonder ben ik geïnteresseerd in hoe verschillende achtergronden en perspectieven efficiënt kunnen leiden tot betere uitkomsten voor individuen (bijv. gezondheid, gevoelens en prestaties) en de mate waarin werknemers actief kunnen participeren in het managen van diversiteit en inclusie. In deze context heb ik vijf onderzoeksprojecten uitgevoerd die hebben geleid tot de afzonderlijke hoofdstukken van dit boek. De volgende hoofdstukken bevatten een samenvatting van de belangrijkste bevindingen op basis van vier centrale onderzoeksvragen.

Onderzoeksvraag 1: Als er sprake is van diversiteit in het personeelsbestand, zijn werknemers die meer inclusie ervaren gezonder en productiever, omdat ze beter in staat zijn om hulpbronnen op de werkplek te gebruiken en om te gaan met uitdagende werkproblemen?

Om een antwoord op deze vraag te kunnen geven, heb ik eerst een literatuuronderzoek uitgevoerd en een conceptueel model opgesteld, dat in **Hoofdstuk 2** wordt gepresenteerd. Over het algemeen suggereert het model dat meer inclusie leidt tot betere prestaties en meer welzijn, omdat aan de persoonlijke behoeften van werknemers wordt voldaan en ze zichzelf kunnen zijn op het werk. Het is echter belangrijk om te benadrukken dat de perceptie van de werkomgeving van werknemers invloed heeft op hoe inclusief ze zich voelen op het werk. Als we de werkcontext in STEM organisaties nader bekijken, zien we dat vrouwen en andere minderheden (bijvoorbeeld buitenlanders of ouders van jonge kinderen) ondervertegenwoordigd zijn in het personeelsbestand (Eagly, 2021). Wanneer bedrijfsbeleid en dagelijkse werkrituelen voornamelijk gericht zijn op de behoeften van de meerderheidsgroep, kunnen werknemers uit minderheidsgroepen te maken krijgen met ongunstige werkomstandigheden. Voorbeelden hiervan zijn dagelijkse vergaderingen om 8.00 uur, die onhandig zijn voor ouders van jonge kinderen, of de lunchpauze om 12.00 uur, die voortkomt uit de Nederlandse cultuur en ongebruikelijk kan zijn voor werknemers met een andere culturele achtergrond. Werkomstandigheden hebben dus invloed op de mate waarin werknemers zich erbij horen en gewaardeerd voelen vanwege hun individuele kenmerken, en dat is waar het bij inclusie om gaat. Als een gevolg daarvan kunnen minderheidsgroepen minder inclusie ervaren, wat leidt tot lagere prestaties en welzijn.

Hoofdstuk 3 van het proefschrift is gericht op de medewerkers percepties van de

werkomgeving aan een STEM universiteit. Ik onderzocht hoe diversiteit en inclusie de prestaties en het welzijn van medewerkers beïnvloeden. De resultaten laten zien dat werknemers in een diverse werkomgeving die veel stress op het werk ervaarden (bijv. conflicten tussen hun persoonlijke en professionele leven) zich desondanks nog steeds beter verbonden voelden aan hun organisatie zolang ze zich inclusief voelden. Inclusie had dus een beschermend effect op werknemers. Maar ongeacht inclusie leidden stressvolle werkervaringen altijd tot emotionele uitputting, een voorbode van een burn-out. In **Hoofdstuk 4** onderzocht ik de impact van een leiderschapsstijl die inclusie op de werkplek bevordert. Hiervoor zijn managers en hun medewerkers van Duitse en Nederlandse STEM bedrijven bevraagd. Ik vond dat vooral in meer diverse omgevingen een inclusieve leiderschapsstijl leidde tot betere prestaties van werknemers. Dit zou het gevolg kunnen zijn van het feit dat een inclusieve leider diverse mensen helpt goed samen te werken en informatie effectief te delen.

Over het algemeen toonden de onderzoeken aan dat het belangrijk is om de impact van diversiteit en inclusie niet geïsoleerd te bekijken. Om te begrijpen hoe diversiteit werknemers en bedrijven beïnvloedt, moeten we ook rekening houden met andere factoren zoals werkeisen of de invloed van leiderschap. De bevindingen benadrukken het potentieel van inclusie om negatieve werkervaringen te verzachten. In STEM organisaties die streven naar meer diversiteit in hun personeelsbestand om meer innovatie te genereren, is het gevoel erbij te horen cruciaal voor de productiviteit en het welzijn van werknemers.

