Navigating Neurodiversity

An Exploratory Approach to Sustaining Engagement Among Managers of Neurodivergent Employees

by

Nora Scheidler & Madeleine Sällström

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Abstract

In the last few decades, the neurodiversity movement has fought for the wider acceptance and destigmatization of previously pathologized neurological conditions, such as autism, attention deficit hyperactivity disorder, dyspraxia, dyslexia, dyscalculia, and Tourette syndrome.   Increased recognition of the unique skills possessed by neurodivergent individuals, combined with the pressure to take on social responsibility, has increased organizations' desire to hire neurodivergent employees.   However, the diversity initiatives aimed at accommodating the needs of neurodivergent individuals have been noted to disregard the emotional needs of their managers.   This exploratory study therefore aims to research how managers can be supported in retaining their work engagement while dealing with the additional organizational demands imposed on them, when managing neurodivergent employees.

Multiple supporting factors for managers of neurodivergent employees were identified through reviewing existing literature, and complemented by a qualitative expert survey.   The degree of correlation of the various factors to the engagement levels of the managers were subsequently tested, using a quantitative survey consisting of a sample of 13 managers of neurodivergent employees. In addition, the managers' perceptions of the supporting factors' value, as well as their managerial experience and their own neurodivergence, were assessed, in order to enable further analysis of their benefits.

The research indicates that some of the supporting factors seem to correlate with higher engagement levels among the participating managers, partially confirming the main hypothesis of the study.   However, the additional hypotheses of the study, assuming that managerial experience and a managers' own neurodivergence would correlate positively with their engagement levels, were indicated not to be true. Furthermore, a connection between managers ensuring psychological safety and neurodivergent individuals disclosing their diagnosis was indicated, providing a potential improvement in order to reduce the apparent toll which reluctance to disclose their diagnosis seems to take on managers. These results are only indicative and not statistically significant, yet they present a starting point for further research.

KEYWORDS: Neurodiversity, Diversity, Inclusion, Management, Diversity Management, Engagement

Acknowledgements

List of Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
ASD	Autism Spectrum Disorder
CSR	Corporate Social Responsibility
DM	Diversity Management
EL	Emotional Labor
HRM	Human Resource Management
ND	Neurodivergent
NT	Neurotypical
TS	Tourette Syndrome
UWES-9	Utrecht Work Engagement Scale (9-item version)
UWES-17	Utrecht Work Engagement Scale (17-item version)

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1 Introduction

This study begins with the introductory chapter, explaining the background, problem area, and purpose of the study. It also includes the research questions, the demarcations, and an outline of the thesis.

1.1 Background

Neurodiversity is a term that might not be known by all, but it is not a new phenomenon. In fact, the term was coined before the turn of the century by Singer (1998). Despite not being familiar with the term of neurodiversity, most people have probably heard about the various diagnoses which are covered by the umbrella term, such as autism, attention deficit hyperactivity disorder (ADHD), dyslexia, and many more (Singer, 1999).

Historically, individuals who are neurodivergent (ND) have faced a lot of hardships, discrimination, and unemployment or underemployment, mainly due to stereotypes regarding their personalities and capabilities (Austin & Pisano, 2017; Krzeminska, Austin, Bruyère & Hedley, 2019). The unemployment rate among individuals with autism spectrum disorder (ASD), for example, is estimated to be as high as 50-70%, not only among the more severely impacted, as those considered highly functioning also have problems holding a job for an extended amount of time (Hendricks, 2010). A recent study performed by Sparkes, Riley, Cook and Machuel (2022) show that only 22% of autistic people in the UK are employed as of right now, in the beginning of year 2022.

Common characteristics of ND individuals, such as impaired interpersonal communication skills, desire for structure, feelings of anxiety about change, or difficulty focusing on tasks perceived as mundane, can prove to be challenging for them in the workplace (Austin & Pisano, 2017; Morris, Begel & Wiedermann, 2015). In addition, the workplace presents auditory and visual distractions, such as noise and harsh lights, or software-based interruptions, which many ND individuals struggle to navigate (Austin & Pisano, 2017; Morris, Begel & Wiedermann, 2015). These challenges have barred a lot of ND individuals from employment, due to organizations traditionally being unwilling to attempt to overcome or adapt to them, which, in turn, has led to them missing out on the benefits ND employees can bring (Austin & Pisano, 2017; Krzeminska et al., 2019).

Having an increased affinity for a multitude of diverse skills, often not possessed by neurotypical (NT) individuals, ND individuals can bring unique value to the workplace (Austin & Pisano, 2017; Krzeminska et al., 2019). For example, individuals on the autism spectrum often possess a distinct eye for detail, pattern recognition, a willingness to perform

repetitive labor, and remarkable reliability and timeliness (Hillier, Campbell, Mastriani, Izzo, Kool-Tucker, Cherry & Beversdorf, 2007). Additionally, autistic individuals often commonly obtain special interests (Klin, Danovitch, Merz & Volkmar, 2007), which allow them to gain outstanding expertise in particular topics (Parr, Hunter & Ligon, 2013). Individuals with ADHD often display higher levels of creativity and divergent thinking than NT individuals (Boot, Nevicka & Baas, 2017), while those with dyslexia often exhibit superior visual, spatial, interconnected, narrative, and dynamic reasoning (Craine, 2020; Eide & Eide, 2012). An additional factor boosting the benefits for hiring ND employees is the increase in an organization's corporate social responsibility (CSR), its brand image, and reputation overall (Austin & Pisano, 2017; Krzeminska et al., 2019; Loiacono & Ren, 2018). Despite the many benefits outweighing most of the challenges, organizations often struggle to include neurodivergent employees into the workplace (Krzeminska et al., 2019).

The development and growth of the neurodiversity movement, which aims to destigmatize neurodiversity, together with the increasing importance of diversity, equality, inclusion, acceptance, and sustainability for employees and organizations alike, is generating a lot of change when it comes to the opportunities for ND individuals (Austin & Pisano, 2017; Kapp, 2020; Krzeminska et al., 2019; Loiacono & Ren, 2018; Sparkes et al., 2022). Combined with rapid technological changes, possibilities which previously have been unimaginable for ND individuals are increasing continuously (Austin & Pisano, 2017; Krzeminska et al., 2019; Loiacono & Ren, 2018; Walkowiak, 2021). Realizing the major benefits the inclusion of ND employees can bring, while simultaneously facing skill shortages in certain complex areas - which are highly suitable for various ND individuals, due to their enhanced abilities in areas such as pattern recognition and analyzing - some organizations have started neurodiversity programs to increase their possibilities of reaping these benefits (Austin & Pisano, 2017; Krzeminska et al., 2019).

As neurodiversity programs grow in popularity, and companies encourage potential applicants, and current employees, to "come out" as ND in order to better be able to support them and adapt to their needs, individuals are gradually starting to become more open, disclosing their conditions to their employers (Austin & Pisano, 2017; IBM, 2022b; Krzeminska et al., 2019). Various measures, from improving the working environment, to facilitating specific tasks, are being implemented for ND individuals, following goals and regulations regarding inclusion, equality, and disability support (Austin & Pisano, 2017; Craine, 2020; Krzeminska et al., 2019; Sparkes et al., 2022).

Several companies, such as Microsoft, SAP, EY, and IBM, have come a long way when it comes to embracing neurodiversity, establishing validity for the benefits brought by ND individuals, creating programs for adaptation and inclusion (Austin & Pisano, 2017;

Krzeminska et al., 2019). Technological companies have long been in the forefront when it comes to embracing ND individuals (Austin & Pisano, 2017). This is mostly due to the fact that the tasks performed by employees in this industry are especially well suited for the previously mentioned, specific strengths often possessed by ND individuals. Austin and Pisano (2017) also hypothesize that it is an industry historically accepting of "nerds" and individuals who are a little odd. This value is echoed in Apple's famous ad campaign "Think Different" in the late 90s, which was created by, and dedicated to, those who are different:

> "Here's to the crazy ones. The misfits. [...] The round pegs in the square holes.
> The ones who see things differently.
> They're not fond of rules. And they have no respect for the status quo. [...]
> They change things. [...] They push the human race forward.
> Maybe they have to be crazy.
> How else can you stare at an empty canvas and see a work of art? [...]
> We make tools for these kinds of people.
> While some see them as the crazy ones, we see genius.
> Because the people who are crazy enough to think they can change the world, are the
> ones who do." (Siltanen, 2011, n.p.)

The idea for above mentioned ad campaign originated from IBM's ad slogan "Think IBM", which referred to one of their main products, the ThinkPad laptop (Siltanen, 2011). Although this was a complete accident, IBM has a long history with neurodiversity, going all the way back to their founder, Herman Hollerith (Williams, 2021). Hollerith, who was believed to be dyslectic, built a tabulating machine to count the 1890 US Census, and founded Hollerith's Tabulating Machine Co., which was merged with other computing companies working to automate routine business transactions, forming a single company which later became IBM, International Business Machines (Williams, 2021).

IBM remains one of the largest technological companies in the world, and their neurodiversity program is one of the largest ones as well (Austin & Pisano, 2017). IBM values all ND identities for the benefits they bring, rather than viewing them as diseases to be cured (IBM, 2022a), and therefore celebrates Neurodiversity Month (IBM, 2022a) in April, rather than calling it Autism Awareness Month, as many others. As the definition of the scope of this study happened to align with this month, as well as the program being one of the foremost ones, the neurodiversity program at IBM was selected as a main point of reference in order to illustrate what neurodiversity campaigns can entail, identify supporting factors for managers and obtain additional practical information.

The neurodiversity program at IBM officially started as an initiative by only two people back in 2015 (IBM, 2022b; Williams, 2020; Williams, 2021), but grew rapidly from there. The launch of the "Autism as a skill" Business Research Group (BRG), was soon followed by a collaboration with the Specialisterne Foundation to re-write the IBM hiring process (Williams, 2021). Launching several pilots worldwide in 2017, and in 2018, the Autism as a skill BRG was rebranded to the ND@IBM BRG (IBM, 2022b; Williams, 2021), re-aligning with the motto "Nothing About Us, Without Us", in the process, bringing focus back to the voices of ND individuals (Williams, 2021) and emphasizing that it is vital for them to be included in the decision-making process and setting guidelines, not just have it decided for them by others, regardless of how well-intended the allies are (Lyckowski, 2022).

In the years since, IBM has introduced several taskforces and initiatives to create safe environments for ND individuals, as well as releasing the ND education bundle, ND101, and implementing the globally aligned ND@IBM Program in 2020, hiring individuals for the neurodiversity program in eleven countries and enabling talent in over 20 countries (IBM, 2022b). The neurodiversity ally badge, which employees can earn for learning about neurodiversity and display on their LinkedIn profile (Credly, 2020), is another example of the implementation of a small digital token having a large impact, leading to thousands of IBM employees taking courses to learn more about neurodiversity, thereby further enabling the integration and acceptance of ND employees, leading to the possibility of reaping the benefits of inclusion and engagement (Williams, 2021). As a whole, IBM believes that the road to advancement builds on the following three key components (IBM, 2022b; Williams, 2020; Williams, 2021):

1. Enablement of all employees
2. Become more inclusive
3. Hiring neurodivergent talent

1.2 Problem area

Few can argue with the positive changes and improvements implicated for ND individuals, and it seems logical that all organizations should strive to reach the same level of inclusiveness and support, especially considering the many benefits they are proven to bring (Austin & Pisano, 2017). However, this is not the case. One reason for this is most certainly the fact that the neurodiversity movement is relatively new, and therefore not universally known, another that it takes time and financial resources. For example, employers may need to implement customized changes in order to accommodate and ultimately retain their neurodivergent talent, such as allowing for more flexible schedules, providing quiet spaces or

noise-cancelling headphones, and presenting instructions or agendas in written instead of verbal form (Loiacono & Ren, 2018). Furthermore, these accommodations presuppose that neurodivergent employees disclose their neurodiversity to managers or employers to begin with, something history has made them reluctant to do, and therefore often only happens if they feel a personal connection to their manager, or feel safe enough to not fear judgment and discrimination (Morris, Begel & Wiedermann, 2015).

Yet another reason could be that neurodiversity initiatives increase the responsibility and work of the managers of ND employees (Austin & Pisano, 2017; Richards, Sang, Marks & Gill, 2019). Historically, organizations have a tendency of wanting to put people into a "one-size-fits-all" box, where employees should do their work according to standard and disregard any other qualities or initiatives, making them fairly easy to manage (Austin & Pisano, 2017; Drucker, 2001). Encouraging people to step out of this box and share their differences requires managers to adapt the standardized processes and ensure everything still works, essentially forcing a lot of responsibility, and workload, on them (Austin & Pisano, 2017; Richards et al., 2019). A study conducted by Richards et al. (2019) shows that integrating ND individuals requires adjustments and interactions that often prove to be complex, laborious and emotionally draining for the ND individual's manager, team, HR department and occupational health practitioner. Richards et al. (2019) further explain how some managers, line managers in particular, are not always equipped to handle human resource management (HRM) practices in general, and establish that it requires high levels of emotional labor (EL). Richards et al. (2019) conclude that awareness and preparation of the required EL when managing ND individuals were instrumental in order for the experience to be positive, or even neutral, rather than draining, frustrating, and bordering on a risk to personal health in the form of burnout.

According to Schaufeli, Bakker and Salanova (2006), the polar opposite of burnout is work engagement, with engaged employees feeling energetically and effectively connected with their work activities, perceiving themselves to be able to keep up with the demands put on them. Additionally, Schaufeli, Bakker and Salanova (2006) propose that engagement and burnout factors correlate negatively to one another, giving rise to the assumption that if organizations can keep their managers engaged, they will be less likely to experience burnout. Despite a growing body of research on employee engagement, there is little research on how to build and sustain engagement among managers in particular, and it is uncertain if the findings gained from research about employee engagement can be applied directly to them, considering that they have different responsibilities and demands than non-managerial employees.

The increased demands on organizations and managers alike apply to all types of diversity, and differently abled individuals, as evidenced by extensive diversity management (DM) programs (Syed & Tariq, 2017), as well as equal opportunity, disability, and anti-discrimination legislature (Government Offices of Sweden, 2015; The European Commission, 2022; The UK Government, 2010).

1.3 Research questions

The above description of the problem proposes the importance of an organization taking their managers' needs into consideration when implementing a neurodiversity program, in order to keep the increased responsibility and workload from impacting their level of engagement. Focusing on managers of ND employees, this study asks the following questions:

> **RQ 1:** *To what degree do the supporting factors correlate positively with engagement levels?*
>
> **RQ 2:** *How valuable do managers perceive the supporting factors to be, in relation to sustaining their engagement levels?*

1.4 Purpose

As far as could be deducted, there is no research on engagement levels among managers of ND employees in particular, nor on what impacts it positively, which poses a research gap. Furthermore, while there is an increasing, but still limited, body of research dedicated to the accommodations needed to support ND individuals, increasing their inclusion and opportunities, there is little research available on how to support managers and their well-being in this endeavour. Almost all research shows the lack of comprehensive information on the topic of neurodiversity in the workplace, and some, such as Richards et al. (2019), explicitly encourage further research on the topic, providing numeral suggestions. Krzeminska et al. (2019) emphasize the urgent need to identify ways of transforming employment practices and making them more inclusive. Their special issue on the topic of neurodiversity talent management and employment was published with the sole intent of encouraging further generalization and systematization of knowledge, so that it might find its way into management programs (Krzeminska et al., 2019).

Additionally, Drucker (2001, p."v") calls his entire book about management challenges *"a Call for Action"*, stating that it is a time of radical change, which requires proactive initiatives and systemic changes through the reversal of policies that so far have worked well; that individuals

and organizations alike need to change their mindsets. Despite the fact that his book was written at the turn of the century, this still rings true today, which is why this study aims to contribute to further changes, if only by a small amount. Austin and Pisano (2017) second the request for reformed business practices, mainly within HR, and Natalia Lyckowski (2022, n.p.), Co-Chair of the Neurodiversity@IBM Global BRG, advises business leaders to *"...shift the conversation from passive awareness to actionable acceptance"*, encouraging organizations to take an active role in ensuring that the ND community is not only considered, but respected and represented in key positions, embodying the motto "Nothing About Us, Without Us", (IBM, 2022b; Lyckowski, 2022).

Therefore, the purpose of this study is to explore the under-researched relationship between supporting factors implemented by organizations and the levels of work engagement among managers, when faced with handling the individual needs of ND employees. Focusing on the day-to-day work in a general office, it aims to identify factors that can be implemented by organizations in order to support their managers when working with ND employees, to give an indication of which of these factors are effective, and perceived most valuable for increasing managerial engagement. Thus, it is meant to be an exploratory study, to create a starting point for further, large-scale research on the topic, and to offer some suggestions on which supporting factors seem to hold a promise for positively influencing managerial engagement, and thereby warrant more in-depth research. By providing evidence-based, albeit small-scaled, research, this study assists in promoting the continuous progression of neurodiversity initiatives, by producing suggestions to overcoming some of the challenges of integrating ND talent into organizations, as encouraged by Krzeminska et al. (2019).

1.5 Demarcations

The topics of neurodiversity and management are very broad, and they both have strong relations to other topics. Therefore, in order to retain the scope, quite a few demarcations were made to this study, the main ones of which are presented below in table 1. All aspects that were deselected are considered possible foundations for further research, and as such, most of them will be presented in that section of the conclusion.

To limit the scope of this study, there were three main categories of demarcations, regarding: the topic itself, the perspective of various people, and the context in which the first two were analysed, which was further broken down into the phase of work.

	Topic	People	Context	Phase
Selected:	Neurodiversity	Managers of ND employees	Managerial engagement	Day-to-day
Deselected:	Intersectionality (cross-benefits for other minorities)	Co-workers/ other impacted employees	Profitability etc. (wider benefits for the organization)	Talent Acquisition & hiring processes
	Change management/ resistance to change	ND employees themselves	Legislature & regulations	Promotions/ change of position

Table 1: Demarcations

Most of the de-selected options are mentioned in the study, since they often overlap or connect to one another, but they were not the main focus. These intersectional encounters are the reason why the alternative options were considered for selection in the first place, but in the end were deemed to be too far outside of the scope.

Considering the topic of neurodiversity to begin with, it is obviously a type of diversity, meaning something that diverges from the societal norm. Since one type of diversity does not exclude another, there is often a high degree of intersectionality regarding this topic (Syed & Tariq, 2017). For example, a majority of all ND females are treated differently than their male counterparts, and those who are younger are treated differently than those who are older (Craine, 2020). This means that those who are already struggling with acceptance, inclusion, and equal rights in society, such as those with different skin colors, sexual orientation, or gender identities, are even more impacted, since their multitude of "identities" can potentially "stack up" to make them feel excluded from their already limited circle of inclusion. However, the opposite can also be true, because when people become more aware of the needs of one individual, and see the result of how to communicate with them in order to be reciprocated, it often affects more than just the single individual or occasion; several sources mention the fact that neurodiversity initiatives have not only benefited the isolated business unit, but the company as a whole benefited from the positive impact which came from listening and adapting to the needs of the individual (Austin & Pisano, 2017; Craine, 2020; Kapp, 2020; Krzeminska et al., 2019; Richards et al., 2019; Williams, 2021).

Transitioning to the connection between neurodiversity and change management, the implementation of a new program brings a lot of changes, which potentially stir up a lot of emotions. Not mentioning the very real possibility of resistance to change and other aspects of change management, such as anchoring, training, culture, or involvement (Aguirre & Alpern, 2014; Cameron & Green, 2019), would be highly negligent. However, since the concept of change management is vast, and the scope of this study needs to be contained, it is addressed here instead. As previously mentioned, many of the aspects of change management will be included in the study, but the entirety of the concept will not, and some parts of it, despite their importance, will be disregarded.

When it comes to the people, this study focuses on the perspective of the manager, partly because it is a thesis in management, but also because of the belief that every involved party needs to be taken into consideration, and as mentioned in the background, problem area and purpose, there is a lack of research focusing on what managers need in order to provide ND individuals with what they need, and how to make sure their engagement levels are sustained. This, in turn, is linked to the context of wider benefits for the organization, such as profit margins or talent retention (WTW, 2014), which will not be covered in detail in this study. The study will also not research the impact on any other employees or co-workers of ND individuals, or the perspective of ND employees themselves (other than when the managers responding to the survey also happen to be ND). Although these are all perspectives that would need to be taken into consideration in a real-life context, it is simply beyond the scope of this study to include them all.