Onderzoeksvraag 2: Hoe kunnen STEM organisaties het gevoel van inclusie onder werknemers vergroten?

Hoofdstuk 2 beschrijft dat bedrijven een inclusieve werkplek kunnen creëren door middelen aan te bieden (bijv. ondersteuning) en extreme werkeisen te verminderen. Werknemers beoordelen hun inclusie in het bedrijf meestal op basis van signalen uit hun werkomgeving, zoals de eisen en middelen die ze ontvangen. Als bedrijven middelen zoals sociale steun en een eerlijke behandeling aanbieden aan alle werknemers, voelen werknemers zich gewaardeerd en opgenomen. Deze middelen stellen werknemers in staat om hun behoeften te uiten, proactief om te gaan met uitdagingen op het werk, toegang te krijgen tot informatie en deel te nemen aan besluitvormingsprocessen. Zich gewaardeerd en gesteund voelen leidt tot een sterk gevoel van inclusie onder werknemers. Daarentegen kunnen werknemers die lijden onder de gevolgen van hoge werkeisen (bv. stress of hoofdpijn) hun omgeving als minder geschikt voor hen ervaren, en hun gevoel van inclusie daalt. **Hoofdstuk 4** laat zien dat inclusief leiderschap

inclusieve werkplekken stimuleert waar werknemers bereid zijn om verschillende informatie te delen. Wanneer werknemers hun leiders als inclusief ervaren, zijn ze meer bereid om feedback en advies te vragen aan hun leiders, en zijn ze meer gemotiveerd om hun collega's te helpen. Bedrijven kunnen daarom een inclusieve leiderschapsstijl stimuleren om een sterker gevoel van saamhorigheid en waardering voor hun uniekheid te creëren onder hun werknemers. **Hoofdstuk 5** beschrijft de impact van een inclusieve zelftrainingssessie aan een STEM universiteit, bedoeld om zelfexpressie en sociale interactie onder nieuwe promovendi aan te moedigen. Gedurende vijf opeenvolgende weken werden de deelnemers getraind in het opbouwen van relaties met collega's en supervisors, het begrijpen van (in)formele werkprocessen, netwerken, het zoeken naar hulpbronnen en het gebruiken van hun persoonlijke sterke punten. De resultaten suggereren dat nieuwelingen getraind kunnen worden in het verwerven van kennis, zoals informatie over hun werkomgeving en collega's. De training droeg er ook toe bij dat de nieuwelingen zich meer op hun gemak voelden. De nieuwe PhD-studenten hadden het gevoel dat ze zichzelf mochten zijn en dat ze daarvoor gewaardeerd werden. Ze ervoeren ook meer steun van hun collega's.

Samenvattend toont dit proefschrift aan dat het creëren van een inclusieve omgeving een gezamenlijke taak is waarbij medewerkers van verschillende organisatieniveaus betrokken zijn. Organisaties, managers en werknemers zelf kunnen inclusie beïnvloeden. Organisaties moeten regelmatig de werkvereisten en middelen van hun werknemers herzien. Organisaties kunnen inclusie ook bevorderen door extreem hoge eisen op de werkplek te verminderen en middelen aan te bieden zoals inclusief leiderschap. Daarnaast voelen promovendi die een goede begeleiding middels onboarding hadden in hun eerste weken op hun nieuwe werkplek zich meer geaccepteerd en gesteund door collega's en supervisors.

Onderzoeksvraag 3: Hoe kunnen STEM organisaties de diversiteit van hun personeelsbestand vergroten?

Een divers personeelsbestand kan STEM organisaties een concurrentievoordeel opleveren. Bovendien zijn bedrijven verantwoordelijk voor het creëren van gelijke kansen voor iedereen en het voorkomen van discriminatie. Daarom is het voor organisaties interessant om te weten welke diversiteitsmaatregelen ze kunnen toepassen en welke effecten deze hebben op hun personeelsbestand. Er zijn echter maar weinig studies die diversiteitsbeleid in STEM organisaties onderzoeken en aantonen dat ze minderheidsgroepen met succes toegang bieden tot het bedrijf. Ook de bredere effecten van deze maatregelen zijn onvoldoende onderzocht. **Hoofdstuk 2** stelt dat gelukkige,

gezonde en productieve werknemers een inclusieve werkomgeving kunnen creëren die op lange termijn een divers personeelsbestand aantrekt en behoudt. Werknemers die gemotiveerd zijn, zijn meer betrokken bij hun bedrijf en hebben een sterker gevoel erbij te horen. Ze zijn ook geneigd om een werkomgeving te accepteren die verschillen en individualiteit waardeert, wat resulteert in een meer respectvolle werkomgeving met minder discriminatie en intimidatie.

Onderzoek toont aan dat bedrijven door het bevorderen van inclusie een positieve employer branding kunnen creëren die diverse mensen aantrekt die geloven dat hun unieke achtergronden en vaardigheden worden gewaardeerd. **Hoofdstuk 6** laat echter zien dat radicale gelijkheidsprogramma's die vrouwelijke sollicitanten bevoordelen ten opzichte van mannelijke sollicitanten niet altijd het gewenste resultaat bereiken. Door deze radicale maatregelen kan interne- en externe weerstand ontstaan, wat de implementatie en uiteindelijk de effecten van de maatregelen beïnvloedt. Observaties toonden aan dat een maatregel die gericht was op het aanwerven van alleen vrouwelijke wetenschappers, resulteerde in een genderevenwichtige (bijna 50/50) aanwervingsgraad van vrouwen en mannen. Het onderzoek toont aan dat veel werknemers vooroordelen hebben over zo'n radicale maatregel. Ze denken bijvoorbeeld dat vrouwen negatieve gevolgen kunnen ervaren omdat binnen het bedrijf aangenomen zou kunnen worden dat de vrouwen werden aangenomen op basis van hun geslacht en niet op basis van hun competenties. Deze vooroordelen beïnvloedden managers in hun pogingen om vrouwelijke kandidaten te vinden. Uit het onderzoek bleek ook dat een grotere betrokkenheid van de directie en senior managers werknemers aanmoedigde om innovatieve manieren van rekruteren toe te passen om vrouwelijke kandidaten te vinden.

Samengevat kan het creëren van een inclusief klimaat in organisaties helpen om werknemers met verschillende achtergronden aan te trekken en te behouden. Radicale maatregelen voor gendergelijkheid zijn weliswaar niet zonder problemen, maar maken over het algemeen duidelijk dat het management gelijkheid als prioriteit ziet. Radicale benaderingen kunnen meer vrouwelijk talent aantrekken en het bewustzijn van genderkwesties vergroten, vooral als leiders zich inzetten om genderkwesties in de STEM sector aan te pakken.

Onderzoeksvraag 4: Hoe kunnen werknemers bijdragen aan het verbeteren van diversiteit en inclusie in STEM organisaties?

Recent onderzoek heeft zich vooral gericht op wat organisaties en leiders kunnen doen om diverse en inclusieve werkplekken te creëren. De vraag hoe werknemers zelf kunnen bijdragen aan diversiteit en inclusie in de organisatie is echter onvoldoende onderzocht.

In **Hoofdstuk 4** is vastgesteld dat het gedrag van werknemers een significante invloed heeft op de mate waarin inclusief leiderschap leidt tot betere individuele taakprestaties. Wanneer medewerkers inclusief leiderschap ervaarden, presteerden ze beter, deels omdat ze werden aangemoedigd om hulpbronnen zoals informatie en hulp te delen met hun managers en collega's. In **Hoofdstuk 5** zijn specifieke gedragingen onderzocht van nieuwe werknemers tijdens het inwerkproces en is gebleken dat deze gedragingen invloed hadden op de hoeveel informatie die ze actief opnamen en verwerkten om door de nieuwe organisatie te navigeren. Nieuwe medewerkers die de werkprocessen beter begrepen door deze kennisabsorptie voelden zich uiteindelijk meer gesteund en gewaardeerd door hun collega's. **Hoofdstuk 6** toont aan dat de implementatie van een radicaal gendergelijkheidsbeleid afhangt van het effectieve implementatiegedrag van het personeel. Werknemers die gemotiveerd waren om de diversiteit te vergroten en het belang van het beleid inzagen, waren eerder geneigd om actief vrouwelijke sollicitanten te zoeken en nieuwe manieren te zoeken om meer vrouwen aan te nemen. De steun en inzet van het senior management beïnvloedt de wervingsinspanningen van belanghebbenden in dit opzicht.

Dit proefschrift levert bewijs dat individuele werknemers en hun gedrag van invloed kunnen zijn op inspanningen op het gebied van diversiteit en inclusie in STEM organisaties. Daarom moet rekening worden gehouden met het gedrag van werknemers bij het ontwerpen van diversiteit- en inclusie-initiatieven in organisaties. Verder onderzoek in de STEM sector zou zich daarom moeten richten op de volgende vragen: Hoe reageren werknemers op specifieke initiatieven die diversiteit en inclusie proberen te bevorderen? Hoe stimuleren we werknemers om zich inclusiever te gedragen en hoe ziet dit inclusieve gedrag er eigenlijk uit? Hoe kunnen we allemaal bijdragen aan een meer inclusieve werkomgeving waarin iedereen zichzelf mag zijn en we ieders diversiteit kunnen gebruiken om productiever en gezonder te zijn in ons werk?