Regarding context, this study specifically focuses on the impact managing ND employees has on managerial engagement levels, and no other potentially correlating factors for either the manager, employee, or organization as a whole are covered. The concept of engagement was chosen over the concept of job satisfaction, as it entails the manager's commitment to attribute to their organization's success, in addition to their own satisfaction (Erickson, 2005). Additionally, there is a lot of legislature and regulations when it comes to anti-discrimination, disability rights, equality and much more, such as the Swedish Discrimination Act (Government Offices of Sweden, 2015) and the UK Equality Act (The UK Government, 2010), which are both partly based on various non-discrimination acts within the EU, and the Charter of Human Rights (The European Commission, 2022). Some of these will be briefly mentioned, but no deeper analysis of the requirements organizations face when it comes to enabling their employees will be performed.

Finally, the study mainly paid attention to the daily tasks of managers of ND employees, not specifically considering talent acquisition (TA) or hiring processes, on-boarding, changing positions, going on, or coming back from, a leave of absence etc. Hiring processes can typically

be very difficult for ND individuals (Austin & Pisano, 2017; Krzeminska et al., 2019; Williams, 2020), and are therefore mentioned several times throughout the study, however this does not constitute any central part of the study. Change management has already been mentioned, but in this case, the deselected option does not concern the process of change in its entirety, but rather the set of tasks which would accompany the specific phase of work when transitioning between two roles within an organization, dealing with a new set of tasks, and likely new people as well. Hence, this is more regarding the change in position of one individual and the impacts it has on those closest to them, not organizational change. This phase of work is briefly mentioned from the manager's perspective when it comes to managerial challenges and taking over an existing team, but, as all the mentioned demarcations, it is not the main focus of the study. The perspective of an ND employee changing positions and the various challenges or potential benefits it may entail for the individual, their manager, their business unit, or the entire organization, is not mentioned in any extent.

1.6 Outline of the thesis

This study is divided into six chapters. The first one introduces the topic by presenting the background, followed by the problem area, research questions, purpose, and demarcations. The second chapter contains the literature review, presenting the various theoretical concepts and explaining the topics in further detail. The chapter ends with the presentation of the analytical framework, which serves as a map of the study, showing the connections between the various areas and topics covered. Chapter three is the method, which explains the research design and various steps of the approach to gathering the results for our empirical study. The fourth chapter then presents said results, while the fifth chapter contains the discussion and analysis of the results from the empirical data, in combination with the literature review. The sixth, and final, chapter contains the conclusions of the study, as well as suggestions for further research and practical recommendations on the topic.

2 Literature review

This chapter contains the theoretical concepts that this study is built upon and critically examines them. The concepts are connected to form a research model that will act as a foundation for the conceptualization, analysis and interpretation of the conducted research.

2.1 Diversity

In broad terms, diversity can be "any attribute people use to tell themselves that another person is different" (Williams & O'Reilly III, 1998, p. 81). Factors distinguishing individuals may be their gender, sexual orientation, ethnicity, religion, culture, age, or disability (Ivancevich & Gilbert, 2000; Syed & Tariq, 2017) as well as neurodiversity (Singer, 1999). Cunningham and Sagas (2004) differentiate between surface-level diversity and deep-level diversity: while surface-level diversity is visible, as for example variations in ethnicity or age, deep-level diversity describes differences within, such as values or attitudes. The concept of diversity does not only describe these individual and group differences but also includes a call for accepting, respecting, embracing and celebrating them (Patrick & Kumar, 2012).

2.1.1 Diversity Management

With the reduction of geographic boundaries due to economic and technological developments, as well as human and civil rights advances, the workforce has become more heterogenous and continues to do so, increasing the need for organizations to understand and manage the differences between human resources (Roberson, 2019). Thus, organizations implement diversity management, which can be defined as "a set of organizational policies and practices aimed at recruiting, retaining, and managing employees of diverse backgrounds and identities and creating a structure in which everybody is equally enabled to perform and achieve organizational objectives and personal development" (Syed & Tariq, 2017, n.p.).

While some authors emphasize that diversity management should be implemented out of a moral imperative and in order to fulfill an organization's corporate social responsibility (CSR) (Gotsis & Kortezi, 2013; Lozano & Escrich, 2017), many of the arguments made for diversity are centered around its business case, proposing that differences between individuals can provide value to an organization (Fischer, 2009; Herring, 2009; Robinson & Dechant, 1997). According to Williams and O'Reilly III (1998), diversity can increase the overall amount of knowledge, perspectives and ideas of employees, leading to improved creative processes and decision making and ultimately higher performance. A McKinsey

report (Hunt, Layton & Prince, 2015) reveals that diversity can be a valuable asset in counteracting skill shortage, strengthening customer orientation, increasing employee satisfaction, improving organizational image and increasing financial performance. In addition, it can be a source of creativity and innovation (Bassett-Jones, 2005; Østergaard, Timmermans & Kristinsson, 2011) and foster a trusting work climate which is positively related to employee engagement (Downey, Werff, Thomas & Plaut, 2015).

Despite the many proposed benefits, diversity must be examined critically. Team diversity and the resulting variety of perspectives can give rise to conflict and distrust (Díaz-García, González-Moreno & Jose Sáez-Martínez, 2013) or even discrimination and prejudice (Patrick & Kumar, 2012), which lead to reductions in communication and integration (Williams & O'Reilly III, 1998). Research on the overall benefit or detriment of diversity in organizations is inconclusive, and researchers call for distinguishing between different kinds of diversity and the contexts they take place in, instead of making blanket statements about general diversity effects (Baron, 1988; Mannix & Neale, 2005).

The mere presence of diverse perspectives and knowledge does not lead to improved output (Faraj & Sproull, 2000); instead, diversity must be carefully managed and harnessed. Essentially, implementing and establishing diversity is a change process and as such requires research, effort and prioritization, just as any other change management initiative (Hunt, Layton & Prince, 2015). According to Dobbin and Kalev (2016), many diversity programs fail due to unsuitable measures, such as mandatory diversity trainings, inconsistent job applicant testing or HRM grievance systems. More effective measures include voluntary diversity training, self-managed teams, cross-functional training, mentoring programs, diversity managers (Dobbin & Kalev, 2016) as well as diversity networks (Benschop, Holgersson, Van den Brink & Wahl, 2015).

2.1.2 Neurodiversity

Neurodiversity is an umbrella term that entails a variety of neurological conditions, most commonly including ASD, ADHD, dyspraxia, dyslexia, dyscalculia and Tourette syndrome (TS) (Singer, 1999). However, the concept is not formally defined and is often expanded to incorporate a number of other conditions such as, but not limited to, epilepsy, mania, depression, hallucination, prosopagnosia, migraine and synesthesia (Tougaw, 2018). The exact prevalence of neurodiversity in the population is unclear and depends on which conditions are included in the definition. One study estimates that the combined prevalence of ASD, ADHD, dyslexia, dyscalculia and dyspraxia could be as high as 10 - 15% (Ekblad, 2013), while the DSM-5 states that ADHD occurs in about 2.5% of the adult population, ASD in 1% and specific learning disorders including dyslexia and dyscalculia in 4% (APA, 2013).

The term neurodiversity was coined by the autistic sociologist Judy Singer (1998) who described the phenomenon of people with marginalized and pathologized conditions such as ASD and ADHD forming communities and advocating for themselves, thus, creating a new social movement. This neurodiversity movement, or paradigm, divides ND individuals from those fitting the neurological "norm", so-called neurotypicals (Singer, 1998), and states that while they socialize, communicate or experience the world differently (Ortega, 2009), they do not suffer from pathological, problematic conditions but rather display natural variations in human minds (Taylor & Grandin, 2021). A supporting argument for this view is a growing body of research that suggests neurological differences may have led to evolutionary advantages and continue to do so (Brüne, Belsky, Fabrega, Feierman, Gilbert, Glantz, Polimeni, Price, Sanjuan, Sullivan et al., 2012).

The conceptual frameworks of the medical and social models of disability help explain the neurodiversity movement and how it aims to change the experience of ND individuals. The medical model of disability defines disability as an individual problem that arises from impaired bodies being limited in their functions and perceives this limitation as undesirable and in need of being cured (Swain, French & Cameron, 2003). It places great importance on the diagnosis and treatment of disabilities (Krcek, 2013). Similarly, the medical community defines and pathologizes ND conditions like ASD and ADHD as neurodevelopmental disorders (APA, 2013) that are sought to be diagnosed and treated. The treatment, cure and prevention of autism in particular are popular fields of research yet highly disputed in regards to their ethics (Bovell, 2020).

The social model of disability on the other hand states that disability is not the inherent limitation of an individual but instead arises from the interaction of society with the individual: by othering and failing to accommodate to disabled individuals, society disables them (Krcek, 2013). Therefore, the social model of disability takes a critical stance toward the medical model, condemning the pathologization of disabilities and advocating for the rights of disabled individuals to speak up against their social exclusion (Swain, French & Cameron, 2003). The social model of disability acts as the basis for the neurodiversity movement's claims that neurological diversity does not equal impairment or shortcomings (Krcek, 2013). Instead, it seeks to represent neurodiversity as a naturally occurring diversity in humans, similar to other political categories such as race or gender (Singer, 1999).

While its demands for inclusion and rights are widely supported, the concept of neurodiversity is highly controversial. Common critical arguments against the neurodiversity movement are that it does not establish a clear definition of who is meant to be included in the term neurodiversity or that it fails to take into account the potential needs and wishes for treatment or cure of those who are more strongly impaired (Russell, 2020).

2.1.3 Managerial challenges

Managers handle complexity, while leaders handle change, according to Kotter (2001). He also mentions that one individual can be both, but in order to do so, they need to be aware of the difference, and how to cope with both. Mintzberg (2011), on the other hand, claims that the two occur in symbiosis, and that one should not be present without the other, which increases the challenges of being a manager, having to cope with both change and complexity simultaneously. Mintzberg (2011) additionally presents the conundrums of managing, explaining paradoxes managers face on a daily basis, acknowledging that although none of them can be overcome, they can be reconciled. One such conundrum is making autonomous decisions, such as adapting to individual employer needs, while dealing with regulations and expectations from the organization (Mintzberg, 2011), presenting a particular challenge when managing employees who might require various accommodations. The abilities to plan, organize, and solve problems are all important when it comes to managing, however, these mostly tackle short-term issues, while the ability to promote a common vision, aligning people around it, motivating and inspiring them to reach common goals, can generate long-term benefits (Kotter, 2001). Some personal traits, behavioral habits, and knowledge can be considered extra beneficial for managers to possess, in order to consolidate various challenges, a central one being communication and the ability to connect with other people, since it increases the ability to both identify and reconcile possible situations that need attention, but also since it builds trust (Kotter, 2001), which is one of the main steps in creating a psychologically safe environment (Watkins, 2016).

A psychologically safe environment encourages the expression of divergent thoughts and ideas, promoting open and honest communication (Watkins, 2016). Transparency in sharing information reduces complexity, making it easier to approach potential situations, it also reduces the risk of unconscious bias forming due to speculation, while simultaneously promoting diversity through counteracting shared information bias (Baker, 2010). Due to the above mentioned reasons, promoting psychological safety is instrumental in making the job of a manager easier, since the lack of it can generate a plethora of managerial challenges. A scenario discussed by Watkins (2016) extends the relevance even further: most managers do not get to pick their team members and start from a clean slate, but rather have to deal with many past experiences and existing culture among their teams, which is yet another challenge requiring communication, trust, and psychological safety to reconcile.

Management and manager are very broad terms which encompass a lot of different meanings, making it difficult to identify challenges for all potential managers, however, most of them apply to what is popularly referred to as "middle managers" (Mintzberg, 2011). These managers often face the challenge of either having too much, or too little, responsibilities in relation

to their capabilities in performing various tasks, for example not being allowed to approve certain requests for employees, while being expected to approve them by their managers in turn. Richards et al. (2019) also mentions that middle managers are expected to take on more HRM responsibilities, without confirming that they possess the required knowledge and ability to do so, which creates a challenge in most cases.

In addition to all the challenges mentioned above, the most all-encompassing one is that which is stated by Drucker (2001), regarding the belief that *"There is one right way to manage people"* (Drucker, 2001, p.17), going all the way back to Frederick Taylor in 1912, when he coined the term "Management" (Burnes, 1996; Drucker, 2001; Kiechel, 2012). This is a statement which has been disproved many times, and Drucker (2001) himself, the inventor of the modern concept of management (Kiechel, 2012), admits to being wrong about it after being presented with the updated *Maslow on Management*, showing that different people have to be managed differently, due to their different needs (Drucker, 2001). However, the assumption of there being one right way to manage people is firmly held on to by many, if not always consciously (Drucker, 2001). Austin and Pisano (2017) also states that the cause behind the lack of organizations tapping neurodiverse talents is the absolute conformity to a standardized approach, which is generally not inclusive towards ND individuals.

In response to the type of changes referred to by Drucker (2001), Burnes (1996) suggests that managing requires a more dynamic approach, *Organizational learning*, where change is driven from the bottom-up, and is viewed a continuous process, requiring constant adaptation. This introduces yet another degree of complexity into management, creating another challenge for managers to handle, being flexible and adaptive, (Burnes, 1996), also requiring open communication, sharing, and learning. All of which are factors that will enable them to make use of diverse talent, to interpret and process different information (Burnes, 1996).

2.2 Engagement

There is no agreed upon definition of engagement, which has led academic researchers and practitioners to use the term inconsistently and for a variety of psychological states, traits or behaviors (Macey & Schneider, 2008). Kahn (1990) describes engagement as behaviors in which organizational members bring in their selves into work roles, expressing themselves physically, cognitively and emotionally, while Harter, Schmidt and Hayes (2002) characterize engagement as the involvement, satisfaction and enthusiasm an individual attributes to their work. The arguably most commonly used measure of engagement is the Utrecht Work Engagement Scale, which exists in a 9-item and 17-item version (UWES-9 or

UWES-17, depicted in appendix D) and defines engagement as a "positive, fulfilling, work-related state of mind" that is made up of the dimensions vigor, dedication, and absorption (Schaufeli, Bakker & Salanova, 2006, p.702). Thus, an engaged employee experiences high levels of energy, significance and enthusiasm, is willing to put in effort and persist when it gets challenging, and is fully engrossed in their work to the point where they find it hard to detach themselves from it (Schaufeli, Bakker & Salanova, 2006).

Despite the fact that work engagement is often equated to the concept of job satisfaction, Erickson (2005) draws an important distinction between the two, stating that engagement surpasses the simple satisfaction that employees may feel about their work and moreover includes the commitment to attribute to the employers success. According to Schaufeli, Bakker and Salanova (2006), engagement, also referred to as *work engagement* or *employee engagement*, is a persistent affective-cognitive state rather than a passing affection. Sonnentag, Dormann, Demerouti et al. (2010) however claim that, despite its relative stability, engagement exhibits fluctuations in the short-term.

Engaged employees can be of significant benefit for organizations. Engagement has been shown to positively impact employees and their attitudes, well-being and proactive job behaviors (Bakker & Schaufeli, 2008). It is associated with improved customer satisfaction and loyalty, productivity, turnover levels and productivity (Harter, Schmidt & Hayes, 2002), as well as increased individual and organizational performance (Bakker & Schaufeli, 2008).

While work engagement has been of significant interest for both researchers and practitioners in the past decades (Saks & Gruman, 2014), the engagement levels among employees are comparably low. A study conducted by WTW (2012), which comprises the attitudes of over 32,000 employees of more than 1,600 companies globally, shows that only 35% of these employees are highly engaged. It further reveals that 22% of employees are unsupported, meaning that they are traditionally engaged, but lack the enablement for sustainable engagement, while 17% of employees are detached, meaning that they feel supported, but lack a sense of traditional engagement. Lastly, the study shows that 26% of employees are disengaged. According to Harter, Schmidt and Hayes (2002), employees experience engagement when they know the expectations directed at them, possess the means to fulfill their responsibilities, have opportunities to improve and develop, feel fulfillment in their role, and perceive that they are leaving an impact being part of something significant along with colleagues they trust. In addition, they feel capable of managing the demands that are put on them (Schaufeli & Enzmann, 1998). A meta-analysis conducted by Knight, Patterson and Dawson (2017) identified, and analyzed, the effect of organizational interventions targeted at increasing employee engagement based on 20

studies. They identified four main types of interventions: personal resource building interventions to increase self-perceived positive attributes, job resources building interventions to increase resources in the work environment, leadership training interventions to increase the employees' managers' knowledge and skills, and health promoting interventions to encourage employees to live healthier lifestyles and decrease stress (Knight, Patterson & Dawson, 2017). Despite the meta-analysis finding that overall, the interventions had a positive, reliable effect on employee engagement, it was unable to compare the individual interventions' effects in a meaningful, reliable way due to the small number and method heterogeneity of studies, leaving the question, which interventions to implement for the highest effect, unanswered (Knight, Patterson & Dawson, 2017). Although leadership is proven to play a role in the engagement of employees (Knight, Patterson & Dawson, 2017), there is little research to be found regarding the engagement of managers in particular. While managers can be viewed as employees themselves, their additional personnel responsibilities potentially create additional parameters that could impact their level of engagement, which are not taken into account during the assessment.

2.3 Analytical framework

The analytical framework, depicted on top of the symbol for neurodiversity in Figure 1 below, provides a map of the study, illustrating the connections between the various topics, theories, and variables explored throughout. The mapped items form a coherent framework for analysis, by which the research can then be navigated.

The study has its origin in three parts: Diversity Management, managerial challenges in general, as well as neurodiversity specifically, which together make up the theoretical framework. These topics are then combined with the independent variables of the study, mainly the supporting factors, and they are compared through the lens of engagement. This comparison aims to determine the potential value and correlations the independent variables have with engagement levels among managers of ND employees. These results will present the variables with the highest correlations, and highest perceived value, answering the research questions posed for the study.

Since the topic of neurodiversity is relatively new (Kapp, 2020), the decision to use connections to DM and managerial challenges in general was made, to attempt to bridge the research gap. These two topics largely overlap with the topic at hand, since neurodiversity is a type of diversity, and managing it can be considered a challenge for the manager, due to the fact that it is not generally covered in the training and responsibilities of most managers (Richards et al., 2019).
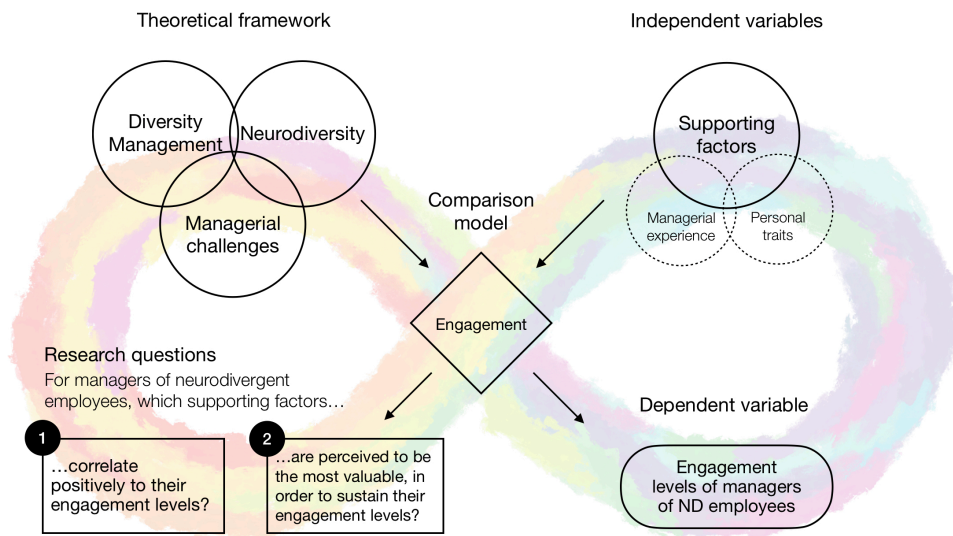
Figure 1: Analytical Framework

This prompts the question of which actions can be taken in order to easen the burden for the managers in the aforementioned position. Which is why this study focuses on which factors the managers' engagement levels are most dependent on, and which ones are needed to help them gain the capacity to manage ND employees sustainably. Having this capacity hopefully allows the creation of more opportunities for ND individuals, allowing organizations to partake in the many benefits they bring. Because of this, the main independent variable of the study is the measured supporting factors, accompanied by the secondary variables, experience and personal traits of the manager. Since supporting factors generally can be seen as a faster, and easier, way of generating impact and value, rather than waiting for managers to gain years of experience, and they are more tangible than personal traits, they were selected as the main variable. In order to narrow the scope and create a focus for the study, the model of engagement was selected to act as a point of convergence between the theoretical framework and the independent variables. This choice was made since engagement is a main factor for organizations when evaluating employee experience and well-being, but it is even more important to understand the drivers of engagement, as stated by (WTW, 2014).