Summary in German

Die STEM-Branche (Science, Technology, Engineering, Math; auf Deutsch: Wissenschaft, Technologie, Ingenieurwesen und Mathematik) ist ein wissensintensives Arbeitsumfeld, das sich schnell verändert (Smit et al., 2020). Um zu überleben, müssen STEM-Organisationen anpassungsfähig sein und mit der Innovation in diesem Bereich Schritt halten. Allgemein gehen Praktizierende und Forschende davon aus, dass die Diversität der Belegschaft, d. h. die Variation von Mitarbeitermerkmalen wie Geschlecht, Alter oder Bildungshintergrund (Knippenberg et al., 2007), innerhalb einer Organisation den Wettbewerbsvorteil verbessert, da sie zu vielfältigen Perspektiven und mehr Kreativität führt (Hülsheger et al., 2009; Nederveen Pieterse et al., 2013). Es ist wichtig, dass in Teams unterschiedliche Sichtweisen vertreten sind, um zu verhindern, dass Einzelpersonen den Meinungen der Gruppe folgen, ohne Alternativen in Betracht zu ziehen. Wenn beispielsweise die Datenwissenschaftler/-in eines Teams, die an einer Gesichtserkennungstechnologie arbeiten, alle ähnliche demografische Merkmale und einen ähnlichen Bildungshintergrund haben, könnten sie auf ähnliche Ideen kommen, was zu einseitigen Produkten führt. Studien zeigen, dass Gesichtserkennungstechnologien bei Frauen und farbigen Personen unpräziser sind, was wahrscheinlich auf die mangelnde Vielfalt im Entwicklungsteam zurückzuführen ist (einseitige Daten, auf denen die Gesichtserkennungstechnologie basiert). Wenn das Team vielfältig ist und Menschen mit unterschiedlichen Lebenserfahrungen umfasst, ist es wahrscheinlicher, dass sie eine Vielzahl von Ideen einbringen und die beste technische Lösung finden.

Trotz dieser positiven Annahme sind die Auswirkungen von Diversität in Teams noch nicht ausreichend untersucht und wissen wir noch unzureichend darüber, ob Menschen in vielfältigen Teams sich besser entfalten können und darum gesünder und produktiver sind (Jaiswal & Dyaram, 2019; van Knippenberg et al., 2020). Einige Studien unterstützen die Annahme, dass Diversität positive Auswirkungen hat, während andere negative Resultate gefunden haben (z. B. Konflikte; Joshi & Roh, 2009; Van Dijk et al., 2012). Darüber hinaus tun sich STEM-Organisationen nach wie vor schwer, die Vielfalt unter ihren Mitarbeitenden erfolgreich zu erhöhen. Die Belegschaften in STEM-Organisationen sind überwiegend homogen und weisen ähnliche Merkmale auf (Fry et al., 2021). In den letzten Jahrzehnten haben sich Minderheitengruppen (z. B. Frauen oder ethnische Minderheiten) langsam Zugang zum STEM-Bereich verschafft, aber es besteht nach wie vor eine erhebliche Diskrepanz (Eagly, 2021; Holman et al., 2018). Was können Unternehmen also tun, um die Vielfalt ihrer Belegschaft effizient zu erhöhen und Minderheitsgruppen Zugang zum Unternehmen zu ermöglichen? Und wenn Unternehmen erfolgreich waren, wie können sie dann von der Vielfalt der Belegschaft profitieren? Um von der Vielfalt der Belegschaft zu profitieren, wurde dem Ansatz der

Inklusion Aufmerksamkeit geschenkt (z. B. Shore et al., 2018). Forscher argumentieren, dass Mitarbeitende, die ein stärkeres Gefühl der Zugehörigkeit und der Wertschätzung ihrer Einzigartigkeit haben, eher bereit sind und sich sicherer fühlen, unterschiedliche Perspektiven auszutauschen und konstruktiv an innovativen Lösungen mitzuarbeiten (Nembhard & Edmondson, 2006; Leroy et al., 2021). In dieser Doktoarbeit wird daher untersucht, wie STEM-Organisationen die Vielfalt und Inklusion ihrer Belegschaft verbessern können. Dabei interessiere ich mich insbesondere dafür, wie unterschiedliche Hintergründe und Perspektiven effizient zu besseren Ergebnissen für den Einzelnen führen können (z. B. Gesundheit, Empfinden und Leistung) und inwieweit sich die Mitarbeitenden aktiv am Management von Vielfalt und Inklusion beteiligen können. In diesem Zusammenhang habe ich fünf Forschungsprojekte durchgeführt, die zu den einzelnen Kapiteln dieses Buches geführt haben. Die nachfolgenden Abschnitte umfassen eine Zusammenfassung der wichtigsten Ergebnisse auf der Grundlage von vier zentralen Forschungsfragen.