In conclusion, the analysis of the gathered empirical data aims to gauge the engagement levels among managers of ND employees. Through measuring the correlation between the presence of the independent variables and the engagement scores, the factors with the closest relationship will be identified, answering the first research question. Additionally, the perceived value of the measured factors will be discussed through connecting the data to the theories on DM and managerial challenges in general, thereby providing an answer to the second research question as well.

3 Method

This chapter reviews the method of research of the study; from the research design, the context and respondent selection, and the conduction of the surveys, to the data processing method, the quality of the research, and the ethical principles behind it.

3.1 Research Design

The seven-step hypothetico-deductive method, a version of the scientific method (Bougie & Sekaran, 2019), was used in order to create the methodological frame for this study. It was chosen due to its systematic approach for generating knowledge, which is useful for solving managerial problems, as opposed to the more traditional scientific approach, which was developed for solving problems within the natural sciences (Bougie & Sekaran, 2019). Because of the intended use, the application of the scientific method to social and business research has been objected to multiple times, which was another reason why the choice to use the hypothetico-deductive approach seemed more appropriate (Bougie & Sekaran, 2019).

3.1.1 Identifying the broad problem area

The original aim of this study was to focus on diversity management in some form and then, based on personal experience of one of the researchers, the topic of neurodiversity and management was brought to focus. Upon identifying this broad problem area, it was immediately noticeable that it had immense potential, as described in the background. Mainly, this is due to the lack of research on the topic of neurodiversity, since it is relatively new.

3.1.2 Defining the problem statement

After the problem area had been broadly identified, a lot of decisions were made in order to limit the scope, as described in the demarcations above, and define the specific problem statement. The proof that there is a gap between organizations needing knowledgeable employees and ND individuals being unemployed due to misconceptions, was the foundation of the problem statement. Posing the question of what can be done in order to bridge this gap, this study focuses on the existence of neurodiversity initiatives, and the perception of their value, from the perspective of managers of ND employees. More specifically, the research compares the supporting factors to the engagement levels of said managers, in order to gauge what organizations can do to help even further "up".

Furthermore, the choice was made to take a deeper look at the neurodiversity program at IBM in particular, in order to get some insights on the practical aspect of the topic. This decision was made based on the participants reached for the purposive selection for the pre-study, in addition to it being April; which is generally autism awareness month, but IBM was celebrating neurodiversity month, which led to a lot of material being available (IBM, 2022b).

3.1.3   Developing a potential hypothesis

Due to the lack of existing research on the topic, and limited sample size of respondents, this was deemed to be an exploratory study (Easterby-Smith, Thorpe & Jackson, 2015). Even though the study's results were expected to lack statistical significance due to the small sample size (Bougie & Sekaran, 2019), hypotheses were developed and data was tested accordingly. These are explained in chapter 3.3.1, which also includes the additional qualitative research questions that were not tested statistically, and therefore did not require hypotheses. This was done in an attempt to uncover any indication of a correlation between the independent variables: supporting factors, managerial experience, and personal traits, and the dependent variable: managerial engagement, as seen in the figure below. Additionally, it was done in order to provide a foundation for potential further research.
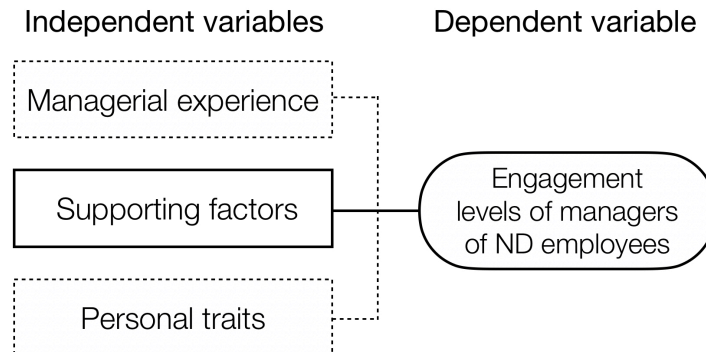
Figure 2: Variables

3.1.4   Determining relevant measures

The study is comprised of a mixed-method approach, combining findings from the literature review with those from the qualitative pre-study, establishing a foundation for the subsequently performed main study, consisting of both qualitative and quantitative parts (Bougie & Sekaran, 2019).

When conducting the literature review, consideration was paid to the validity of the sources used, mainly through assessing the number of previous citations, combined with the legitimacy of the authors (Bougie & Sekaran, 2019). The latter was determined quite generously, since research on the topic, as previously mentioned, is rather scarce. Therefore, the qualifications/experience of the author and journal of publishing was looked at, in order to decide whether or not the reliability was high enough based on their recognizability. Occasionally, a source was used which can be deemed to be non-academical, which was mostly due to it being cross-referenced in other articles, by numerous other authors, or containing a specific piece of information which was of importance to the topic, but could not be found in academic sources, yet.

The relevant measures for the pre-study were determined by material gathered from the theoretical framework. Analyzing this initial data, looking for additions to, and/or consensus with, the theory gathered from analogue topics, such as DM or managerial challenges in general, resulted in establishing the supporting factors, which were used as the foundation for part of the second questionnaire. An explanation for why these specific factors were chosen can be found in chapter 3.3.3. This study adopted a theory first-approach, which was cross-sectional in nature, since it only measured the factors and their impact at one specific point in time (Easterby-Smith, Thorpe & Jackson, 2015).

Supporting factors		
Training	**Neurodiversity awareness**	**Personal managerial support**
Neurodiversity/ neuroinclusivity	Neurodiversity program	Contact person
Anti-discrimination	Neurodiversity Promotion	Support network
People skills		

Table 2: Supporting factors

3.1.5 Collecting the data

The data for the pre-study was gathered through purposive sampling (Easterby-Smith, Thorpe & Jackson, 2015), specifically approaching people holding positions which require knowledge on the topic, eg. "experts", and asking them to participate in the study (see Appendix A). This type of sampling was used since there was a need to target specific individuals in order to gather the desired information, due to the lack of existing research on the topic. It is a non-probable approach, meaning that it can not be used to calculate probability, however that was not an issue in this case, since that was not the intended purpose of the gathered data (Easterby-Smith, Thorpe & Jackson, 2015).

The main questionnaire was distributed through sharing on the authors' respective LinkedIn networks. It was viewed over 2500 times and shared by 15 people from various places around the world, some of which are prominent people in the area, such as Natalia Lyckowski, Global Neurodiversity Advancement Leader at IBM, as well as in relevant groups, such as the Neurodiversity in Business (NiB) Community Group. Since the intended respondents, managers of ND employees, is a very limited group of people to begin with, the hope was to get as much spread as possible, to attain at least a viable sample size. Therefore a combination of convenience sampling and purposive sampling was used (Easterby-Smith, Thorpe & Jackson, 2015) for the main questionnaire, using the access to networks of convenience in order to reach eligible participants.

3.1.6 Analyzing the data

After the main questionnaire was closed, the results were organized, coded, and calculated, as detailed in Appendix F. They were then analyzed in comparison to existing theoretical knowledge, hoping to gain some insight on the impact and value of the supporting factors on the engagement levels of managers of ND employees, in order to answer the research questions; which is discussed in chapter 5.

3.1.7 Interpreting the data

The coding of the qualitative data is detailed in Appendix G, and was done in two cycles, as suggested by Saldaña (2013). In the first cycle, the responses were coded according to descriptive coding guidelines (Saldaña, 2013), meaning that they were all labeled with a descriptive word which was considered to summarize the content of the response. In the second cycle, these labels were grouped through the use of pattern coding (Saldaña, 2013). This was done by combining similar labels into broader ones, to categorize the unstructured data, in order to enable connections and comparisons between the qualitative and quantitative results in the discussion.

3.2 Pre-study

As briefly mentioned above, the pre-study was used to accomplish two tasks: reviewing practical application of the facts gathered from the literature and supplying information to fill gaps where necessary, as well as simultaneously acting as a test for the reliability of the supporting factors (Easterby-Smith, Thorpe & Jackson, 2015).

The pre-study was performed through sending an initial questionnaire consisting of structured, open-ended questions, to experts on the topic of neurodiversity in the corporate workplace. The phrasing of the questions was reviewed so as not to include any double-barrelled, ambiguous, leading or loaded wordings, which could reduce the quality and clarity of the answers (Bougie & Sekaran, 2019). There were a few questions requiring recall-dependency, but these did not go back further than the scope of the current initiative and its components, so the answers should not be particularly influenced by bias (Bougie & Sekaran, 2019). The questions were based on identified information from the topic of neurodiversity itself, as well as that of analogue topics, such as DM or managerial challenges, as well as an established concept for engagement. The decision to use a questionnaire rather than interviews, which could have provided more in-depth information, was done due to lack of time of the respondents, as well as scheduling issues due to time-zone differences.

The relevance of the selected analogue topics was determined based on the range of the scope for the study, as explained in the demarcations. The main reason for seeking the opinions of experts, in addition to the literature review, was the lack of research on the topic of neurodiversity. The identified research did not provide enough coverage on the consideration of the needs of managers of ND employees, and only contained a few examples of the managerial perspective on managing neurodiversity overall, such as Richards et al. (2019). Therefore, the opportunity to gather some complementing, empirical data, was desirable, especially since it simultaneously provided the opportunity to validate the factors for the main questionnaire (Easterby-Smith, Thorpe & Jackson, 2015).

3.2.1 Participant selection

The sample size for the pre-study was meant to be very small; the intent was to get at least one person to reply, in order to provide a stronger foundation for the main study, and test the practical applicability of the included factors. In the end, two respondents, as described in the table below, participated in the study. Both of them have experiences which qualify them as experts on neurodiversity in the workplace, currently holding global positions for neurodiversity and inclusion for people with diverse abilities at IBM. Additionally, one of

them is ND themselves, contributing to the credibility of the results through having embodied the motto "Nothing About Us, Without Us", proving that different perspectives are taken into consideration at every level of the organization.

	Respondent 1	**Respondent 2**
Position at IBM	Global Diversity & Inclusion Leader for People with Diverse Abilities	Global Neurodiversity Advancement Leader
Neurodivergent	No	Yes

Table 3: Pre-study: Respondents

3.2.2 Data processing and analysis

The results from the pre-study were interpreted as mentioned in the research design, through coding and categorizing the responses in two cycles, as shown in table 16. The identified factors which corresponded with those previously found in literature were included in the main questionnaire immediately. The mentioned factors, which had not previously been encountered in literature, were evaluated through comparison with analogue applications and their perceived usefulness, whereafter they were included or disregarded.

Through using the pre-study as a test, the issue of the respondents sometimes tending to lose focus on the fact that the questions regarded the managers of ND employees, not the ND employees themselves, was identified. Because of this, the questions posed in the main questionnaire were worded more carefully, the intention clarified.

3.3 Main study

This questionnaire was the main part of the research project and sought to explore the relationship between managerial support and engagement in regards to managers who work with ND employees. In this survey, findings from the initial pre-study were used and evaluated. The study was observational and cross-sectional in nature, meaning that no attempt to manipulate the variables was made and that data was only collected at one point of time (Bougie & Sekaran, 2019). Due to time constraints in the data collection period and the difficulty to find enough managers of ND employees willing and able to take the time to participate, this type of study design appeared to be the best solution. By sending out an online questionnaire that took less than 15 minutes to fill out, it was possible to find more participants than by trying to conduct long-form interviews. The online survey included both quantitative and qualitative elements. Quantitative elements were used to explore correlations objectively and to avoid the subjectivity of the participants' perceptions. In

addition, they were used in order to enable comparison among the individual participants and to facilitate participation of managers from all around the world, independent of time and location, enclosing global perspectives. Qualitative elements were used in addition, to gather explanations and backgrounds for the interpretation of the quantitative data, allowing for more valid results and analysis.

In the study, that was carried out using the online survey tool Google Forms, primary data was collected by gathering answers from participants. It was conducted from April 19th to April 29th 2022.

3.3.1 Study objectives

The study's main goal was to explore the relationship between the dependent variable of managerial engagement and the independent variable of supporting factors that can be implemented by a manager's organization in order to help them manage ND employees. In addition, further independent variables were partly explored, such as experience levels and personal traits of managers.

The survey focused on answering the two research questions aimed at figuring out how organizations can support their managers who manage ND employees:

> **RQ 1:** *To what degree do the supporting factors correlate positively with engagement levels?*
>
> **RQ 2:** *How valuable do managers perceive the supporting factors to be, in relation to sustaining their engagement levels?*

By collecting quantitative data, objective and quantifiable claims could be made about the factors' correlation with engagement as well as the overall perceived value of those factors. In order to perform statistical tests to find out the correlation between supporting factors and engagement levels, a hypothesis was generated to match research question 1:

> **Hypothesis a:** *The mentioned supporting factors correlate positively with managerial engagement levels.*

In addition, two further independent variables, namely managerial experience and personal traits of managers, were identified, which led to additional questions that the study aimed to explore in order to contextualize engagement of managers of ND employees:

Q 3: *To what degree does managerial experience correlate positively with engagement levels?*

Q 4: *To what degree does a manager's own neurodivergence correlate positively with engagement levels?*

Q 5: *Which other factors and personal traits are perceived to be valuable for their own engagement by managers?*

Q 6: *How do managers perceive managing ND employees to impact their own engagement?*

In order to statistically test the correlations mentioned in questions 3. and 4., corresponding hypotheses were created:

Hypothesis b: *Managerial experience correlates positively with engagement levels.*

Hypothesis c: *Managers who are ND themselves, experience higher engagement levels than NT managers.*

While questions 3. and 4. were explored quantitatively, questions 5. and 6. were inspected in a qualitative manner. The reasoning behind that was to collect new, unknown factors and traits, as well as explore managers' perception of how managing ND employees impacts their engagement, without pointing their answers into a specific direction by asking leading questions.

3.3.2   Sample selection

ND individuals make up a minority of the world population (APA, 2013; Ekblad, 2013) and unemployment can be high (Hendricks, 2010; Sparkes et al., 2022), thus, the population of managers of ND employees in corporate environments is rather small as well. Accordingly, the decision was made to not further limit the study by imposing a restriction on the geographical location of the participating managers. Therefore, location was not an exclusion criteria for the sample.

In order to find participants, self-selection sampling was used, a non-probability sampling technique where the need for participants is publicized along with information about the contents and inclusion criteria of the study (Bougie & Sekaran, 2019). In addition, purposive sampling (Bougie & Sekaran, 2019) was used as acquainted managers that were known to manage ND individuals were asked to participate. The above-mentioned sampling techniques were used as they are time-efficient and the inclusion criteria for the sample was quite specific. While this method may give rise to self-selection bias and may lead to results being less representative, the time-constraints of the research project justify the approach.

To be more precise, a LinkedIn post (see appendix B) was published by the researchers. It included a short description of the research purpose without explicitly naming the concept of engagement, in order not to influence the study results, as well as a definition of neurodiversity, the link to the study and the inclusion criteria. These criteria stated that the participants had to currently work as a manager and that they had to currently manage at least one ND employee. This post was shared with the researchers' LinkedIn networks, neurodiversity LinkedIn groups, professionals in organizations that were known to have neurodiversity initiatives, internal organizational networks, and acquainted managers of ND individuals.

To make sure that participants met the inclusion criteria, the questionnaire included the two questions *"Are you working in a managing role?"* and *"Are you managing neurodivergent employees?"*. If the respondents answered one of these questions with "No", their data was excluded from the data analysis.

3.3.3 Survey description

The survey included five parts: demographic questions, an established engagement assessment, questions about the existence of supporting factors, questions about the perceived value of supporting factors and lastly, explanatory qualitative questions.

After providing a short description of the study's purpose and a definition of neurodiversity, demographic information was collected in order to be able to properly describe the sample. This included information on the participants' age, gender, neurodivergence/neurotypicality, as well as years of experience as managers and managers of ND employees. The participants were also asked to name their employees' type of neurodivergence, if possible. Lastly, they were asked to share if they were currently working in a managing role and if they were managing neurodivergent employees in order to make sure that they fulfilled the inclusion criteria for the sample.

As managerial experience and personal traits were regarded as independent variables that may influence engagement as well, the data on managerial experience and managers' own neurodivergence/neurotypicality were tested statistically in correlation with their engagement levels. Thus, directional hypotheses were created, as mentioned in chapter 3.3.1, claiming that managerial experience as well as a manager's own neurodivergence correlated positively with their engagement levels. The hypothesis that managerial experience positively affects engagement is based on the assumption that experienced managers already possess more of the knowledge and awareness that many diversity campaigns attempt to increase (Dobbin & Kalev, 2016) and that they are more accustomed to the management challenges as described by Mintzberg (2011). In addition, it was presumed that ND managers feel more

engaged when managing ND employees than NT managers do, since their own neurodivergence may make it easier for them to muster the compassion and understanding for their ND employees that the experts in the pre-study claimed to be beneficial for managers' engagement retention. Managers' own neurodivergence or neurotypicality was the only personal trait that was explored quantitatively in this study, due to reasons of simplicity. However, there are many other personal traits that may have an impact on the engagement levels of managers of ND employees, some of which were collected in the qualitative part of the study.

After filling out the demographic part of the survey, the participants were asked to take an engagement assessment using the 9-item version of the Utrecht Work Engagement Scale (UWES-9) created by Schaufeli, Bakker and Salanova (2006). This engagement scale is one of the most popular measuring tools in research to assess engagement and has been demonstrated to possess internal consistency, test-retest reliability and factorial validity (Schaufeli, Bakker & Salanova, 2006). Since the UWES-9 only consists of nine items, it takes a fairly short amount of time to answer, allowing for the study to be as short as possible and therefore making it easier for busy managers to participate. The questionnaire measures engagement on the three dimensions vigor, dedication and absorption, with each dimension taking up three items (Schaufeli, Bakker & Salanova, 2006). The items consist of descriptive claims about how the respondents perceive their work, such as *"At my work, I feel bursting with energy"* (vigor), *"I am enthusiastic about my job"* (dedication) or *"I feel happy when I am working intensely"* (absorption), assessed by asking how often the respondents feel that way using a 7-item Likert scale ranging from Never (0) to Always (6) (Schaufeli, Bakker & Salanova, 2006). The entire UWES questionnaire can be found in appendix D. It does not include the word engagement in its description and rather asks how the participant feels at work or about their job in order to avoid prejudice (Schaufeli, Bakker & Salanova, 2006). This study has adopted the UWES-9 word-by-word and using the same nine items and 7-point Likert scale to retain its proven validity and reliability. The goal of assessing engagement before asking about the supporting factors and their perceived value was to receive an engagement assessment that was as unbiased by the factors as possible.

Subsequently, the existence of supporting factors in the participants' organizations was inquired using three dimensions, namely provided training, neurodiversity awareness and managerial support. The dimensions and questions were chosen based on the pre-study and literature on general diversity and neurodiversity, taking into account measures that have been beneficial in regards to other metrics which were then explored in regards to managerial engagement.