Forschungsfrage 1: Sind Mitarbeitende, die mehr Inklusion erfahren in Unternehmen mit einer diversen Belegschaft, gesünder und produktiver, da sie besser in der Lage sind die Ressourcen am Arbeitsplatz zu nutzen und mit anspruchsvollen Arbeitsaspekten umzugehen?

Um eine aufschlussreiche Antwort zu geben, habe ich zunächst eine Literaturanalyse durchgeführt und ein konzeptionelles Modell erstellt, das in **Kapitel 2** vorgestellt wird. Insgesamt legt das Modell nahe, dass mehr Inklusion zu besserer Leistung und Wohlbefinden führt, weil die persönlichen Bedürfnisse der Mitarbeiter befriedigt werden und sie bei der Arbeit sie selbst sein können. Es ist jedoch wichtig zu betonen, dass die Wahrnehmung des Arbeitsumfelds einen Einfluss darauf hat, wie stark eine Person bei der Arbeit Inklusion erfährt. Wenn wir den Arbeitskontext in STEM-Organisationen näher betrachten, sehen wir, dass Frauen und andere Minderheiten (z. B. Ausländer oder Eltern von kleinen Kindern) in der Belegschaft unterrepräsentiert sind (Eagly, 2021). Wenn sich die Unternehmenspolitik und die täglichen Arbeitsrituale in erster Linie an den Bedürfnissen der Mehrheitsgruppe orientiert, können Mitarbeitende, die einer Minderheit angehören, mit ungünstigen Arbeitsbedingungen konfrontiert werden. Beispiele dafür sind tägliche Meetings um 8.00 Uhr, die für Eltern kleiner Kinder ungünstig sind, oder die Mittagspause um 12.00 Uhr, die aus der niederländischen Kultur stammt und für Arbeitnehmende mit anderem kulturellen Hintergrund unüblich sein kann. Die Arbeitsbedingungen wirken sich also darauf aus, inwieweit sich Mitarbeitende zugehörig fühlen und geschätzt für ihre individuellen Eigenschaften, was Inklusion

ausmacht. Dementsprechend können Minderheitsgruppen weniger Inklusion erfahren, was zu geringerer Leistung und Wohlbefinden führt.

Kapitel 3 der Doktorarbeit befasste sich mit der Wahrnehmung der Arbeitsumgebung von Mitarbeitenden in einer STEM-Universität. Ich habe untersucht wie sich Diversität und Inklusion auf die Leistung und das Wohlbefinden der Mitarbeitenden auswirken. Die Ergebnisse zeigen, dass Stress bei der Arbeit (z. B. Konflikte zwischen ihrem Privat- und ihrem Berufsleben) einen geringeren negativen Einfluss auf die Miterarbeiterbindung zu der Organisation hatte, wenn Mitarbeitende Inklusion wahrnahmen bei hoher Diversität in ihrem Arbeitsumfeld. Inklusion hatte also einen schützenden Effekt für Mitarbeitende. Unabhängig von Inklusion, führten stressige Arbeitserfahrungen jedoch immer zu emotionaler Erschöpfung, einem Vorboten des Burnouts. In **Kapitel 4** habe ich die Auswirkungen eines Führungsstils untersucht, der die Inklusion am Arbeitsplatz fördert. Zu diesem Zweck wurden Führungskräfte und ihre Mitarbeitenden aus deutschen und niederländischen STEM-Unternehmen befragt. Ich fand heraus, dass besonders in vielfältigeren Umfeldern ein inklusiver Führungsstil zu besserer Leistung der Mitarbeitenden führte. Dies könnte darauf zurückzuführen sein, dass eine inklusive Führungskraft dazu beiträgt, dass unterschiedliche Menschen gut zusammenarbeiten und Informationen effektiv austauschen.