First, the dimension training was assessed. Participants were asked how often they participated in training about neurodiversity/neuroinclusivity, anti-discrimination and people skills (empathy, compassion, etc.), using a 5-point Likert-scale including the options *"Never", "Once", "Every other year", "Every year"* and *"Every month"*. As trainings only occur at a given instant, are often not available consistently and repetition is a crucial part of learning in organizational contexts (Epstein, 2021; Weber & Antal, 2003), the choice was made to assess the frequency of trainings using an ordinal Likert scale rather than their mere existence with a nominal and binary one. Five points were deemed precise enough to distinguish between the frequencies of trainings participated in, assuming that more points would make it unnecessarily hard for respondents to answer correctly. Participants of the pre-study stated that training is a measure used in their company to support managers, increase their knowledge about neurodiversity and make them more neuroinclusive. Literature has found diversity training to be beneficial in reducing biases if participation is voluntary (Dobbin & Kalev, 2016). Since training is a measure that is already being implemented in organizations and its positive effect on inclusion has been proclaimed by research, this study examined whether training is also beneficial for managers' engagement. Due to reasons of simplicity, this study did not distinguish between voluntary and mandatory training.

Supporting factors on the dimension of neurodiversity awareness included a neurodiversity program of the organization and active promotion of neurodiversity within the organization. The existence of these factors in the participants' organizations was assessed using two single-choice questions that were to be answered with either *"Yes"* or *"No"*. Respondents of the pre-study reiterated the importance and positive effects of their neurodiversity program and claimed that it helped their managers understand neurodiversity better. In addition, it is becoming more and more common for organizations to have general diversity programs (Dobbin & Kalev, 2016). Thus, the question arose whether the existence of a neurodiversity program in particular as well as any other ways of internal promotion of neurodiversity, in addition to benefiting ND individuals and the knowledge of managers, had positive effects on managerial engagement levels.

Lastly, the respondents were asked about the dimension of managerial support. They had to answer two single-choice questions on whether they had access to a contact person to discuss neurodiversity inquiries as well as to internal support networks for managing ND employees using the answer options *"Yes"* and *"No"*. One respondent in the pre-study had stated that their company had a Global Neurodiversity Advancement Leader that was available for managers to ask questions, while another shared that they had one-on-one support for neurodiversity concerns. Loiacono and Ren (2018) emphasize the importance of managerial

support by creating so-called "safe environments" where managers can ask potentially uncomfortable questions about neurodiversity openly without having to fear retaliation. Therefore, the dimension of managerial support sought to extend the concept of these safe environments to the concept of managerial engagement, using two types of supportive contacts: experts and peers.

Since all of the supporting factors were chosen based on their positive effects on other regards than engagement, the assumption was made that they may influence engagement positively as well. Therefore, hypothesis a was phrased in accordance with research question 1 (*"To what degree do the supporting factors correlate positively with engagement levels?"*) and states that *"the mentioned supporting factors correlate positively with managerial engagement levels."*.

After assessing the frequency or existence of the supporting factors at the participants' organizations, which were to be tested for their correlation with managerial engagement levels, the participants got to share their subjective evaluation of the impact of these factors on their own engagement. They were asked to which degree they believed the factors could impact their engagement levels at work, even if they were not actually implemented at this point. Answers were to be given on a 5-point Likert-scale including the options *"- -", "-", "Neutral", "+" and "+ +"*, in order to allow for nuance in the respondents' evaluations. By using a quantitative assessment as well as the same structure and order for the questions as the previous part of the questionnaire, the actual correlation between the factors and engagement could be compared easily with their perceived value, which allowed for conclusions about their similarities or differences, and a more nuanced discussion.

The last part of this mainly quantitative survey was an additional qualitative part where participants were allowed to share their own thoughts, add further input and contribute background information on their answers. This part was added in order to put the quantitative part into perspective and to invite answers that otherwise would have been lost due to the closed nature of the quantitative part. In three structured, open-ended questions, they were asked if there were any additional factors they believed would benefit them in order to remain engaged, if they felt like managing ND employees affected their engagement in any way, and if there were any comments they would like to share.

3.3.4   Data processing and analysis

After collecting the data as mentioned above, it was downloaded from Google Forms into Microsoft Excel to be further processed. Since the data set was rather small and manageable, the need for moving it to another program was deemed unnecessary, due to the required calculations being well within the capabilities of Excel. The data of those who did not meet the inclusion criteria was removed and excluded from the following analysis. If needed for

the statistical analysis, answers that were given in words or symbols were coded into numerical measures (see Appendix F). This applied to the answers regarding the managers' own neurodivergence/neurotypicality, their management experience, their measured engagement levels, the existence of the supporting factors, and the perception of the supporting factors.

Subsequently, the engagement questionnaire data was segmented by answers about the supporting factors, personal traits and experience. For each of the segments, the sample size (N), means (M) and standard deviations (SD) (in accordance with Schaufeli and Bakker (2003)) resulting out of the participants' data were calculated for the three engagement dimensions vigor, dedication and absorption, as well as the overall engagement score. For reasons of simplicity and coherence, only the overall engagement score is reported in this study. The engagement score enabled a comparison of engagement levels among different conditions created by the prevalence, non-prevalence or frequency of implementation of supporting factors, as well as managerial experience and personal traits.

In order to calculate the correlation between supporting factors and engagement levels, multiple statistical tests were considered, according to the sample size, as well as amount and types of variables used. After consulting the thesis supervisor, the decision was made to use the Spearman rank correlation, as it is a non-parametric test that allows the examination of relationships among ordinal variables (Bougie & Sekaran, 2019). Even though some of the variables used in the study were nominal, and therefore by definition unfit for the Spearman rank correlation, the test was used nonetheless, as the main purpose of the study was to report results that were merely exploratory. In addition, the supervisor reported substantiated robustness of regression of ordinal data in a previous case study, and that many studies also regress dummy variables despite their nominal nature (Larsson, 1989). Using the Spearman rank correlation, a correlation coefficient (ρ) and p-value (p) were calculated. The strength of the correlation coefficients was interpreted as can be seen in table 4 and has been adopted from Dancey and Reidy (2007).

In order to find out the statistical significance in form of the p-value, a two-tailed test was performed, and a typical significance level of ≤ 0.05 was determined. In addition, means and standard deviations were calculated for each of the questions inquiring about the perceived benefit of the supporting factors for managerial engagement. As a consequence, it was possible to compare the objective means and correlations of the supporting factors to their subjective perceived value and potentially spot similarities or differences.

Correlation coefficient		Description
+1	-1	Perfect
+0.9	-0.9	Strong
+0.8	-0.8	Strong
+0.7	-0.7	Strong
+0.6	-0.6	Moderate
+0.5	-0.5	Moderate
+0.4	-0.4	Moderate
+0.3	-0.3	Weak
+0.2	-0.2	Weak
+0.1	-0.1	Weak
0	0	Zero

Table 4: Correlation coefficient naming convention

The qualitative section was interpreted through coding and categorizing the responses in two cycles, as shown in appendix G. The results were included in order to provide perspective for the analysis and deduct further research recommendations.

3.4 Research quality

The quality of this study has been mentioned a few times above, as for testing the questionnaire and using the number of citations to estimate the validity and reliability of a reference (Bougie & Sekaran, 2019). However, the quality is lacking in a few places, regarding both validity and reliability. This is mostly due to the nature of the topic and the lack of previous research in the area. In order to combat this as much as possible, comparisons to analogue topics were made, and input from experts on the topic was gathered to support the tentative facts gathered from literature.

3.4.1 Pre-study

The pre-study was used as a form of validation for the main study. As such, it implemented face validity (Bougie & Sekaran, 2019) as a measure of goodness, gathering data on the topic and establishing the intended concept of measure is what is measured. As will be explained in the following chapter, this was not the case in one instance, and the question was therefore re-phrased in order to ensure that the intended data mas measured. Since the study is cross-

sectional in nature, and this pre-study mainly intended to increase the foundation for the main survey, as well as act as a test, the reliability coefficient was not thoroughly measured through neither stability nor consistency (Bougie & Sekaran, 2019).

3.4.2 Main study

The main study measured the goodness of data through content validity (Bougie & Sekaran, 2019), having incorporated insights from the literature and the pre-study as means of increasing the adequacy and representativeness of the items being tested to the highest degree achievable. Additionally, using the established UWES-9 to measure engagement established reliability, through having pre-determined internal consistency and stability measures (Bougie & Sekaran, 2019). According to Schaufeli and Bakker (2003) the internal consistency, measured by using Cronbach's alpha, is considered *"good"*, scoring the critical value of α=0.70, or above. Additionally, Schaufeli and Bakker (2003) determined the UWES-9 to be relatively stable, the coefficients being between 0.30-0.46 for the three factors, proving the high levels of inter-correlation between them.

The various limitations on the scope of this study, the main one being the time constraint leading to the cross-sectional study, rather than a longitudinal one, led to less than optimal verification of both validity and reliability, which is unfortunate, but unavoidable. Combined with it being an exploratory study on a relatively new area, the results should not be interpreted as fully valid or reliable, but rather as an indication for experimental implementations or further studies on the topic.

Furthermore, it is unknown what population size would be used to determine an accurate sample size for this study, since the prevalence of the amount of managers managing ND individuals globally currently has not, and likely can not, be calculated. Regardless of the unknown population size, the sample size is assumed not to be large enough to draw any statistically significant conclusions due to the low number of participants overall. However, despite the limited sample size, one of the measures did show a p-value of .048 (see table 13), indicating that it is within the limits of conventional significance (Bougie & Sekaran, 2019). Exploratory studies are usually qualitative in nature, but can be quantitative as well, if there is a big enough sample size. Therefore, this study can be viewed more as a qualitative study with closed questions, rather than a purely quantitative one.

3.5 Ethical principles

Adhering to a code of conduct and expected behaviors are essential when performing research (Bougie & Sekaran, 2019). Therefore, ethical principles of conduct were kept top of mind

throughout the entire study, not in the least through remaining objective when gathering and interpreting the results of the data (Bougie & Sekaran, 2019). Furthermore, the phrasing of terms was carefully considered, in order to represent a correct and inclusive image of the various types of included diversities.

All data from the main survey was gathered anonymously, in order to ensure all participants felt safe to disclose potentially sensitive information (Bougie & Sekaran, 2019). Although this could potentially impact the ability to verify the replies, the increased candor given through anonymous replies was of more value in this instance (Gnambs & Kaspar, 2015), both to the study, as well as to ensure the comfort of the participants. Although the *"Candor hypothesis"* by Buchanan (2000), is debated in its proven efficacy (Gnambs & Kaspar, 2017), the illusion of increased privacy through participating in an anonymous web-based survey, is deemed to be a positive contributing factor to the reliability of the results of this study. This is mainly due to the historically sensitive nature and reluctance among ND individuals to disclose their neurodivergence to their managers or employers, due to systemic and societal misconceptions and discrimination.

Another important ethical aspect is to behave with integrity throughout the research, recording the gathered data accurately and to its full extent (Bougie & Sekaran, 2019). Any data that does not support the hypothesis must not be concealed or removed, nor manipulated to match the will of the researchers; the method and results must not be falsified or fabricated, and should be transparent (Bougie & Sekaran, 2019). This is ensured in this study by adding the results for the quantitative questions as graphs in the data chapter. The only data that was cleaned from the set was the one that did not meet the criteria.

3.6 Reflection on choice of method

In retrospect, there were quite a few aspects of the choice of method that would have benefited greatly from this study having a longer time frame, both for validity and reliability, but also to enable a larger sample size for accuracy and significance of the results. However, given the parameters and the fact that it is an exploratory study, the results do show promise for acting as a foundation or support for further research. Perhaps it is actually beneficial to be limited and be able to provide this small-scale study with tentative results; given the novelty and unknown aspects of the topic, it is not guaranteed that any hypothesis could have generated significant results, regardless of its scale, time and sample size.

The decision to add the initial online survey, expanding the partly lacking scholarly research, through adding practitioners' (expert) advice was beneficial, since it increased the validity of

the main study. This pre-study could have consisted of interviews to gather more detailed results, but due to time constraints, and the busy nature of managerial work, it was an issue to find managers who would have time for an interview, especially during neurodiversity month. Therefore the choice was made to instead use a web based questionnaire, allowing the participants to take it whenever their schedule allowed, regardless of global time difference or conflicting appointments.

The main study consisted of a mixed method approach: a set of static, pre-determined questions with scaled response options, in order to gather objective, quantitative data, which could be calculated in order to assess correlations with as little bias and subjectiveness as possible. Supplemented by a few open questions, allowing the managers' to share their personal thoughts, knowing that they would be subjective perceptions. In theory, this was an appropriate concept, but, like the study overall, a larger sample size would be necessary in order for it to be considered generally representative. In addition, the purposive study only determined the selection of participants based on the managers managing any ND individual, which led to an uneven sample in terms of representation of the various diagnosis covered by the umbrella term. For example, a majority (10 out of 13) of the participants managed an individual with ADHD, however, many of them managed both someone with ADHD and another neurodivergence. In total, the study covered managers with experience from managing individuals with: ADHD, ASD, Tourette syndrome, dyslexia, and dyscalculia, as well as some undefined (see table 5). Furthermore, the sampling may not be representative enough, due to self-selection bias, since a large amount of participants currently working at companies with neurodiversity programs, who are therefore more aware of the effects of neurodiversity than the "common" manager would be, if asked the same questions.

Lastly, no moderating or mediating variables were specifically accounted for in the study, although some were initially considered. This was also due to the time constraints as well as the uncertainty and novelty of the topic at hand. There are many potential moderating variables, the independent variables: managerial experience and personal traits, could even be considered moderating factors between the implementation of supporting factors and the engagement levels among managers of ND employees. However, no calculations of the supportive factors influence on each other was made in order to determine if this proves to hold true. Considering the fact that unlearning old habits is harder, and thus can be argued to take more time, than learning new ones (Grant, 2021), a very strong contender for a mediating variable is therefore time, meaning that this study would need to be performed with a longitudinal method, applying the test-retest method of validity as well as measuring the stability and consistency of reliability (Bougie & Sekaran, 2019).

4 Empirical Data

This chapter is comprised of the results from the two surveys conducted as the empirical part of the study; gathering the answers from the informants and sectioning it according to concept.

4.1 Identified supporting variables

The results from the initial survey, first of all mentions that psychological safety is required in order for ND employees to feel safe, and that improved accommodation support and better understanding from managers makes a difference in improving results from a neurodiversity initiative. Furthermore, the study provided several examples of supportive functions currently in use, such as formal training modules on how to be neuroinclusive, targeted at managers of ND employees and talent/recruiting professionals, as well as internal websites for support, and a contact person for one-on-one support.

The respondents of the initial survey appraised that managers feel more engaged when they are supported by being provided with knowledge and training on an unfamiliar topic. Additionally, promoting open communication and the existence of a leader on the topic who they can turn to for support, are supportive functions which are believed to sustain engagement levels among managers of ND employees. When asked which supportive functions they believed managers of ND individuals need in order to sustain their engagement levels, the first reply was training, followed by the support of an internal structure.

The last specific questions regarded the personal qualities, or behavioural habits, of managers, asking the experts which ones they deemed the most beneficial to possess when managing ND employees. Here, the main replies were consistent in mentioning empathy and compassion, as well as understanding, appreciation, and a desire to learn and to help others.

Lastly, the respondents were asked if they had any additional comments they would like to share, to which they replied that companies without a neurodiversity program are recommended to start one, and to adhere to the principle "Nothing about us without us", which means including ND employees in building and leading said programs.

The most relevant responses are outlined and coded in Appendix G.

4.1.1 Sample description

The main study was taken by 15 participants, however, some data had to be cleaned due to the inclusion criteria. Two participants' data was excluded due to them not working in

managing positions. Two other employees stated that they were not completely sure that some of their employees were ND but that they suspected them to be, therefore, their data was included in the analysis. After all, many employees still do not feel comfortable sharing their neurodivergence with their managers or employers (Morris, Begel & Wiedermann, 2015). After cleaning, the data set included 13 participants.

Most of the participants were between the ages of 35 - 54, with one being between 25 - 34, five between 35 - 44, five between 45 - 54, and two between 55 - 64. Seven of them identified as male and six as female. The sample exhibited a high prevalence of neurodiversity among the managers themselves, as five of them were formally diagnosed and one was self-diagnosed with a ND condition, while seven did not identify as ND (as shown in figure 10).

In terms of management in general, two respondents had 1 - 4 years of experience, five had 5 - 9 years, one had 10 - 14 years, one had 15 - 19 years, and four had 20+ years. When looking at the years of experience managing ND individuals, one had <1 year of experience, six had 1 - 4 years, four had 5 - 9 years, one had 10 - 14 years, and one had 20+ years (as shown in figure 9).

Seven managers reported multiple ND conditions being present in their employees, while the other six managers worked with employees with only one ND condition. Ten respondents managed employees with ADHD, six with dyslexia, three with autism, one with dyscalculia, one with TS, and two with uncertain diagnoses.

Diagnosis \ Participant	1	2	3	4	5	6	7	8	9	10	11	12	13
ADHD		X	X	X		X	X	X	X	X	X		X
ASD					X					X		X	
Dyslexia			X					X	X		X		X
Dyscalculia								X					
Tourette syndrome												X	
Uncertain	X		X						X				

Table 5: The forms of neurodivergence being managed by the participants

4.2 Engagement levels

First, the engagement levels shall be considered on their own, in order to get an overview of the participants' individual and overall engagement levels.

Participant	1	2	3	4	5	6	7	8	9	10	11	12	13
Overall engagement score	5.22	5.00	4.11	4.00	3.89	3.56	3.11	2.56	4.11	3.00	4.22	4.44	3.89

Table 6: Individual Overall engagement scores

As seen in table 6, the participants' engagement scores span from the low end at a score of 2.56 from participant 8 to the high end at a score of 5.22 from participant 1. Table 7 depicts the overall engagement levels of the sample (N = 13, M = 3.93, SD = 0.75). In addition, it shows that the engagement levels of managers who have at least one supporting factor implemented at their organization (N = 12, M = 4.01, SD = 0.73) are higher than the engagement level of the one manager whose organization has implemented no supporting factors (N = 1, M = 3.00). This indicates that there may be a positive correlation between supporting factors and managerial engagement levels. However, due to the exploratory nature of the survey, which included no experimental manipulation of variables, there is only one participant in the data set who experienced no supporting factors, therefore, the data basis is weak, which is why this correlation was not examined statistically. In the following chapters, the correlations between the individual supporting factors, as well as the managerial experience and personal traits, are explored.

Engagement levels	N	M	SD
Overall	13	3.93	0.75
With some supporting factors	12	4.01	0.73
Without supporting factors	1	3.00	-

Table 7: Overall engagement comparison

4.2.1 Supporting factors

The following chapters, tables and graphs explain how the supporting factors correlate with the engagement levels of managers of ND employees. For the sake of comprehension and simplicity, the individual dimensions vigor, dedication, and absorption are not explained or included in the tables and graphs. The tables include data on the sample size (N), mean (M), standard deviation (SD), correlation coefficient (ρ), and p-value (p), while the figures include the individual scores of the participants.

4.2.1.1 Training

The supporting factor training and its dimensions neurodiversity/ neuroinclusivity training, anti-discrimination training and people skills training were considered and investigated in regards to their relationship with managerial engagement. The results are summarized in table 8 and divided by respondent in figure 3.