Insgesamt zeigten die Studien, dass es wichtig ist, den Einfluss von Diversität und Inklusion nicht in Isolation zu betrachten. Um zu verstehen, wie sich Vielfalt auf Mitarbeitende und Unternehmen auswirkt, müssen wir auch andere Faktoren wie Arbeitsanforderungen oder den Einfluss der Führungskraft berücksichtigen. Die Ergebnisse unterstreichen das Potenzial von Inklusion negative Arbeitserfahrung abzuschwächen. In STEM-Organisationen, die das Ziel verfolgen, die Diversität der Belegschaft zu vergrößern, um mehr Innovation zu generieren, ist das Gefühl, einbezogen zu sein, entscheidend für die Produktivität und das Wohlbefinden der Mitarbeitenden.

Forschungsfrage 2: Wie können STEM-Organisationen das Gefühl der Inklusion von Mitarbeitenden fördern?

In **Kapitel 2** wird erörtert, dass Unternehmen einen inklusiven Arbeitsplatz schaffen können, indem sie Ressourcen (z.B. Unterstützung) anbieten und extreme Arbeitsanforderungen reduzieren. Die Mitarbeitenden beurteilen ihre Integration in das Unternehmen in der Regel anhand von Hinweisen aus ihrem Arbeitsumfeld, wie den Anforderungen und Ressourcen, die sie erhalten. Wenn Unternehmen allen Mitarbeitenden Ressourcen wie soziale Unterstützung und faire Behandlung bieten, fühlen sich die Mitarbeitende wertgeschätzt und einbezogen. Diese Ressourcen ermöglichen es

den Mitarbeitenden ihre Bedürfnisse zu äußern, Arbeitsherausforderungen proaktiv zu bewältigen, Zugang zu Informationen zu erhalten und sich an Entscheidungsprozessen zu beteiligen. Wertschätzung und Unterstützung führen zu einem starken Gefühl dvon Inklusion. Im Gegensatz dazu können Mitarbeitende, die unter den Folgen hoher Arbeitsanforderungen leiden (z. B. Stress oder Kopfschmerzen), ihr Umfeld als weniger geeignet für sich wahrnehmen, und ihr Gefühl der Zugehörigkeit und der geschätzten Einzigartigkeit nimmt ab. **Kapitel 4** zeigt, dass eine inklusive Führung Arbeitsplätze schafft, an denen die Belegschaft bereitwillig unterschiedliche Informationen austauscht. Wenn Mitarbeitende ihre Führungskräfte als inklusive wahrnehmen, sind sie eher bereit, Feedback und Rat von ihren Führungskräften einzuholen, und sie sind motivierter, ihren Kollegen zu helfen. Unternehmen können bei ihren Mitarbeitenden ein stärkeres Gefühl der Zugehörigkeit und der Wertschätzung ihrer Einzigartigkeit erzeugen, in dem sie einen inklusiven Führungsstil fördern. **Kapitel 5** beschreibt die Auswirkungen eines Eingliederungs-Selbsttrainings an einer STEM-Universität, das den Selbstverwirklichung und die soziale Interaktion neuer Doktoranden fördern sollte. In fünf aufeinanderfolgenden Wochen wurden die Teilnehmenden darin geschult, Beziehungen zu Kollegen und Vorgesetzten aufzubauen, (un)formale Arbeitsabläufe zu verstehen, Netzwerke zu knüpfen, Ressourcen zu suchen und ihre persönlichen Stärken zu nutzen. Die Ergebnisse deuten darauf hin, dass Neuankömmlinge stimmuliert werden können, sich Wissen efizient anzueignen und zu reflektieren, was dazu beiträgt, dass sich die Neuankömmlinge wohler fühlen an ihrem neuen Arbeitsplatz. Die neuen Doktoranden hatten das Gefühl, dass sie sich selbst sein durften und dafür geschätzt wurden. Sie erfuhren auch mehr Unterstützung von ihren Kollegen.

Zusammenfassend zeigt diese Doktorarbeit, dass die Schaffung eines inklusiven Umfeldes eine gemeinschaftliche Aufgabe ist, an der Mitwirkende aus verschiedenen Organisationsebenen beteiligt sind. Organisationsspitzen, die mittlere Führungsebene und Mitarbeitende selbst können die Inklusion beeinflussen. Unternehmen müssen die Arbeitsanforderungen und Ressourcen ihrer Belegschaft regelmäßig überprüfen, stressvolle Anforderungen am Arbeitsplatz reduzieren und Ressourcen wie eine inklusive Führung anbieten. Außerdem fühlen sich Doktoranden, die sich in den ersten Wochen an ihrem neuen Arbeitsplatz proaktiv verhalten, von Kollegen und Vorgesetzten stärker akzeptiert und unterstützt.

Forschungsfrage 3: Wie können STEM-Organisationen die Vielfalt ihrer Belegschaft erhöhen?

Eine vielfältige Belegschaft kann STEM-Organisationen einen Wettbewerbsvorteil

verschaffen. Außerdem sind Unternehmen dafür verantwortlich, Chancengleichheit für alle zu schaffen und Diskriminierung zu verhindern. Daher ist es für Organisationen interessant zu wissen welche Diversitätsmaßnahmen sie anwenden können und welche Effekte diese auf ihre Belegschaft haben. Es gibt jedoch nur wenige Studien, die Diversitätsmaßnahmen in STEM-Organisationen untersuchen und aufzeigen, dass diese erfolgreich Minderheitsgruppen Zugang zum Unternehmen bieten. Auch sind die weiteren Effekte von diesen Maßnahmen niet ausreichrecht erforscht. In **Kapitel 2** wird argumentiert, dass zufriedene, gesunde und produktive Mitarbeitende ein inklusives Arbeitsumfeld schaffen können, das langfristig eine vielfältige Belegschaft anzieht und bindet. Mitarbeitende, die motiviert sind, engagieren sich stärker für ihr Unternehmen und haben ein stärkeres Zugehörigkeitsgefühl. Sie neigen auch dazu, ein Arbeitsumfeld zu akzeptieren, das Unterschiede und Individualität wertschätzt, was zu einem respektvolleren Arbeitsplatz mit weniger Diskriminierung und Belästigung führt.

Forschungen zeigen, dass Unternehmen durch die Förderung der Inklusion ein positives Employer-Branding schaffen können, das unterschiedliche Personen anzieht, die glauben, dass ihre einzigartigen Hintergründe und Fähigkeiten geschätzt werden. **Kapitel 6** zeigt jedoch auf, dass radikale Gleichstellungsprogramme, die weibliche Bewerberinnen gegenüber männlichen bevorzugen, nicht immer das gewünschte Ergebnis der Gleichstellung erzielen. Diese radikalen Maßnahmen, können auf internen und externen Widerstand stoßen, was sich auf die Umsetzung und letztlich auf die Ergebnisse der Maßnahmen auswirkt. Die Beobachtungen ergaben, dass eine Maßnahme, die darauf abzielte, nur weibliche Akademikerinnen einzustellen, zu einer geschlechtsspezifisch ausgewogenen (fast 50/50) Einstellungsquote von Frauen und Männern führte. Die Studie zeigt, dass viele Mitarbeitenden Vorurteile bezüglich so einer radikalen Maßnahme haben. Sie denken zum Beispiel, dass Frauen negative Konsequenzen fürchten müssen, weil innerhalb des Unternehmens angenommen werden könnte, dass die Frauen auf Basis ihres Geschlechts und nicht ihrer Qualifikation eingestellt wurden. Diese Vorurteile beeinflussten Führungskräfte in ihrem Bestreben weibliche Kandidaten zu finden. Die Studie zeigte auch auf, dass ein größeres Engagement der höheren Führungsebene Mitarbeitende ermutigte, um innovative Wege der Mitarbeitersuche einzuschlagen, um weibliche Kandidatinnen zu finden.

Zusammenfassend lässt sich sagen, dass die Schaffung eines inklusiven Klimas in Organisationen dazu beitragen kann, Mitarbeitende mit unterschiedlichem Hintergrund anzuziehen und zu halten. Radikale Maßnahmen zur Gleichstellung der Geschlechter sind zwar nicht unproblematisch, machen aber insgesamt deutlich, dass die Unternehmensführung die Gleichstellung als eine Priorität ansieht. Radikale Ansätze können mehr weibliche Talente anziehen und das Bewusstsein für geschlechtsspezifische

Fragen schärfen, vor allem, wenn sich die Führungskräfte dazu verpflichten, die geschlechtsspezifischen Probleme in der STEM-Branche anzugehen.

Forschungsfrage 4: Wie können Arbeitnehmende zur Verbesserung von Vielfalt und Integration in STEM-Organisationen beitragen?