Supporting factors	N	M	SD	ρ (rho)	p
Neurodiversity/Neuroinclusion					
Never	10	4.08	0.72	-0.42	.153
Once	2	3.22	0.94		
Every other year	-	-	-		
Every year	-	-	-		
Every month	1	3.89	-		
Anti-discrimination					
Never	2	3.56	0.79	0.16	.599
Once	2	3.72	0.24		
Every other year	2	4.83	0.55		
Every year	5	3.60	0.73		
Every month	2	4.44	0.79		
People skills					
Never	2	2.78	0.31	0.46	.117
Once	3	3.96	0.36		
Every other year	1	5.22	-		
Every year	5	3.87	0.48		
Every month	2	4.56	0.63		

Table 8: Supporting factors: Training
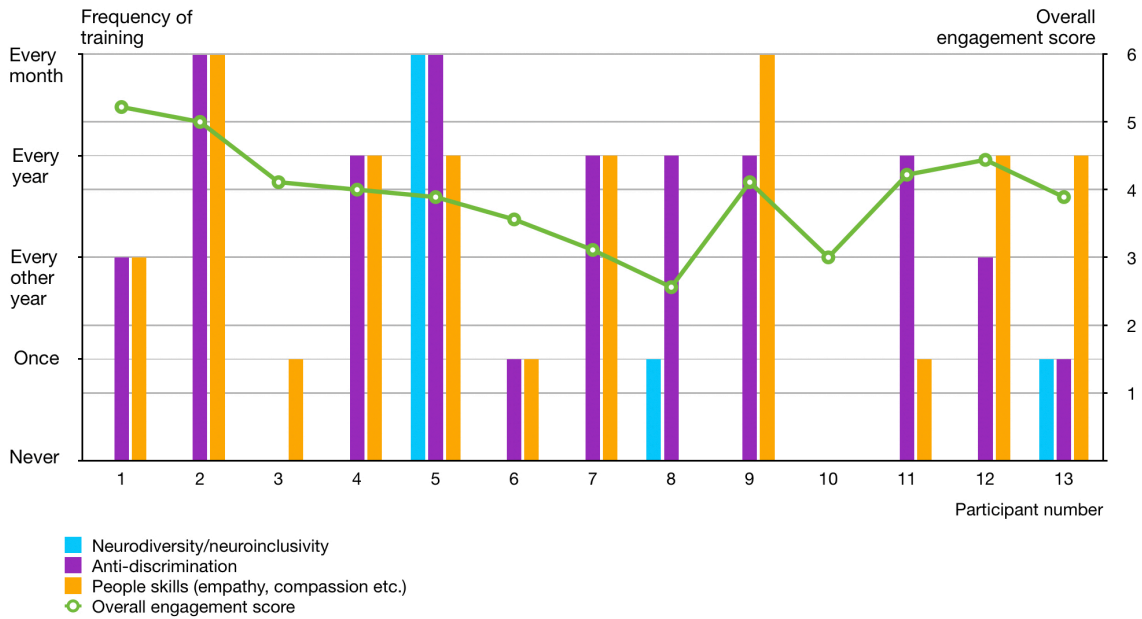
Figure 3: Provided training compared to overall engagement

While most managers have never received training specifically targeted at educating them about neurodiversity/neuroinclusivity (N = 10), most managers have been provided with anti-discrimination (N = 11) and people skills training (N=11) by their organization at least once, as can be easily seen in figure 3. However, the engagement levels of those managers, who have not received neurodiversity/neuroinclusivity training (N = 10, M = 4.08, SD = 0.72) is higher than the engagement levels of those who have received this kind of training once (N = 2, M = 3.22, SD = 0.94) or every month (N = 1, M = 3.89), indicating that this kind of training is accompanied by decreased engagement levels.

The correlation between neurodiversity/neuroinclusion training and engagement has been found to be a moderate one of -0.42, meaning that the correlation is negative and that with increasing frequency of neurodiversity/neuroinclusion training, the engagement levels decrease. However, with a p = .153, this correlation is not statistically significant.

Those who have never received anti-discrimination training (N = 2, M = 3.56, SD = 0.79) exhibit lower engagement levels than all of those who have received this training at least once, suggesting that anti-discrimination training correlates with increased engagement levels. The data also implies that the engagement levels are the highest, when training occurs fairly frequently, either every other year (N = 2, M = 4.83, SD = 0.55), or monthly (N = 2, M = 4.44, SD = 0.79). However, engagement levels with annual training are fairly low (N = 5, M = 3.60, SD = 0.73).

The correlation between anti-discrimination training and engagement is positive but weak at a correlation coefficient of 0.16. With p = .599, the correlation is not significant.

Similarly to anti-discrimination training, those who have never been provided with people skills training (N = 2, M = 2.78, SD = 0.31), have lower engagement levels than all of those who have received this training at least once, which indicates that people skills training coincides with increased engagement levels. The highest engagement levels seem to occur with training provided every other year (N = 1, M = 5.22) or every month (N = 2, M = 4.56, SD = 0.63).

The correlation between people skills training and engagement has been found to be moderate (ρ = 0.46) but not significant (p = .117).

4.2.1.2 Neurodiversity Awareness

Thereafter, the managers' engagement levels were assessed in relation to neurodiversity awareness being created in their organization or not. The results are depicted in table 9 and figure 4.

Supporting factors	N	M	SD	ρ (rho)	p
Neurodiversity program					
Yes	3	3.56	0.88	-0.22	.470
No	10	4.04	0.72		
Neurodiversity promotion					
Yes	3	3.44	0.77	-0.44	.132
No	10	4.08	0.27		

Table 9: Supporting factors: Neurodiversity awareness
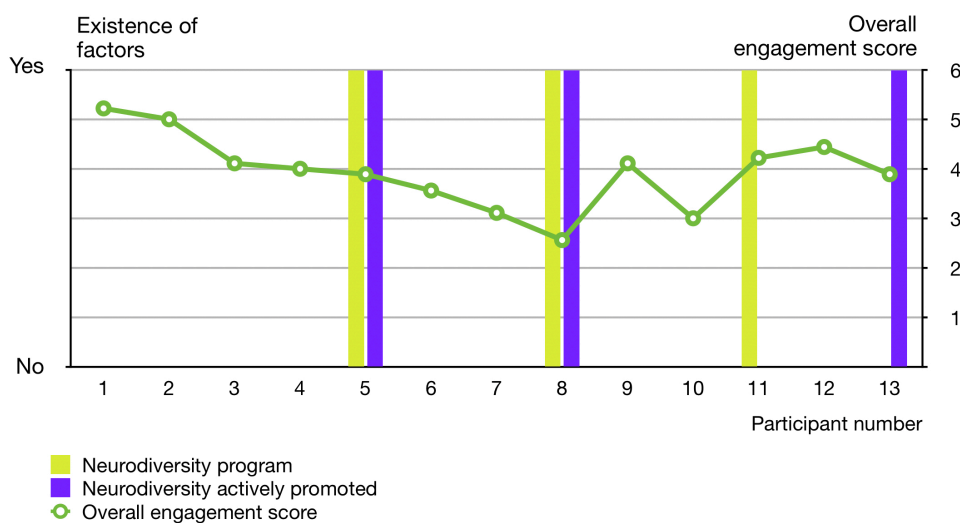
Figure 4: Awareness of neurodiversity compared to overall engagement

Most managers' organizations did not have a neurodiversity program (N = 10) or did not actively make an effort to promote neurodiversity internally (N = 10). According to the data, the managers whose organizations did not have a neurodiversity program (M = 4.04, SD = 0.72) or did not promote neurodiversity internally (M = 4.08, SD = 0.27) had higher engagement levels than the managers whose organizations did, indicating that neurodiversity programs and active promotion of neurodiversity are associated with lower levels of engagement among managers of ND employees.

A weak negative correlation (ρ = -0.22) was found between the existence of a neurodiversity program and engagement but it did not turn out to be significant (p =.470). There was a negative, moderate correlation (ρ = -0.44) between active neurodiversity promotion within the organization and managerial engagement which was not significant (p = .132) either.

4.2.1.3 Personal managerial support

Lastly, personal managerial support was examined as a supporting factor. The data is summarized in table 10 and figure 5, and described in detail below.

Supporting factors	N	M	SD	ρ (rho)	p
Contact person					
Yes	3	4.41	0.71	0.29	.330
No	10	3.79	0.74		
Support networks					
Yes	5	4.44	0,63	0.47	.108
No	8	3.61	0.66		

Table 10: Supporting factors: Personal managerial support
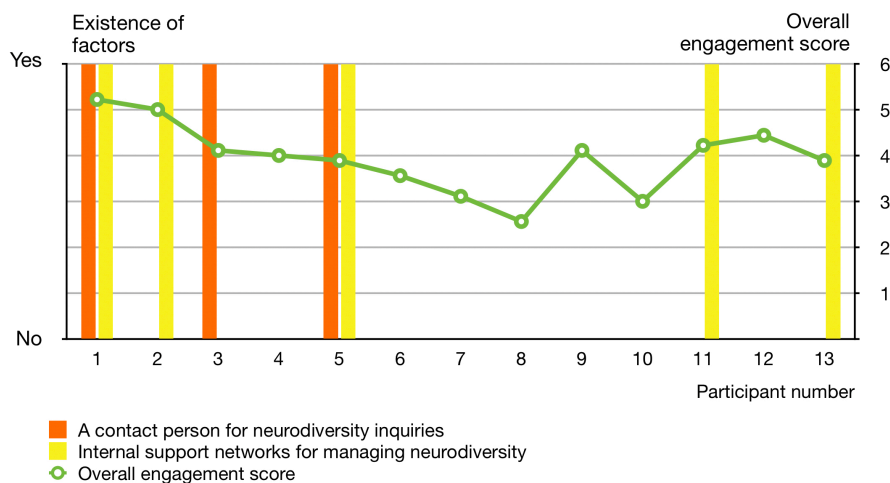
Figure 5: Managerial support compared to overall engagement

When looking at personal support provided for managers, the data shows that most managers do not have a contact person for neurodiversity concerns (N = 10) and a majority does not have support networks for managers of ND employees either (N = 8). Yet, the existence of a contact person (M = 4.41, SD = 0.71) and a support network (M = 4.44, SD = 0.63) seem to correlate with increased engagement levels, suggesting that managers who have personal support, either by peers or experts, experience higher engagement levels than those who do not.

The correlation between the availability of a contact person and engagement turned out to be positive but weak (ρ = 0.29) and not significant (p= .330). The availability of support networks correlated positively with engagement, however, the correlation was only moderate (ρ = 0.47) and not significant (p = .108).

4.2.2 Perception of the value of supporting factors

Table 11 and figures 6, 7 and 8 depict how valuable managers of ND employees perceived the above-mentioned supporting factors in regards to their own engagement levels.

Supporting factors	N	M	SD
Training			
Neurodiversity/Neuroinclusion	13	1.54	0.52
Anti-discrimination	13	0.85	1.14
People skills	13	1.15	1.14
Neurodiversity awareness			
Neurodiversity program	13	1.46	0,66
Neurodiversity promotion	13	1.38	0.65
Personal managerial support			
Contact person	13	1.62	0.51
Support group	13	1.69	0.48

Table 11: Perception of supporting factors

As shown in the table, the participants perceived all supporting factors to be valuable for the retention of their engagement. The ones perceived most valuable were the two personal, managerial support factors of a support group for managers of ND employees (M = 1.69, SD = 0.48) and a contact person for neurodiversity inquiries (M = 1.62, SD = 0.48), as well as training specifically about neurodiversity/neuroinclusivity (N = 13, M = 0.85, SD = 0.52). The supporting factors perceived to be least valuable were anti-discrimination training (M = 1.54, SD = 0.52) and people skills training (M = 1.15, SD = 1.14).
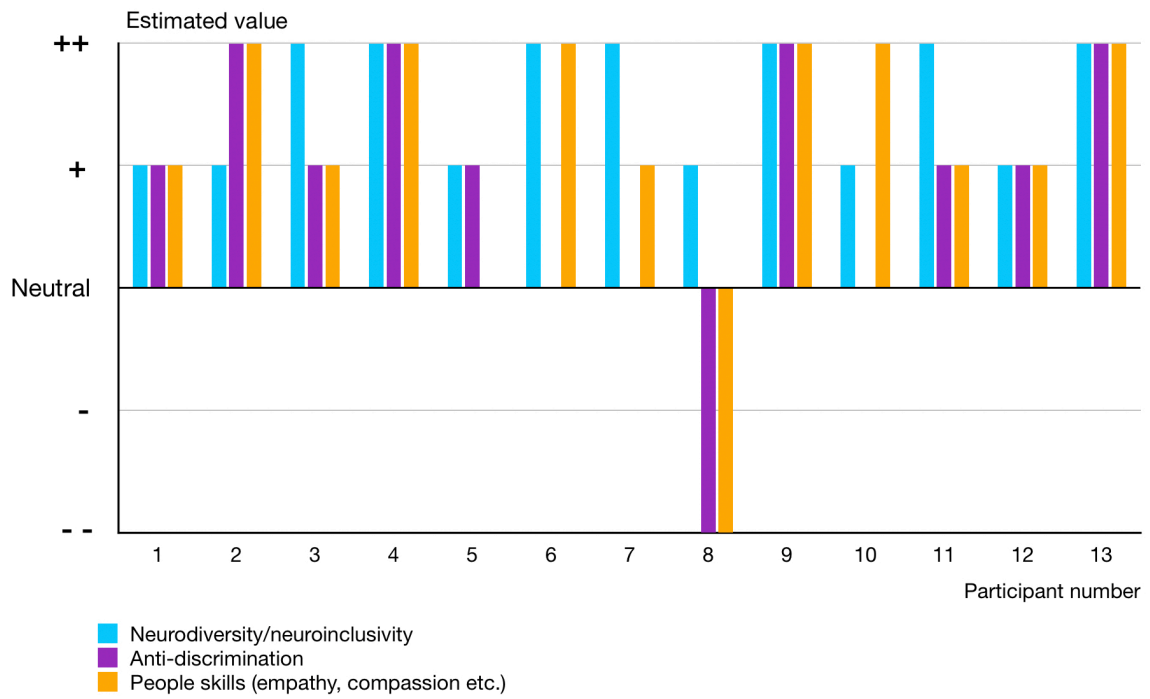
Figure 6: Perceived value of training
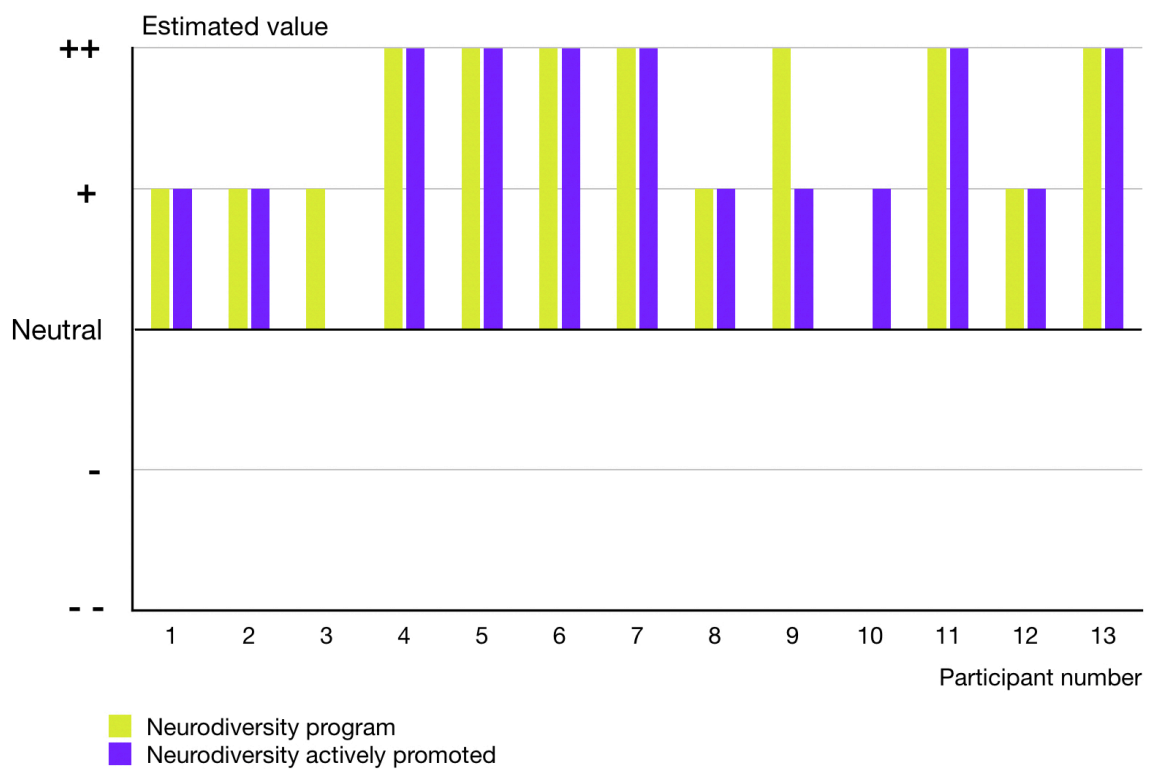
Figure 7: Perceived value of neurodiversity awareness
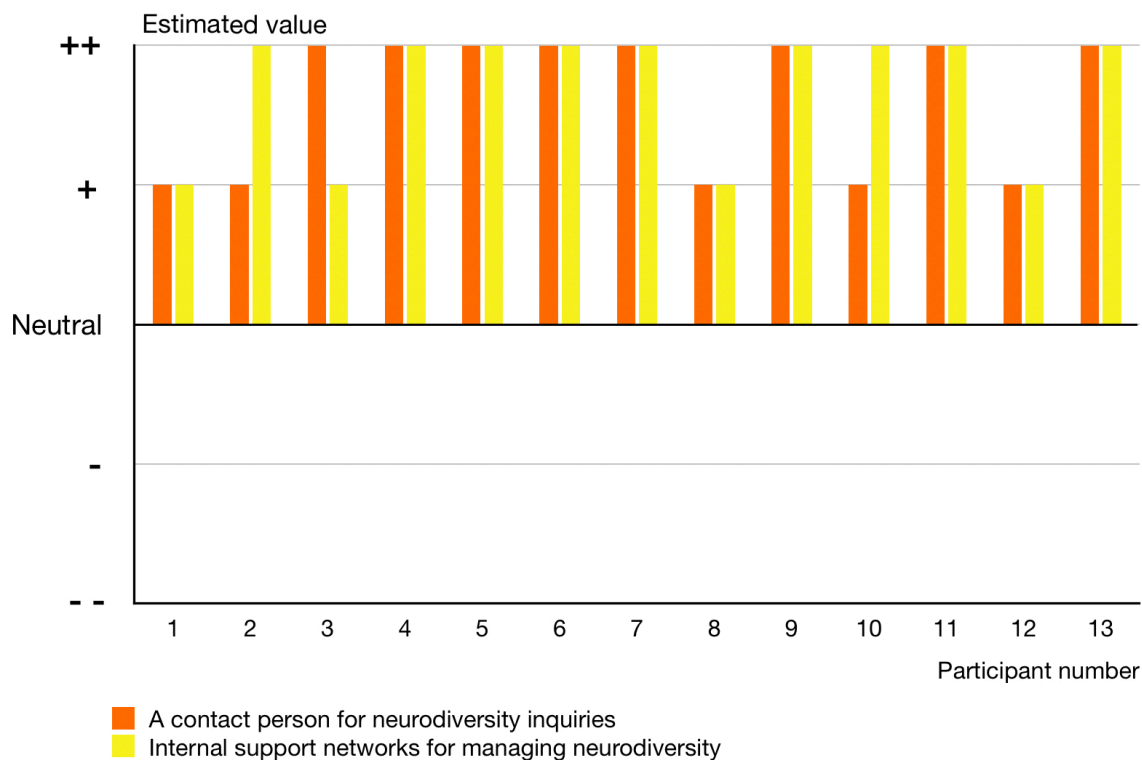
Figure 8: Perceived value of managerial support

4.2.3 Managerial experience

Table 12 and figure 9 depict the results of how managerial experience in general and with ND employees correlates with engagement levels of managers of ND individuals.

As delineated in the sample description, most managers had general managerial experience (N = 7) and experience managing ND employees (N = 10) of 1 - 9 years. Engagement levels fluctuated across years of experience.

The lowest engagement levels in regards to general managerial experience occurred at 15 - 19 years of experience (N = 1, M = 3.11), while the highest occurred at 5 - 9 years (N = 5, M = 4.02, SD = 0.83) and 20+ years of experience (N = 4, M = 4.02, SD = 0.83).

The lowest engagement levels in regards to experience in managing ND employees existed among the manager with 10 - 14 years of experience (N = 1, M = 2.56), while the highest existed among the ones with 5 - 9 years of experience (N = 4, M = 4.33, SD = 1.01).

As to be expected from the random fluctuation across the years of experience, the correlations between experience and engagement were non-existent to low. The correlation between general managerial experience and engagement was positive but low (ρ = 0.14) and not significant (p = .656). The correlation between experience with managing ND employees and engagement was weak (ρ = 0.04), but not significant (p = .108).

Managerial experience	N	M	SD	ρ (rho)	p
General managerial experience					
<1	-	-	-	0.14	.656
1-4	2	3.89	-		
5-9	5	4.02	0.83		
10-14	1	4.00	-		
15-19	1	3.11	-		
20+	4	4.02	0.83		
Neurodiversity management experience					
<1	1	3.56	-	0.04	.895
1-4	6	3.93	0.45		
5-9	4	4.33	1.01		
10-14	1	2.56	-		
15-19	-	-	-		
20+	1	4.11	-		

Table 12: Managerial Experience
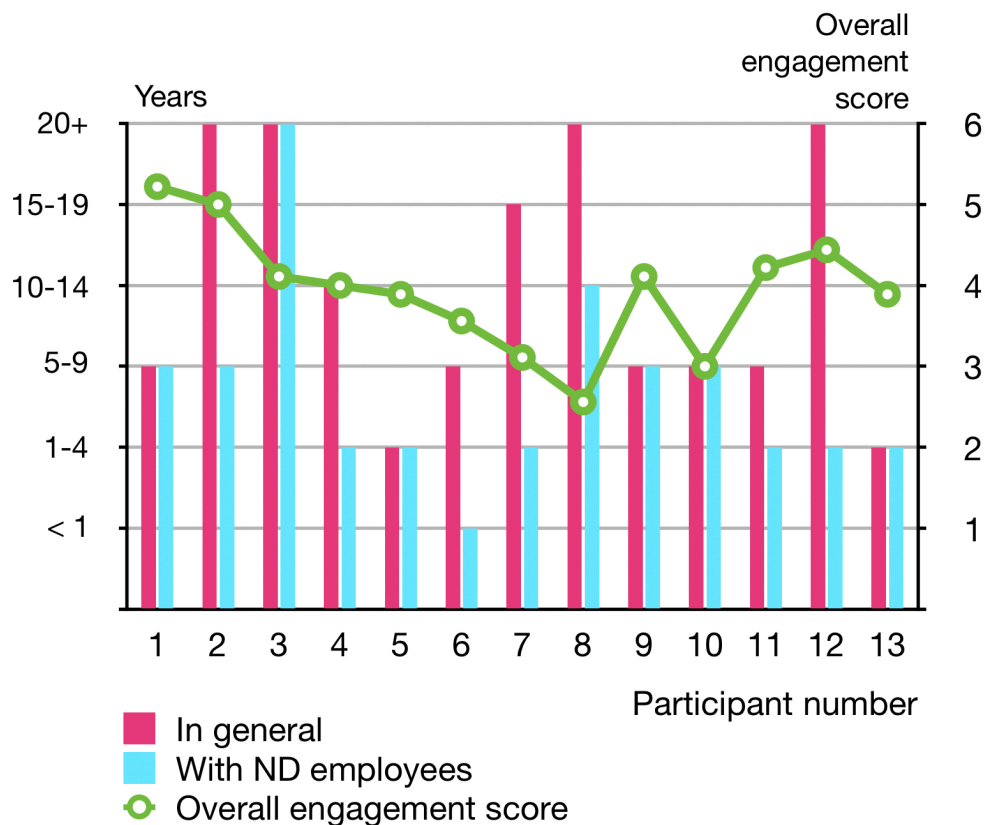
Figure 9: Managerial Experience

4.2.4 Personal traits

Table 13 and figure 10 depict the results of how a managers' neurodivergence or neurotypicality correlates with their engagement levels.

According to the data, NT managers exhibited higher engagement levels (N = 7, M = 4.4, SD = 0.52) than those who were ND themselves (N = 6, M = 3.39, SD = 0,62). The correlation coefficient (ρ = -0.56) shows that there is a moderate negative correlation between managers' neurodivergence and engagement, meaning that managers who are ND themselves experience lower engagement levels. The correlation is statistically significant (p = .048).

Supporting factors	N	M	SD	ρ (rho)	p
Manager's neurodivergence/neurotypicality					
ND (officially diagnosed and self-diagnosed)	6	3.39	0.62	-0.56	.048
NT	7	4.40	0.52		

Table 13: Personal traits: Neurodivergence/Neurotypicality
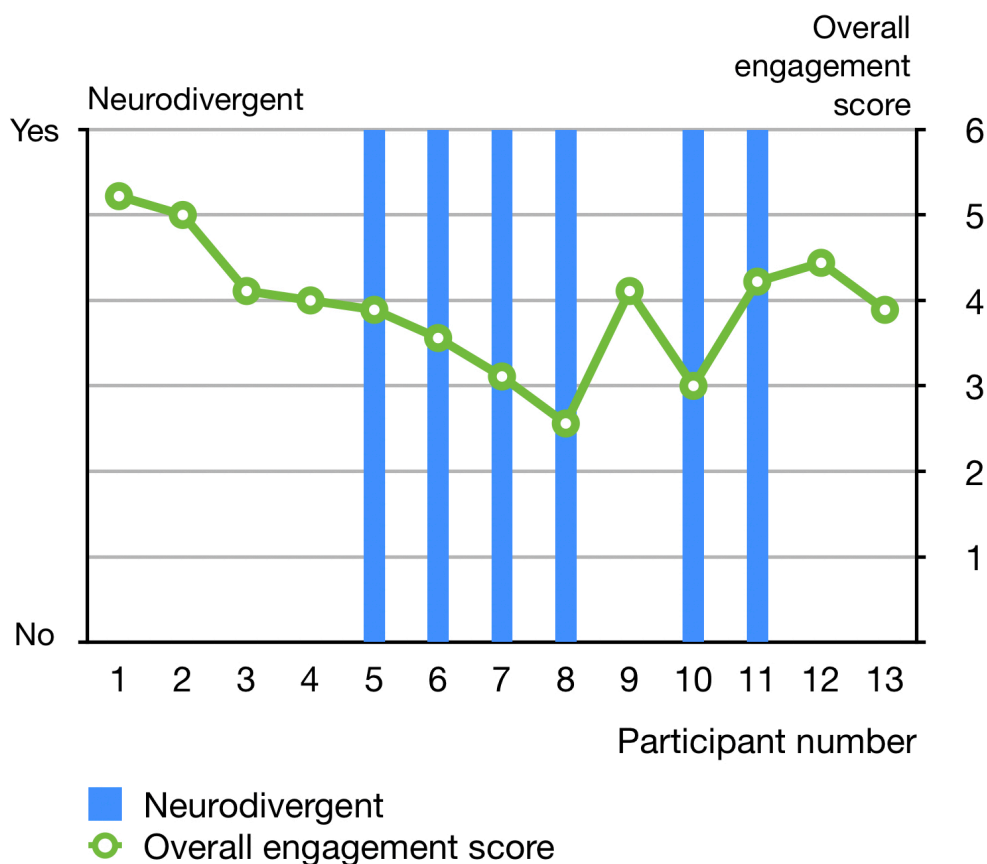
Figure 10: Managers' own neurodivergence

4.3 Qualitative results

Lastly, by providing qualitative, open-ended questions, the participants were asked about their thoughts and opinions on which additional factors they believed would benefit their engagement, how they felt managing ND employees affected their engagement and if there was anything else they wanted to share. The open-ended questions gathered multiple, heterogeneous answers that helped understand managers' challenges and needs for support more clearly. These responses are listed and coded in Appendix G.

4.3.1 Additional supporting factors

When asked about additional factors that could benefit them, in order to remain engaged by their job, while managing ND employees, the seven managers who answered, most commonly referred to awareness, education and guidance, as well as relational aspects.

Recipients claimed that awareness, education and guidance were needed not only for themselves, but also for other employees. Suggested support factors for meeting these demands, in regards to managers themselves, included models or instructions such as situational leadership models, detailed knowledge of which approach is needed for managing ND employees in particular, and clear paths to workplace adjustments for ND employees. On a team or organizational level, managers suggested job coaches for all employees, guidance on neurotypical traits and how implicit stereotypes about what differs from "normal" can lead to discrimination, and the demand for trainings which are engaging in themselves and which connect people instead of boring, non-engaging ones that people barely listen to.

In addition, the managers stressed the importance of relationships and personal experience with ND employees. One manager called for transparency by employees about their neurodivergence, while another one suggested working groups where managers and employees could initiate conversations about neurodiversity.

4.3.2 Perceived impact of work with ND employees on engagement

While four participants voiced that working with ND employees affected their engagement negatively or that it was challenging, five participants saw more positive effects.

First, a manager stated that they believed it was important to balance the time spent among their employees and that if a ND employee demanded too much time, it caused conflict with other team members. Another recipient mentioned that, because of a lack of knowledge, they have been unsure before about how to act around ND employees and how to handle situations that occur due to their neurodivergence. Another one added that their

engagement would have been affected positively, if only they had had an easily accessible contact person who supported them. Similarly, one manager claimed that even though they are ND themselves, they have noticed that neurodivergence has different ways of presenting in each ND individual, and just like neurotypicals, every ND person is unique and complicated in their own way. They believed that in order to manage ND employees, a deep understanding of psychology and a desire to know people and listen to them is needed and that they themselves would have benefitted from guidance in the form of mentorship or therapy in order to feel secure in themselves and get second opinions while leading others.

Some other managers stated that managing neurodivergent employees had positive effects on their own engagement, for example because their own neurodivergence made it easy and they finally met someone who thinks like themselves. One other manager wrote that their employees knowing and sharing their diagnoses and needs, helped them immensely to address these needs and support their employees. Another participant shared, that while their job engagement remained somewhat unaffected, their engagement for people increased.

4.3.3 Additional comments

Lastly, managers were given the option to share any additional comments or thoughts about the survey and the general topic.

Some managers expressed their interest for the topics of neurodiversity and managerial support by commenting that they appreciated people who asked questions about neurodiversity and tried to educate about it, or by asking where they could find organizations that support managers of ND employees.

Others shared more of their expertise on neurodiversity. One manager even added a disclaimer that their answers may be affected by their job as a creator of neurodiversity programs and advisor on neurodiversity matters. Another manager demanded that organizations should further support neurodiversity by not only creating awareness about autism and ADHD, but by actively educating hiring staff about more subtle, harmful stereotypes, typically associated with ND individuals and considered to be out of the norm. Yet another manager reiterated how important it is for everyone in the company to create safe spaces for ND employees to talk about their neurodivergence and what makes them special, but that in order to do so, a change mindset and dedication to take a stand for diversity inclusion on the organization's part are needed. One manager agreed that understanding neurodiversity needs can only help improve a workplace and a team's performance, but also stated that they strongly believed that employees should be chosen according to their fit with the situation and team as well as their development potential, and that positive discrimination in favor of specific groups is not the way to build great teams.

4.4 Conclusion of the results

Overall, the results of the main study indicated that engagement levels of managers of ND employees whose organizations implement factors to support them, have higher engagement levels (M = 4.01) than those whose organizations do not (M = 3). To be more precise, the correlations between the individual factors and managerial engagement levels were explored.

The data shows that organizations often provide general supporting factors such as anti-discrimination training and people skills training. However, they rarely provide supporting factors directed specifically at helping managers navigate the particular challenges that managing ND employees brings about.

Independent variable	ρ (rho)	p
Neurodiversity/neuroinclusion training	-0.42	.153
Anti-discrimination training	0.16	.599
People skills training	0.46	.117
Neurodiversity program	-0.22	.470
Neurodiversity promotion	-0.44	.132
Contact person	0.29	.330
Support networks	0.47	.108
General management experience	0.14	.656
Neurodiversity management experience	0.04	.895
Own neurodivergence	-0.56	.048

Table 14: Overview of correlations

Factor \ Engagement	Negative: ≥ -0.11	Neutral: -0.1 – 0.1	Positive: ≤ 0.11
Support networks			0.47
People skills training			0.46
Contact person			0.29
Anti-discrimination training			0.16
General management experience			0.14
Neurodiversity management experience		0.04	
Neurodiversity program	-0.22		
Neurodiversity/ neuroinclusion training	-0.42		
Neurodiversity promotion	-0.44		
Own neurodivergence	-0.56		

Table 15: Overview of quantitative results

When asked to share which additional factors the managers believed to be beneficial for their engagement, the ones listed most often were along the lines of awareness, education, guidance and building relationships. Many respondents believed managing ND employees impacted their own engagement positively, however, others shared that the challenges it posed led to a decrease of their engagement. Lastly, respondents added that neurodiversity management should not only consist of supporting factors but that it should be a holistic concept that included education about implicit biases and the creation of safe spaces for ND individuals to talk about their neurodiversity. The additional, qualitative information was a valuable contribution to the following discussion of the results.

5 Discussion

In this chapter, the empirical findings from the main study will be combined and analyzed in relation with the findings from the pre-study and the literature, in order to provide a reasoning to derive a conclusion from.

This chapter provides an analysis of the explored relationship between engagement levels of managers of ND employees and supporting factors, as well as additional variables; including which factors have been identified, which ones correlate positively or negatively with engagement levels and a contextualization of the measured data. Indications for further, large-scale and controlled research shall be given, so that ultimately, validated recommendations can be offered to organizations on how they can support their managers of ND individuals, overcome obstacles in the organizational change towards more diversity and inclusion, and offer a more accepting workplace for ND employees.

In order to explain how the study's purpose was fulfilled in detail, the findings will be discussed and contextualized in the following chapters, starting with research questions one to two, continuing with questions three to four and ending with research questions five to six.

5.1 Supporting factors

This chapter aims to provide an answer to both research questions:

> **RQ 1:** *To what degree do the supporting factors correlate positively with engagement levels?*
> **RQ 2:** *How valuable do managers perceive the supporting factors to be, in relation to sustaining their engagement levels?*

Through answering research question 1, the hypothesis attached to it will be addressed as well:

> **Hypothesis a:** *The mentioned supporting factors correlate positively with managerial engagement levels.*

In addition, the measured correlation between the supporting factors and engagement levels among managers of ND employees will be compared to the managers' perception of the supporting factors' value for their own engagement.

5.1.1 Measured engagement

Before critically discussing and explaining the results of the main study in detail, a disclaimer must be made. None of the correlations mentioned below turned out to be statistically significant, meaning that no clear, valid claims can be made. Due to the small sample size and the design of the study, only exploratory results, or rather indications, can be provided. Therefore, further research, utilizing a larger sample size and experimental conditions that may even allow the determination of causation, is strongly encouraged. With the conduct of such research, the indications of this study may be proven correct or may as well be refuted. Therefore, the following analysis acknowledges that the results are merely indications and accordingly takes a critical stance towards them.

The data suggests that the engagement levels of managers who receive at least one supporting factor (M = 4.01) is higher than the engagement levels of managers who receive no supporting factors (M = 3.00). However, there was only one recipient who experienced no supporting factors from their organization, making the data basis for this assumption particularly weak. Thus, the correlation between supporting factors overall and engagement levels is yet to be explored in a valid manner. Similarly, it is recommended to conduct further dedicated research on whether managing ND employees truly leaves managers less engaged than managing NT employees. While qualitative research has been performed by Richards et al. (2019), highlighting and exploring the reasons for the negative lived experience of managers of ND employees, no research currently exists measuring the engagement levels among managers of ND employees and how they compare to the engagement levels of managers of NT employees. Based on the additional demands put on managers of ND employees (Richards et al., 2019), the assumption can be made that managers of ND employees experience more challenges and that they may feel less engaged due to feelings of being overwhelmed (Schaufeli & Enzmann, 1998). Valid statistical measures on the matter would solidify this research project as well, as its premise was built on the assumption that managers of ND employees need more support from their organization than managers of NT employees in order to retain their engagement. In addition, it must be acknowledged that work engagement is a complex concept, that organizations still struggle with, and that only 35% of employees have been found to be highly engaged (WTW, 2012). Therefore, a multitude of variables must be considered when exploring engagement, particularly in combination of the under-researched field of neurodiversity.

Nevertheless, this study indicates that some supporting factors correlate positively, and some negatively with engagement. Contrarily, the managers almost uniformly claimed that they

believed all of the supporting factors would be beneficial to their engagement levels, posing a disparity to the measured correlations. This will be discussed in detail in chapter 5.1.2, and adds to the critical analysis of the measured correlations.

5.1.1.1 Positive correlations

Two types of training correlated positively with engagement levels: anti-discrimination training exhibited a weak correlation, and people skills training exhibited a moderate correlation. Despite the lack of statistical significance, these results indicate that the presence of anti-discrimination training and people skills training go along with increased engagement levels. Both trainings were prevalent among most participant, and often even implemented frequently, which is not surprising, as both of them do not necessarily have to take place in a neurodiversity context, and are therefore more versatile than specific neurodiversity training. The positive effects of training may be explained by the fact that they provide knowledge and skills about how to act more inclusively, be more empathetic, compassionate and connect better with others. Both compassion and empathy were mentioned as important factors for managerial engagement in the pre-study. The ability to connect with their employees helps managers identify and reconcile critical interpersonal situations, allowing them to build trust (Kotter, 2001) and a psychologically safe environment (Watkins, 2016). According to Harter, Schmidt and Hayes (2002), working alongside colleagues one trusts, has positive effects on engagement, and so does the availability of opportunities to improve and develop oneself. Similarly, Knight, Patterson and Dawson (2017) have found out that personal resource building interventions, such as trainings, that increase self-perceived positive attributes, also increase engagement levels. This may explain why people skills training, which is focussed on providing managers with interpersonal skills, correlated more strongly with engagement than anti-discrimination training which first has to make individuals aware of the biases they possess, in order to decrease them, which may induce resistance (Aguirre & Alpern, 2014; Cameron & Green, 2019). However, one manager stated in the qualitative part of the main study, that guidance and education on how implicit stereotypes can lead to discrimination would be an engaging factor to them, as they managed ND employees, stressing the value of anti-discrimination training as well.

Personal managerial support has been indicated, but not statistically proven, to correlate positively with engagement levels. Namely, having a contact person for neurodiversity inquiries correlated with engagement to a weak degree, and having support networks for managers of ND employees to a moderate degree. Both of these measures provide guidance, either from an expert on the topic of neurodiversity or from peers who experience similar challenges. Guidance in regards to managing ND employees has been stated to be a positive

factor on engagement by multiple respondents in the qualitative part of the main study, and included the need to know how to access workplace adjustments and what approach is needed for working with ND employees. One manager also claimed that they believed groups where managers and employees can initiate conversations about neurodiversity to be engaging, extending the concept of the manager support group to include ND employees as well. This would allow ND individuals to take part in the conversation about neurodiversity, which is something that experts in the pre-study and IBM's neurodiversity initiative with its motto "Nothing About Us Without Us" (Lyckowski, 2022) emphasize to be of high importance. Networks among marginalized groups have been proven to be beneficial for their members, providing them with advice, information, and support to navigate a work environment where they are a minority (Benschop et al., 2015). Similarly, a group for managers of ND employees may help those managers to receive advice, feel supported and be more capable of fulfilling the demands posed by their work, which ultimately leads to higher engagement levels (Schaufeli & Enzmann, 1998). Next to peer assistance, this advice and support can also be provided by a contact person, such as a neurodiversity leader, as the experts in the pre-study claimed. Despite the indicated and perceived benefits (see chapter 5.1.2) of personal managerial support on engagement levels, as well as its recommendation by experts, these supporting factors were only available to few managers and should be implemented more broadly in order to examine their value.

5.1.1.2 Negative correlations

One can argue that the measures neurodiversity training, programs and promotion may induce resistance to change (Aguirre & Alpern, 2014; Cameron & Green, 2019) or bias and discrimination (Austin & Pisano, 2017; Krzeminska et al., 2019), as they are implemented mostly with the benefit of ND employees in mind, rather than their managers'. Especially the neurodiversity program and the neurodiversity promotion, aimed at creating more awareness and acceptance for ND employees, are catered more towards providing more opportunities for ND individuals, while their environment, including managers and other team members, must adapt and potentially change their prior beliefs, which may cause negative feelings. For example, one manager in the study showed some apprehension towards hiring policies for ND employees and claimed that they did not believe in "positive discrimination" in favor of ND individuals over NT ones.

On the other hand, qualities usually provided by specific neurodiversity training, awareness programs or promotion, were classified to impact engagement levels positively, both by experts in the pre-study and managers of ND employees. The pre-study experts stressed the importance of a neurodiversity program for an organization, recommending other organizations should start one if they had not yet, and claiming that the support it provided

to managers would help them retain their engagement levels. In the qualitative part of the main study, multiple managers stated that guidance, awareness, and education were factors they believed would help them feel engaged. Arguably, all of these factors can be provided by neurodiversity/neuroinclusion training, a neurodiversity program and neurodiversity promotion initiatives. In addition, when asked about the perceived benefit of these factors on their engagement levels, managers evaluated all of the three supporting factors positively. There is clearly a disparity between the measured results and the managers' perception and due to the lack of statistical significance of the results, it is unclear whether the results or the perception is wrong, which is why further, large-scale research is strongly encouraged. In the following, potential explanations for the negative correlations of the individual supporting factors with engagement levels will be explored.