Die jüngste Forschung konzentrierte sich bisher hauptsächlich darauf, was Organisationen und Führungskräfte tun können, um vielfältige und inklusive Unternehmen zu schaffen. Die Frage, wie die Mitarbeitenden selbst zur Diversität und Inklusion beitragen können, wurde jedoch nicht ausreichend untersucht. **Kapitel 4** stellte fest, dass das Verhalten von Mitarbeitenden maßgeblich beeinflusst in welchem Ausmaß eine inklusive Führung zu einer besseren individuellen Aufgabenerfüllung führt. Wenn Mitarbeitende eine inklusive Führung erfuhren, erbrachten sie bessere Leistungen, unter anderem weil sie dadurch ermutigt wurden, Ressourcen wie Informationen und Hilfe mit ihren Führungskräften und Kollegen zu teilen. **Kapitel 5** untersuchte spezifische Verhaltensweisen neuer Mitarbeitenden im Eingliederungsprozess und stellte fest, dass diese Verhaltensweisen einen Einfluss darauf hatten, wie viele Informationen sie aktiv aufnahmen und verarbeiteten, um sich in der neuen Organisation zurechtzufinden. Neue Mitarbeitende, die durch diese Wissensaufnahme die Arbeitsabläufe besser verstanden, fühlten sich schlussendlich von ihren Kollegen stärker unterstützt und wertgeschätzt. **Kapitel 6** zeigte, dass die Umsetzung einer radikalen Gleichstellungspolitik vom effektiven Umsetzungsverhalten der Mitarbeitenden abhängt. Mitarbeitende, die motiviert waren, die Vielfalt zu erhöhen, und die die Bedeutung der Politik erkannten, suchten eher aktiv nach weiblichen Bewerbern und suchten neue Wege, um mehr Frauen anzunehmen. Die Unterstützung und das Engagement der oberen Führungsebene beeinflusst hierbei die Einstellungsbemühungen der Beteiligten.

Diese Doktorarbeit liefert den Beweis, dass einzelne Mitarbeiter und ihr Verhalten die Bemühungen um Diversität und Inklusion in STEM-Organisationen beeinflussen können. Daher sollte das Verhalten der Mitarbeitende bei der Gestaltung von Initiativen zur Förderung von Diversität und Inklusion in Unternehmen berücksichtigt werden. Die weitere Forschung in der STEM-Branche sollte sich darum mit den folgenden Fragen auseinander setzen: Wie reagieren Mitarbeitende auf bestimmte Initiativen, die die Diversität und Inklusion vorantreiben wollen? Wie stimulieren wir Mitarbeitende sich inklusiver zu verhalten und wie sieht dieses inklusive Verhalten eigentlich aus? Wie können wir alle zusammen zu einem inklusiveren Arbeitsklima beitragen, in dem jeder sich selbst sein darf, und wir die Vielfalt eines jeden nutzen können, um produktiver und gesünder unserer Arbeit nach zu gehen?

About the Author

Janna Heynen-Behnke was born in Westerland, Germany, on October 4th, 1989. She obtained a Bachelor's degree in Sports Management at Leipzig University in 2013 and a Master's degree in Human Resource Studies from Tilburg University (the Netherlands) in 2018. In between, Janna spent one-and-a-half years in the United States and gained valuable international experiences.

In 2018, Janna started her doctoral project at Eindhoven University of Technology. Her research within the Human Management Performance research group at the Department of Industrial Engineering and Innovation Sciences aimed to investigate which factors contribute to successfully managing workforce diversity in STEM organizations. The research emphasized the role of leadership and employees' proactive behaviors in fostering an inclusive organizational climate. In addition, Janna developed, implemented, and evaluated diversity and inclusion interventions that focused on employees' daily processes and interactions with co-workers and supervisors.

Janna presented her work at various European *Work and Organizational Psychology* and *Diversity and Inclusion* conferences (e.g., European Academy of Occupational Health Conference in Lissabon, 2018; European Association of Work and Occupational Psychology Conference in Turin, 2019; Equality Diversity Inclusion Conference in Bern, 2021). Moreover, during her time as a doctoral candidate, Janna engaged in a variety of activities to benefit young academics. She became a board member of pHResh (the Ph.D. association of the Dutch HRM network) and initiated a Benelux network for Ph.D.s working on EDI topics. In addition, she organized a symposium, "Navigating in diverse work environments: Valuable top-down and bottom-up approaches," at the European Association of Work and Occupational Psychology Conference in Katowice (2023), where she broad together young international scholars from the research field.

In March 2023, Janna started her new job as a Learning & Development Specialist at Eindhoven University of Technology. She enjoys the opportunity to combine her curiosity for workplace phenomena concerning diversity and inclusion, leadership, and employee well-being. Janna designs, implements, and monitors HR practices, learning opportunities, and development programs in her new function. She adds to the positive organizational change at the University with the aim that employees feel belonging and valued for their unique contributions.