Training can have negative effects on diversity and activate bias, spark backlash and trigger adversity to change, predominantly when the training is mandatory, and therefore forced upon its participants (Dobbin & Kalev, 2016). Being told to change and what to do, may cause managers to feel like they cannot bring their authentic selves to work or express themselves as they usually would, which are both important factors for job engagement (Kahn, 1990). When change is proposed or even enforced by the organization, and some may feel a resistance to said change (Aguirre & Alpern, 2014; Cameron & Green, 2019), negative emotions can arise due to the disparity and impact engagement negatively, which is in principle a concept describing satisfaction and enthusiasm at work (Harter, Schmidt & Hayes, 2002). In addition, one manager reported that often times, trainings were not engaging, but even boring, and that participants hardly paid attention. Contrary to the anti-discrimination and people skills training, only three managers in the sample had participated in neurodiversity/neuroinclusion training, so potentially, the negative results were more associated with the quality of training than with the fact that it was about neurodiversity/neuroinclusion. Here, it would have been beneficial to ask follow-up questions on the quality of the training, if it was mandatory or voluntary, or explore details qualitatively, to permit more in-depth analysis and understand the discrepancy between the correlations of the three different trainings.

While neurodiversity awareness measures, such as a neurodiversity program and internal neurodiversity promotion can help create awareness and increase knowledge, they may also put pressure on managers. Both a neurodiversity program and neurodiversity promotion aim at making neurodiversity more acceptable and creating the right work environment for ND employees, in order to be able to hire and retain them, and to benefit from the unique skills they can provide to an organization. For managers, however, working with ND individual can prove to be challenging (Richards et al., 2019) and if organizations prioritize neurodiversity and place added importance on the integration of ND individuals, managers

may experience increased pressure. Dealing with the particular challenges ND individuals often experience in a work context, such as difficulties with interpersonal communication and high desire for structure (Austin & Pisano, 2017; Morris, Begel & Wiedermann, 2015), as well as taking on added HRM responsibility (Richards et al., 2019), can be strenuous for managers, and the feeling of not being capable of meeting the organization's demands can leave them feeling less engaged (Schaufeli & Enzmann, 1998). One manager stated, that they found it difficult to balance the time and attention provided among their team if one individual demanded more support, and that they had experienced issues within their team because of it. In addition, Richards et al. (2019) observed that managers felt particularly drained if their ideas on how to deal with ND employees differed from the protocols supplied by their organization. These issues highlight once again, how important it is for organizations to keep in mind managers' needs when creating neurodiversity initiatives and to provide added support in order to avoid them being overwhelmed by the added responsibility, not only for the managers', but also their ND employees' sake.

5.1.1.3 Summary of measured engagement

In conclusion, research question one, *"To what degree do the supporting factors correlate positively with engagement levels?"*, can be answered by saying that four of the factors, namely anti-discrimination training, people skills training, a contact person for neurodiversity inquiries and support networks for managers, have been indicated to correlate positively with engagement, while three supporting factors, namely neurodiversity/neuroinclusion training, a neurodiversity program and neurodiversity promotion, have been indicated to correlate with engagement negatively. However, none of the correlations were statistically significant, so the research question cannot be answered with full confidence. Subsequently, hypothesis a, made in regards to research question one, *"The mentioned supporting factors correlate positively with managerial engagement levels*, must be rejected.

5.1.2 Perceived engagement

As can be seen in table 11, all supporting factors were perceived to be valuable for their own engagement by managers of ND employees. A support group for managers of ND employees, a contact person for ND inquiries, and neurodiversity/neuroinclusion training were perceived to be most valuable. This is surprising, as neurodiversity/neuroinclusion training was indicated to correlate negatively with engagement. But even the two neurodiversity awareness factors, neurodiversity program and neurodiversity promotion, that were measured to correlate negatively with engagement levels by indication, were perceived to be beneficial by managers. Conversely, the only two supporting factors perceived to have a negative effect on engagement by one manager, as can be seen in figure

6, were anti-discrimination and people skills training, which were previously indicated to correlate positively with engagement. As mentioned in chapter 5.1.1, it is impossible to say whether the managers' perception is deceptive or the indications from the measured results are wrong, due to the exploratory design of the study, lack of precision when asking for the factors and the small sample size. Intuitively, any support provided to managers should make it easier for them to cope with the demands put on them, and therefore make them feel more engaged (Schaufeli & Enzmann, 1998). In reality, the situation is more nuanced than this and further research could help clear the confusion about the discrepancy between the indicative, measured results and the managers' perception.

As mentioned in the qualitative answers of the main survey multiple times, managers believed guidance, awareness and knowledge in regards to neurodiversity would help them feel engaged, and arguably, all supporting factors aim to provide this to a certain degree. After all, they were chosen for the study for this exact reason.

Yet, the perception of the supporting factors may have been different, if the questions were asked differently. The questions may have been leading, in the way that they were introduced as supporting factors, and support is generally perceived as something positive. The participants were asked directly and flat out about their own perception, when potentially, more indirect ways of measuring it may have led to less biased results. The results may even have been different, if only the answers of those were counted, who actually had the supporting factors available to them, making the perception less hypothetical and more descriptive. Lastly, a qualitative research design could have provided more nuanced answers.

As neither the validity of the measured correlations, nor of the perceived effects can be guaranteed, further research is recommended to examine both. Nevertheless, research question 2, *"How valuable do managers perceive the supporting factors to be, in relation to sustaining their engagement levels?"*, was answered.

5.2 Additional factors

Going beyond the supporting factors mentioned above, this study also evaluated the two additional independent variables, managerial experience and personal traits. Although these are not the main part of the study, the information was useful to gather in order to get a sense of relevance for each participant's replies regarding the supporting factors, and the qualitative parts of the study opened up to a slightly broader scope. These topics will

therefore be acknowledged and discussed in addition to the main supporting factors, in order to strengthen the analysis on the engagement levels among managers of ND employees, as well as provide more data for future research.

5.2.1 Measured engagement

The hypotheses defined for the additional questions in the study objectives section of the method chapter were as follows:

> **Hypothesis b:** *Managerial experience correlates positively with engagement levels.*
> **Hypothesis c:** *Managers who are ND themselves, experience higher engagement levels than NT managers.*

Existing research contains little information regarding the specific topic of managerial engagement levels and impacting factors, and even less on the impact of neurodiversity. Therefore, broad, analogue comparisons were made to adjacent areas, in order to deduct the validity of the hypothetical statements. One of the main factors, which all areas of the study supported, was the fact that ND individuals can be reluctant to disclose their diagnosis to their employers/managers. This was mentioned by several authors and companies (Austin & Pisano, 2017; Craine, 2020; IBM, 2022b; Krzeminska et al., 2019), in the pre-study, and received several comments in the main study. Cunningham and Sagas (2004) mention the difference of surface-, and deep-level diversity, the difference being whether or not it is possible to conceal the identifying traits. Neurodiversity can be regarded as deep-level diversity, as it can be concealed a majority of the time; however, some of the aspects that are commonly related to certain diagnosis, can not. These preconceptions held in society, and the tendency to immediately connect certain mannerisms to various diagnosis and draw conclusions, has led to a lot of hardship and discrimination of ND individuals in the past, as well as high levels of under-, and unemployment (Austin & Pisano, 2017; Krzeminska et al., 2019; Sparkes et al., 2022). Due to the history of negative responses to their divergent traits, it is no surprise that most ND individuals learn to hide these at an early age, which includes not disclosing their neurodivergence, in an attempt to appear "normal".

Over the course of the study, it became clear that employees disclosing their neurodivergence to their employers would help their managers in several ways, both to be able to assist them, but also to make their own jobs easier, by learning what to do and how to act. Understandably, history has made it hard for ND individuals to disclose their diagnosis, but with the rise of acceptance and advancement, and the implementation of neurodiversity programs, it will hopefully become easier. At a glance, it is apparent that most neurodiversity-friendly companies stem from, or are in some way related to

technology. According to Austin and Pisano (2017), this could be due to the fact that the tech industry has always been approving of "nerds" and "odd-balls", accepting those that feel like they do not conform to society's norms. It could also be due to the fact that many ND individuals possess enhanced visual processing abilities, leading to superior pattern recognition, or a difference in perspective (Austin & Pisano, 2017; Craine, 2020; Krzeminska et al., 2019), both of which are valuable traits in the technology industry, particularly within computer programming.

Despite the increased acceptance in society, a commonly agreed upon fact, throughout the study, is that ND employees need to feel safe, and trust their managers, in order to feel comfortable with disclosing their diagnosis. Psychological safety is a pre-requisite for disclosing personal information of any kind (Watkins, 2016), which holds especially true for increasingly sensitive information. Several participants in both the pre-study and main study also mentioned the need for psychological safety, and the importance of having safe spaces for ND employees. Achieving psychological safety, however, requires trust between the manager and the employee (Watkins, 2016). According to Kotter (2001), some traits are more important than others for managers to possess, and communication skills are considered to be one of the most important, which also happens to be the key in building trust. Therefore, in order to increase the relational aspects, as desired by some of the participants, the managers should start by initiating communication, building trust, and creating psychological safety, in order for their ND employees to disclose their diagnosis. And as Schaufeli and Enzmann (1998) mention, knowing what is demanded of them is shown to help make it easier for the managers to manage overall, which then should apply to managing ND employees as well. In fact, since they can require even more, the knowledge of what those requirements are, is important in order for the manager to sustain their engagement levels, which is why they need to build psychological safety in order to attain the desired information.

Other than communication, there are many other abilities which potentially benefit managers and leaders to possess; hypotheses b and c focus on determining whether two of them, which are the managers' amount of managerial experience, both in general and regarding ND employees in particular, as well as their own neurodivergence, correlate with increased engagement levels, thereby determining if they are, in fact, beneficial.

Since experience in general is a good way of increasing one's capabilities (Epstein, 2021), gaining increased knowledge and skills through encountering various situations, it stands to say that it should reasonably increase a manager's ability to manage ND employees as well, since they likely have experienced many different situations, and have a variety of tools to use to manage them. However, this is not always the case, in fact, the opposite could also be

true, as Austin and Pisano (2017), Burnes (1996) and Drucker (2001) mention, that there are still quite a few managers who hold on to the old belief that there is one right way to manage people, and believe employees all "fit in the same box", and are therefore potentially not as open to adapting to individual's needs. Thereby, hypothesis b, suggesting that there is a positive correlation of managerial experience and their engagement levels, could not be proven, as the results were not significant, although a weak, positive correlation was indicated (see figure 9). Due to the large amount of fluctuation in this data set, this is not surprising, and determining whether or not this hypothesis is true would likely require a longitudinal study with a vastly larger sample size.

In order to move beyond the old beliefs and inspire adaptation, other perspectives and input are required when providing managers with tools to manage ND employees. One factor, which could have a lot of impact, is therefore to embrace the approach *"Nothing About Us Without Us"*, as IBM has done, for instance (Lyckowski, 2022). This was further emphasized by Lyckowski when responding to the pre-study, and other managers taking part in the main study, who also mentioned that their own neurodiversity made it easier for them to manage other ND employees. This was also the content of hypothesis c, based on both previous research and the qualitative data gathered as a part of the study. However, looking at the results from the empirical data on the resulting correlations of overall engagement levels compared with the managers' own neurodivergence making it easier for them to manage ND employees, this is not directly apparent, in fact, the opposite is indicated. The results point to NT managers exhibiting higher engagement levels than ND managers, and that there is a moderate, negative correlation between the overall engagement levels among managers who are ND. In retrospect, this is fairly logical, considering that the ND managers likely struggle with their own neurodivergence, thereby lowering their overall engagement score. What is surprising, however, is that the correlation between the overall engagement score and the managers' own neurodivergence *did* provide a statistically significant result, despite the small sample size; which indicates that managers who are ND themselves, experienced lower engagement levels than those who are NT. However, it is important to keep in mind that even though the correlation was statistically significant, the small sample size and the fact that the statistical test performed to measure the correlation is typically not deemed fit for the nominal variables used, impact the reliability of the results, and therefore they should not be viewed as scientifically verified. Nevertheless, it does present an ideal foundation for further research on the topic, preferably with a larger sample size and applying another statistical test.

5.2.2 Perceived engagement

The final objectives of the study are:

> **Q5:** *Which other factors and personal traits are perceived to be valuable for their own engagement by managers?*
>
> **Q6:** *How do managers perceive managing ND employees to impact their own engagement?*

These questions have no statistically calculated results, but rather seek to add some insight and perspective to the study. Through combining the answers received in the pre-study with literature and the provided examples from the qualitative questions at the end of the main survey, there are a few items to analyze in this section. Since the responses regard the participants perception, the answers are subjective, and potentially biased, which is why they are not used as a foundation for the main conclusion; however, due to the lack of research on the topic, any insight is potentially valuable in the future, which is why these areas have been included in the study, despite their subjective nature and lack of scientific validity.

Some of the factors and personal traits have been analyzed in the section above, but those were the ones currently in place, that were able to be compared to the engagement levels of the managers of ND employees. This section will look at which factors or personal traits are *perceived* to provide value for sustaining/increasing engagement levels, as well as some examples of the perceived impact of managing ND employees, both rewarding and challenging ones.

Several of the participants in the study said that they would benefit from supporting factors which help them create awareness, and provide education and guidance, with regards to managing and working with ND employees. Examples of these were leadership models, instructions, or guidelines, and information about different approaches to dealing with neurodiversity. They also mentioned specific things, such as clear directions for providing workplace adjustments for ND employees, job coaches for employees, education about recognizing and handling bias and implicit stereotypes, as well as engaging, interesting training sessions. Furthermore, they mentioned that they would like assistance on how to facilitate relationship-building, wishing to receive transparency from ND employees about their diagnoses and needs, or having working groups for managers and employees in order to initiate conversations about neurodiversity. A lot of these requests can be addressed by applying some of the techniques found in analogue topics of research, such as building trust through open communication, in order to provide a psychologically safe environment for their employees (Watkins, 2016), so that they feel safe enough to be transparent and share

their diagnosis, without fearing any potential repercussions or consequences. Personal qualities that were suggested in the pre-study as helpful for a manager in achieving this were: compassion, empathy, and understanding, as well as appreciating their employees for the work they do, and taking the time to give them recognition for it, not only commenting on things that are wrong or late. Additionally, a willingness to help others and a lifelong desire to learn were mentioned as two key traits for a manager to possess in order to sustain their own engagement levels when managing ND employees.

When it comes to how managing ND employees has been perceived to impact managers' engagement levels, five participants mentioned that they felt ND employees affected their engagement positively, while four participants expressed more negative views or challenges they faced. The negative experience of one participant was attributed to them having a hard time balancing the demands of the ND employees with the needs of the rest of the team, that it demanded too much time, which was unfair to the other employees. Another mentioned lack of knowledge leading to insecurities, and lack of guidance from a contact person, mentor, or therapist rendering them unable to come up with alternative solutions, the uneasiness causing their engagement levels to decrease. Something that has been a common thread throughout the study is ND individuals disclosing their diagnosis, which was mentioned as having an impact on their managers engagement levels as well. One participant said that they wished their employees would disclose their diagnosis, since it would make their job easier, and another one said that their ND employees being open and sharing their needs lead to a positive, engaging experience. Continuing to the positive experiences, some participants mentioned that, due to their own neurodivergence, working with ND employees was easy and engaging, one mentioned that they were happy that they had finally met someone who thinks like them, and one said that their job engagement was the same, but their people engagement had increased after managing ND employees. Lastly, one participant mentioned that they appreciate people asking them about the topic of neurodiversity, that they enjoy talking about it, increasing their own knowledge while simultaneously spreading knowledge.

6 Conclusion

Using available literature and two subsequent surveys, one mainly qualitative, and one mainly quantitative, this study explored the correlations between the engagement levels of managers of ND employees and supporting factors provided by their organizations, their managerial experience, and their personal traits. In addition, the managers' perceived value of the supporting factors, other factors, and personal traits deemed valuable, as well as the impact managing ND employees had on their engagement levels, were measured.

This research generated exploratory findings, which offer indications of, but no definite, valid results. These indicative results contribute to the field of neurodiversity research by providing additional data, to enable further research on how organizations can support managers of ND employees. This support is needed to help managers overcome obstacles associated with managing ND employees while remaining engaged, and ultimately, become better managers to their ND employees, contributing to a more inclusive work environment.

The conclusion of this study, answering the main research questions and the additional objectives of the study, is that the measured supporting factors, namely, anti-discrimination training, people skills training, contact person for neurodiversity inquiries, and support networks for managers, correlated positively with the engagement levels of the participants, whereas other supporting factors, explicitly neurodiversity/neuroinclusion training, neurodiversity program, and neurodiversity promotion, correlated negatively with the engagement levels. However, all of these correlations were weak to moderate, and not significant, therefore, they all remain provisional. Regardless of the negative correlations of some of the supporting factors, the perceived value of sustaining the managers' engagement levels was deemed positive, although these responses are subjective, and therefore any results are tentative at best.

The hypothesis that managerial experience would have a positive impact on the managers' engagement levels was not proven to be true, and the amount of years as a general manager, or as a manager of ND employees seem to not make much of a difference in the matter. Furthermore, ND managers seem to have a harder time feeling engaged, compared to NT managers, something that perhaps relates to the probable fact that they, just as other ND employees, may need different supporting measures than NT managers, and lacking these impacts their engagement levels.

The most commonly appearing item throughout the study, from the background, through the literature review, to the empirical data, was the reluctance of ND individuals to disclose their diagnosis, and the challenges that this creates for managers when attempting to manage them.

This reluctance is well founded in historical pre-conceptions and discrimination, and even though it has begun to ease up recently, disclosing their diagnosis may not be something ND individuals do until they feel safe enough to do so without facing the repercussions history has taught them to expect. Previous research indicates that psychological safety is an important factor in feeling comfortable enough to disclose any private information, and is something that requires trust, which is built by open communication and a willingness to learn and help. Therefore, this is a logical first step to take for any manager wishing their ND employees would disclose their diagnosis to them. Hopefully, this generates many positive side effects, one of them being an increased level of engagement, as the relational aspects between the manager and their employees increases.

All in all, the study indicates that some of the measured supporting factors seem to be associated with higher engagement levels among managers, and could therefore potentially be implemented by organizations in order to help sustain the engagement levels among managers of ND employees, thereby increasing their ability to employ more ND individuals. Nevertheless, the study only tested a few supporting factors, and some additional variables, and even though these could possibly impact managerial engagement positively, further research on a larger scale is encouraged in order to test and validate the uncovered indications.

6.1 Suggestions for further research

The scope of this study was quite limited, hence, a lot of demarcations were made at the beginning. Mainly, the impact on other co-workers working with ND employees could be evaluated with regards to their engagement levels, or other contexts. Additionally, looking at the cross-benefits for intersectionality and ND, as well as the wider benefits for the organization as a whole would be beneficial, with regards to increased profits from gaining skilled talent, as well as increased diversity, equity, and inclusion (DEI) and CSR initiatives. Taking a deeper look into existing regulations and legislature is also warranted, on both national and global levels.

Further research is needed on whether or not ND or NT employees have an actual impact on the engagement levels among managers, or if the correlations are purely incidental, a longitudinal study with knowing participants would probably be required in order to reach a significant result. The results regarding the correlation of engagement levels among managers who are ND themselves requires further research, since the statistical test performed to measure the correlation is typically not deemed fit for the nominal variables used. Therefore, a new study, adopting a larger sample and applying a different statistical

test is encouraged. It would also need to be verified if the difference in engagement levels between the managers who are NT and those who are ND, is confined to managers only, or if the same correlation applies to ND employees overall, in any type of position.

One of the respondents who were excluded from the calculation of the results of this study, due to not being a manager, and therefore not meeting the inclusion criteria, mentioned being the parent of two ND children, an alternative form of management. This introduced the reflection on the concept of management from a different perspective, which ultimately was beyond the scope of this study, but it presented the question of how the vast knowledge of parents, as a form of natural managers, could benefit research on the topic of neurodiversity going forward.

Talent Acquisition (TA) and hiring are both major topics when it comes to neurodiversity, since they often provide the first hurdle ND individuals face when applying for jobs. As such, there is a fair amount of research on this topic already, but there is room for improvement to further research in order to enable an even wider implementation of neurodiversity programs. Another phase of work which was not included, and which has not been mentioned in any of the researched literature that could be found, is the transition between different phases or roles. For example, it could be researched how to enable the on-boarding, promotion, return from leave, or other changes of positions for ND employees, just as the TA process has been evaluated and adapted, in order to ensure the correct people are able to perform their best in the correct place.

Lastly, change management is very important to take into consideration when it comes to any type of change, such as implementing a neurodiversity program, or adapting company guidelines in order to provide assistance to ND employees; because where there is change, there will generally also be resistance to it. Resistance to change, and other aspects of change management such as anchoring and education, therefore need to be carefully considered, and managed proactively, in order to increase the chances of success in any organizational change endeavor, presenting a rather large topic for further research.

6.2 Practical recommendations

This was not meant to be a handbook for managers of ND employees in any way, however, for those seeking to implement neurodiversity initiatives or make similar changes, but are uncertain of where to begin, this exploratory study could be helpful in providing a starting point. Therefore, the following section aims to suggest a few potential actions, which could

be implemented on an experimental level to sustain the engagement levels of those managing ND employees, based on the gathered insights and perceived value of potential aids by said managers.

The first suggestion is to embrace the motto "Nothing About Us Without Us", which means including ND individuals in shaping the plan and initiative. When it comes to supporting managers in particular, this inclusion ensures that the actions and decisions they make will be grounded in reality, and are truly helpful in achieving the desired results, rather than facing resistance for attempting to help, but doing it in the wrong way due to lack of knowledge and insight. The managers who were ND themselves reported having an easier time to manage ND individuals in turn, suggesting that it is valuable to include them in the process, in order to increase understanding and reduce the risk of frustration due to lack of knowledge or information. Furthermore, communication is a two-way street, which means that in order to gain trust from their employees, so that they will disclose their diagnosis and share their input, managers first need to initiate contact, showing that they possess empathy and compassion, as well as a genuine desire to help and learn. Building psychological safety is the first step on the path of implementing DEI efforts, such as a neurodiversity program, which is ranked as the most important factor for talent attraction and retention according to WTW (2022). Having the right people to address long-term skill shortages from the *"great resignation"* is vital in order to establish organizational stability (Bremen, 2022), suggesting that there is value for any and all organizations in learning how to enable it.

Secondly, educating and supporting every employee is important, not less so for managers themselves. Trainings on various topics of diversity and discrimination can therefore be considered almost mandatory in any workplace, however, the effectiveness of the results vary drastically. Since providing education and guidance is a must, but mandatory trainings are often considered boring, and a lack of motivation impacts the effectiveness of the intended outcome, alternative methods need to be put into use. One example of how this can be done is the IBM neurodiversity ally badge (Credly, 2020; Williams, 2020), where employees are not forced to participate in trainings, it is all voluntary, but they are incentivized to do so by being offered rewards in different ways, spurring a motivation to partake and learn.

Finally, the study indicated that a support function for managers, such as a contact person or therapeutic assistance, is desired by many and appreciated by those who have access to it. The third suggestion is therefore to make sure that the neurodiversity initiative is not focused solely on the ND individuals themselves, but that every level is considered and supported, in order to enable the support of ND employees in the end. Previous research shows that managers who are required to handle things they are not equipped for, can feel overwhelmed and become frustrated, potentially even get burnt out (Richards et al., 2019). That is not

helpful for anyone, not the ND employees, their managers, nor the organization as a whole. Hence, in order to ensure successful DEI implementations, increasing talent attraction and retention among other benefits, organizations need to make sure that the managers of ND employees are properly equipped to handle what is required of them, by providing them with proper support, education, and guidance.

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A Contact Template: Pre-study

Hello!

I noticed you are working with the neurodiversity program at [company] and I would be really interested in learning more about it.

My name is [insert name] and I am a Master's student in Management at Lund University, Sweden. For our Master's thesis, me and my partner [insert name] are researching how managers of neurodivergent employees can be supported in their work, and how to sustain their engagement; in order to contribute to the end goal of making it easier, and more sustainable, for organisations to hire neurodivergent employees.

We are therefore looking for experts on neurodiversity in the workplace who are willing to take part in a brief 10-15 minute online survey.
We believe that you have a lot of unique knowledge to contribute on the matter, and would greatly appreciate your input!

Just reply to this message if you are interested in taking part in our study, or want to know more!

Thank you!

Best,
Madeleine & Nora

PS. Please feel free to forward this message to anyone else who might seem like a good fit, and ask them to get in touch, or let me know if there is someone else you think I should contact as well. DS.

B LinkedIn post for spreading the main survey

This #Neurodiversitycelebrationmonth, and for our master's thesis, me and Nora are researching how organizations can support their managers, so that they in turn can support their #neurodivergent employees.

In order to do this, we need to gather some input from the managers of neurodivergent employees, and for that, we need the support of our networks!

If you have experience on the matter, we ask you to please respond to our 10 - 15 min survey in the link below, and if not, we ask you to please help out by spreading the word to others!

https://lnkd.in/dCJZQxNe

Thank you in advance for your help!

If you have any questions, please don't hesitate to send us a DM, or email us at: msallstrom94@gmail.com nora.scheidler@online.de

#NothingAboutUsWithoutUs #Neurodiversity #Management #Leadership

C Pre-study survey

Neurodiversity and management support

Hello!

Thank you for taking part in this survey regarding the support and engagement of managers in a neurodiverse workplace for our Master Thesis.

This part of our study aims to gather expert knowledge, identifying various aspects that support engagement levels of managers working with neurodivergent employees. The resulting aspects will then be used to enable our further research of the topic, testing our hypothesis by getting input from managers in the applicable situation.

The survey is completely confidential. The information will only be used for our study and the specific replies will not be shared with anyone else. The identified aspects will be used for our research, and summarized conclusions or examples may be used for the written report, but will not be shared with a third party in any other format.

Thank you for your help!

/Nora & Madeleine

1	Which company do you work for?
2	What is you current position in the company?
3	How is this role related to the neurodiversity initiative at the company?
Neurodiversity initiative	
4	Are the managers' needs considered when creating & developing the neurodiversity initiative? Any types of supporting functions in place, to help managers who are responsible for the working environment and job satisfaction of neurodiverse employees.
5	Which results have you seen from your neurodiversity initiative so far?
Management and Neurodiversity	
The supportive functions that are currently implemented.	
6	Please describe the various supportive functions you have in place for the managers of neurodivergent employees.
7	Please further explain the supportive functions focused specifically on sustaining the engagement levels of managers of neurodivergent employees, if any. *Engagement refers to the level of enthusiasm and dedication the manager feels toward their job.
Management and Neurodiversity	
In your opinion, what do you believe to be the most valuable aspects for managers, in order to sustain their engagement levels. (Engagement refers to the level of enthusiasm and dedication the manager feels toward their job.) This is the main purpose of our study, so please be as elaborate and specific as possible when answering, thank you!	
8	Which support functions do you believe managers of neurodivergent employees need, to sustain their own engagement levels?
9	Which support functions do you believe managers of neurodivergent employees need, to sustain their own engagement levels?
10	Out of the aspects you mentioned in the questions above, which do you consider the top three most important ones?
Concluding comments	
11	Do you have any additional comments or thoughts you would like to share with us?

Thank you so much for taking the time to help us with our research, we are extremely grateful that you were willing to share your thoughts and experience with us!

/Madeleine & Nora

Pre-study: Survey

D The UWES template

English version

Work & Well-being Survey (UWES) ©

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy* *(VI1)*
2. _____ I find the work that I do full of meaning and purpose *(DE1)*
3. _____ Time flies when I'm working *(AB1)*
4. _____ At my job, I feel strong and vigorous *(VI2)**
5. _____ I am enthusiastic about my job *(DE2)**
6. _____ When I am working, I forget everything else around me *(AB2)*
7. _____ My job inspires me *(DE3)**
8. _____ When I get up in the morning, I feel like going to work *(VI3)**
9. _____ I feel happy when I am working intensely *(AB3)**
10. _____ I am proud on the work that I do *(DE4)**
11. _____ I am immersed in my work *(AB4)**
12. _____ I can continue working for very long periods at a time *(VI4)*
13. _____ To me, my job is challenging *(DE5)*
14. _____   I get carried away when I'm working *(AB5)**
15. _____ At my job, I am very resilient, mentally *(VI5)*
16. _____ It is difficult to detach myself from my job *(AB6)*
17. _____ At my work I always persevere, even when things do not go well *(VI6)*

* Shortened version (UWES-9); VI= vigor; DE = dedication; AB = absorption

UWES template

E Main study survey

Managing neurodivergent individuals

Dear participant,

Thank you for taking part in this study for our Master's thesis in Management at Lund University.

This questionnaire is designed to research how You, as a manager of neurodivergent employees, experience your work, and how you are supported by your organization. The survey will take approximately 10 - 15 minutes to complete. Please respond frankly and honestly.

Your responses will remain confidential and be used solely for academic purposes. Only members of this research team will have access to the complete information you share.

Sincerely,
Madeleine & Nora

What is neurodiversity?

Neurodiversity refers to the diversity of human minds and the wide variety of individual differences in neurocognitive functioning.

Neurodivergent refers to an individual who has a mind that functions in ways that are different than what's considered "normal" in society. This includes people with developmental, individual, psychiatric, or learning disabilities, such as autism, ADHD, dyslexia, and many more.

General questions							
1	What is your age?						
	< 18	18-24	25-34	35-44	45-54	55-64	65+
2	What is your gender?						
	Male	Female	Non-binary	Other	Prefer not to say		
3	Do you consider yourself a neurodivergent individual?						
	Yes, I have a diagnosis.	Yes, but I am undiagnosed/ self diagnosed.	Not sure.	No.	Prefer not to say.		
4	Are you working in a managing role?						
	Meaning that you have any management or leadership responsibilities towards other people (a team, division etc.).						
	Yes	No					
5	Are you managing/or have managed neurodivergent employees?						
	Yes, they have disclosed their diagnosis to me.		I am not sure, but I believe some might be.		No.		
6	How many years of experience do you have:						
	As a manager in general						
		< 1	1-4	5-9	10-14	15-19	20+
	As a manager of neurodivergent employees						
		< 1	1-4	5-9	10-14	15-19	20+
7	Which form of neurodivergence applies to your employee(s)?						
	ASD (Autism Spectrum Disorder)	ADHD (Attention Deficit Hyperactivity Disorder)	Dyslexia	Dyscalculia	DCD (Developmental Coordination Disorder) / Dyspraxia	Tourette syndrome	Uncertain	Other…

Assessment

The following nine statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, check the box for "never" in the space after the statement. If you have had this feeling, indicate how often you felt it by checking the box which best represents how frequently you feel that way, according to the descriptions below.

0 - Never
1 - Almost never (A few times a year or less)
2 - Rarely (Once a month or less)
3 - Sometimes (A few times a month)
4 - Often (Once a week)
5 - Very Often (A few times a week)
6 - Always (Every day)

8	At my work, I feel bursting with energy						
	At my job, I feel strong and vigorous.						
	I am enthusiastic about my job.						
	My job inspires me.						
	When I get up in the morning, I feel like going to work.						
	I feel happy when I am working intensely.						
	I am proud of the work that I do.						
	I am immersed in my work.						
	I get carried away when I am working.						
	Never	Almost never	Rarely	Sometimes	Often	Very often	Always

Supporting factors

Please think about how your organization supports you in managing your neurodivergent employees.

9	Provided training				
	How often do you partake in training on:				
	Neurodiversity/neuroinclusivity				
	Anti-discrimination				
	People skills (empathy, compassion etc.)				
	Never	Once	Every other year	Every year	Every month

10	Neurodiversity awareness	
	Does your organization:	
	Have a neurodiversity program	
	Actively promote neurodiversity internally	
	Yes	No

11	Managerial support	
	Do you have access to:	
	A contact person for neurodiversity inquiries	
	Internal support networks for managing neurodiversity	
	Yes	No

Supporting factors						
Please think about the following factors again. To what degree do you BELIEVE they could impact your engagement* levels at work, even if they are currently not implemented? *Engagement refers to the level of enthusiasm and dedication someone feels toward their job.						
12	Provided training					
	Neurodiversity/neuroinclusivity					
	Anti-discrimination					
	People skills (empathy, compassion etc.)					
	+ +	+	Neutral	-	- -	
13	Neurodiversity awareness					
	Your organization having a neurodiversity program					
	Your organization actively promoting neurodiversity internally					
	+ +	+	Neutral	-	- -	
14	Managerial support					
	Having access to a contact person for neurodiversity inquiries					
	Having internal support networks for managing neurodiversity					
	+ +	+	Neutral	-	- -	
Final comments						
15	Are there any additional factors that you believe would benefit you, in order to remain engaged by your job, while managing neurodivergent team members? If so, please name them and describe them briefly.					
16	Do you feel that managing neurodivergent employees is affecting/did affect your engagement in any way, either positively or negatively? If so, please name them and describe them briefly.					
17	Do you have any other comments or thoughts you would like to share with us?					

Thank you so much for taking the time to help us with our research, we are extremely grateful that you were willing to share your thoughts and experience with us!

Sincerely,
Nora & Madeleine

Main study: Survey

F Quantitative data - numerical coding tables

Original values	No	Yes
Numerical coding	0	1

Neurodivergence/neurotypicality

Original values	<1 years	1-4 years	5-9 years	10-14 years	15-19 years	20+ years
Numerical coding	1	2	3	4	5	6

Management experience

Original values	Never	Almost never	Rarely	Sometimes	Often	Very often	Always
Numerical coding	0	1	2	3	4	5	6

Measured engagement

Original values	Never	Once	Every other year	Every year	Every month
Numerical coding	0	1	2	3	4

Supporting factors

Original values	- -	-	Neutral	+	+ +
Numerical coding	-2	-1	0	1	2

Perceived engagement

G Qualitative data - coding tables & responses

Coding scheme				
1st cycle Descriptive coding		2nd cycle Pattern coding (categories)		
Support	S	Education & Guidance		E&G
Training	T			
Communication	CM	Psychological Safety		PS
Diversity & Inclusion	D&I			
Diagnosis disclosure	DD			
Safety	SF			
Personal Traits	PT	Capabilities		C
		Further Research		FR
Talent & Acquisition	TA			

Coding abbreviations & categories

The two respondents for the pre-study were named "Respondent 1" and "Respondent 2", as mentioned in the method chapter, this table corresponds to that one accordingly. The table below includes the most relevant replies for the definition, analysis, and discussion of the various parts of the study. Some replies have been omitted due to the reply lacking relevance because of inadequate definition of the question, leading to misunderstanding. This was then corrected for the main questionnaire.

Respondent 1	Coding		Respondent 2	Coding	
	1st cycle	2nd cycle		1st cycle	2nd cycle
Managers' needs taken into consideration?					
Yes	S	E&G/PS	Yes	S	E&G/PS
Results from the neurodiversity initiative so far					
Improved accommodation support	S	E&G	More ND people are coming out as they feel safe, when you make things neurodivergent friendly, you make them human friendly	SF/DD	PS
Better understanding of ND by managers	PT	C/S			
Improved interviews for ND candidates and others	TA	FR			

Respondent 1	Coding		Respondent 2	Coding	
	1st cycle	2nd cycle		1st cycle	2nd cycle
Mentioned supporting factors					
TA/hiring	TA	FR	Formal training modules for managers & recruiters on how to be neuroinclusive	T	E&G/ PS/FR
1-1 support for ND concerns	S	E&G	Internal websites/ support networks	S/SF	E&G/ PS
Accommodation program	S	E&G	Virtual safe spaces	SF	PS
Enablement	S	E&G	"Nothing About Us Without Us"	S	E&G
Factors focused on managerial engagement					
Provided education & training	T	E&G	Open communication	CM	PS
ND program creates excitement	CM	PS	ND Global advancement leader available for support	S	E&G
			Training	T	E&G
Beneficial personal traits					
Compassion	PT	C	Empathy	PT	C
Understanding	PT	C/PS			
Empathy	PT	C			
Life long desire to learn	PT/CM	C/E&G			
Wanting to help employees succeed	PT/ CM/S	C/PS/ E&G			
The three aspects considered most important					
Compassion	PT	C/PS	Teamwork	S	E&G
Understanding	PT/CM	C/PS	Empathy	PT	C
Empathy	PT	C	Appreciation	CM	PS
Additional comments					
Recommend to start an ND program for all companies without one	S	E&G	Request to view 3 min video on neurodiversity	D&I	FR

Pre-study: Gathered data & coding

All respondents of the main survey were given a number based on the order of which they filled out the questionnaire, starting at one (1). The respondents who opted not to reply to the qualitative parts of the survey have been omitted from the table.

Respon-dent	Response	Coding	
		1st cycle	2nd cycle
1	What would benefit me the most is if my team members are open, transparent and talk about their neurodiversity.	DD/CM/D&I	PS
3	More awareness of what approach is needed. Situational leadership models have helped but understanding of specifics would be better. Personal experience/relationships has also informed my understanding.	S/CM/PT	C/E&G
	With a group of employees, I feel it is important to 'be there' for all of my team. It is important to balance the time spent with individuals. If someone is demanding too much time and attention this has been an issue with other members of a team.	S/PT/D&I	E&G/C
	Understanding the needs of neurodivergent employees can only help to improve a workplace and the performance of a team. However, I strongly believe that a person should be employed because they are the best candidate for the situation, that they can develop personally and add to the team. I believe positive discrimination in favour of specific groups is not the way to build great teams.	PT/D&I	C
5	We have a job coach for all employees which is helpful.	S	E&G
	I am neurodivergent and so it was easy [to manage ND individuals].	D&I/PT	C
6	I finally met someone who thinks like me	D&I/PT	PS/C
7	Awareness and acceptance. A clear path to access workplace adjustments	S	E&G
10	The biggest problem with any type of training is that they are usually boring and not engaged at all. I've seen people barely listen and get through. They need to engage hearts and minds to make a difference. They need to connect people.	T/CM	E&G
	It challenges me to find better ways of working with people. I have adhd, but even amongst those peers, the presentation is always unique and varies depending on the pressures that are affecting the individual. It's taught me that whether someone has ND or not, they are all complicated and unique, and the balance of managing a human being effectively whilst still treating them requires a deep understanding of psychology and a desire to see and know people, to listen. Managers of other people should be solid in themselves if they want to lead others. This is obviously ideal, a goal, maybe a fantasy for most. Lol. I believe people who manage others should have guidance through mentorship and/or therapy, if only just to have a second opinion. I've managed over 100 people at over and I wish I knew that then!	PT/S/CM/SF/D&I	PS/E&G/C
	I appreciate that there are people who are asking these questions and trying to educate.	CM/T/D&I	PS/E&G
11	Guidance on neurotypical traits and stereotypes. People have been denied jobs because they don't hold eye contact an indeterminate amount for example.	T/S/TA	E&G/FR
	Having employees who know their diagnosis and are willing to share it immensely help me supporting them. Their needs can be clearly stated and addressed.	DD/CM	PS
	Neurodiversity training can't stop at knowing about ADHD or ASD. Harmful stereotypes surrounding eye contact, small talk, social patterns, humor etc all need to be actively discussed with hiring staff. I've never read a role description requiring all of the above, but I've seen people denied promotions or career moves based on the above. It's wrong and harmful, yet subtle enough that it isn't always considered discrimination.	D&I/CM/S/T/PT/TA	PS/E&G/C
12	Working group for managers and employees to talk about neurodiversity	S/D&I	E&G
	[Managing ND individuals has increased…] My engagement for people. Not for the job (that is somewhat unaffected)	D&I	PS
	It´s so important that neurodivergent people tell about their situation and can openly discuss what makes them special. That is important for anyone in the company. Therefore companies need to be open, create a safe place where everybody can trust others, have a change mindset and stand in for diversity and inclusion in general	D&I/CM/SF/PT	PS/E&G/C
13	It would affect in a good way if there was a contact person who I could easily reach out to for support.	S	E&G

Main study: Gathered qualitative data & coding