

# Impact of an Innovation and Inclusion Climate on Job Satisfaction

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# Impact of an Innovation and Inclusion Climate on Job Satisfaction

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# Master of Science in Biotechnology Master of Science in Industrial Engineering and Management

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#### Abstract

The world is changing, driven by forces such as global economic and financial crises, climate change and global population growth (Friedli, Basu, Bellm, & Werani, 2013). The dynamic and turbulent business environment of today has challenged companies to survive, let alone flourish (Battistelli, Montani, Odoardi, Vandenberghe, & Picci, 2014; Chowhan, Pries, & Mann, 2017; Javed, Naqvi, Khan, Arjoon, & Tayyeb, 2017; Lauser, 2010). In such an environment, in order to be successful companies have to be innovative-to be able to offer new products or services to meet changing needs and expectations (Cassell, Božic, & Ozretic-Došen, 2015; Javed et al., 2017; Wan, Williamson, & Yin, 2015). Instead of developing new ideas and looking for new markets, many companies are concentrating on continuously improving deadlocked processes and sales flows (Friedli et al., 2013). Therefore, each company should exploit and optimise their current products, as well as leverage innovation as a cornerstone of sustainable growth and profitability (Friedli et al., 2013). It has been shown that intrapreneurship and its resulting innovative corporate climate can lead to far-reaching positive consequences for an organisation. In combination with an increasingly important innovation culture, population projections indicate that workforces will become increasingly diverse (Roberson, Holmes, & Perry, 2017), which brings the challenge of channelling this diversity into beneficial outcomes with an inclusive climate (Lizano & Mor Barak, 2015; Shore, Cleveland, & Sanchez, 2017).

When these innovative and inclusive climates are present, researchers have focused heavily on performance outcomes (Chung et al., 2016; Gawke, Gorgievski, & Bakker, 2017a; Shore et al., 2011). However, success for organisations should be measured not only in terms of performance but also by how the employees feel about their work in the form of engagement, stress or satisfaction (Hauff, Richter, & Tressin, 2015). Currently it is not clear how these constructs are related. More research is needed about the nature of the relationship between an innovation and an inclusion climate, employee engagement, job stress and job satisfaction. Therefore, this research focused on combining the different constructs and took a closer look at the fundamental behaviours required for an innovative and inclusive climate. As such, it was guided by the overarching research question:

# "How does a climate for innovation and a climate for inclusion impact job satisfaction through employee engagement and job stress?"

The research design adopted for this study comprised two distinct studies and followed a sequential explanatory mixed methodology (Bryman, 2015). Qualitative research (study two) was used to explain and interpret the findings of the quantitative study (study one).

The qualitative results helped to gain a deeper understanding of the relationships between the constructs. A theoretical framework based on Job Demand–Resource (JD-R) theory (Bakker & Demerouti, 2017; Breevaart et al., 2014) was developed to explore the impact of climate for innovation and climate for inclusion on job satisfaction. The resulting hypotheses for study one and detailed research questions for study two were then used to address the overall research question.

Study one conducted a quantitative analysis with 68,549 employees of PharmXO who participated in the company's Global Employee Opinion Survey. Structural equation modelling was used to test the model developed during the literature review. The second study aimed to provide further information about the reasons for the relationships found in study one, and therefore involved an exploratory qualitative study design, utilising semi-structured in-depth interviews with employees of PharmXO. A total of 13 interviews were conducted in the department PharmXO-I, which provided an innovative and diverse work environment. The thematic analysis approach defined by Braun and Clarke (2006) was used to identify themes related to the research questions.

In summary, the findings show that an innovative climate has a strong influence on employee engagement, which increases job satisfaction as a result. It could be seen that employee engagement serves as a strong mediator between climate for innovation and job satisfaction. The innovative climate enables employees to be creative and identify with their task and see their own personal contribution. This not only enhances their self-esteem throughout the company's social structure but also gives them intrinsic engagement and satisfaction to continually strive for the company. The effects of climate for innovation on job stress were mixed, and it was shown that an innovative climate can, on the one hand, raise time stress because of high time consumption with fewer resources but, on the other, can lower the sense of time pressure because of high motivation and engagement. It emerged that an innovative climate has a particular impact on emotional job stress in the form of frustration, anger and anxiety because of overstrain, uncertainty and no management support.

The findings further show that climate for inclusion has a positive effect on employee engagement because of the safe, trusted, included and valued feeling within teams. An inclusive climate enabled employees to identify with their teams and work tasks, which led them to feel that they are valued constituents of the company, and provided intrinsic motivation. The effects of climate for innovation on job stress were also mixed and showed that a climate for inclusion mainly influences emotional job stress in the form of frustration and anger because of exclusion, not being heard, lack of respect and perceived unfairness.

This research provides deep new insights into innovative and inclusive corporate cultures and their effects on employee engagement, job stress and job satisfaction. In addition, it contributes to the theoretical development of JD-R theory and will help companies to sustainably promote and maintain employee wellbeing, engagement and satisfaction with the help of innovative and inclusive corporate cultures.

## **Certification of the Dissertation**

I certify that the ideas, interviews, survey work, results, analyses and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award.

Signature of Candidate

Basel, 10.10.2019

Date

ENDORSEMENT

Signature of Principal Supervisor

Date

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# Chapter 1

# INTRODUCTION

#### 1.1 Introduction

This first chapter contains information about the background, motivation and relevance of this research. It shows the core purpose and scientific embedding of the research, the research methodology and thesis structure overview. Figure 1.1 provides an overview of the chapter structure.



Figure 1.1: Outline of Chapter 1 Source: Developed for this research

#### 1.2 Research Background

The world is changing, driven by forces such as global economic and financial crises, climate change and global population growth (Friedli et al., 2013). The dynamic and turbulent business environment of today has challenged companies to survive, let alone flourish (Battistelli et al., 2014; Javed et al., 2017) In such an environment, in order to be successful companies have to be innovative—to be able to offer new products or services to meet changing needs and expectations (Cassell et al., 2015; Javed et al., 2017; Wan et al., 2015). Instead of developing new ideas and looking for new markets, many companies are concentrating on continuously improving deadlocked processes and sales flows (Friedli et al., 2013). However, to focus only on proven and existing processes, services or products leads to potentially catastrophic results, as seen in the changing composition of the Fortune 500 companies (Deloitte Digital, 2015); almost 88% of the companies from the 1955 list are no longer listed 60 years later because they have been merged, acquired or, in most cases, are either bankrupt or no longer significant (Deloitte Digital, 2015). Therefore, each company should exploit and optimise their current products as well as leverage innovation as a cornerstone of sustainable growth and profitability (Friedli et al., 2013).

Historically, companies buy, merge or partner with established innovative companies to increase market share and competitiveness, but the same results can also be achieved with an internal innovative climate (Menzel, Aaltio, & Ulijn, 2007). Among the most innovative and successful companies, such as 3M, Apple and Google, a phenomenon can be observed where organisational members act like entrepreneurs but are still employees of an organisation (Dess & Lumpkin, 2005; Kanter, 1983; Lumpkin, Cogliser, & Schneider, 2009). The continued economic success of these organisations has drawn the interest of business research, which coined the term "intrapreneurship" (Bitzer, 1991; Covin & Slevin, 1991; Dess, 2003; Ireland, Covin, & Kuratko, 2009; Pinchot, 1985; Zahra, Filatotchev, & Wright, 2009). It has been shown that intrapreneurship and its resulting innovative corporate climate occurs in business practice, often with far-reaching positive consequences for an organisation (Zehir, Can, & Karaboga, 2015). A climate for innovation is a simple and especially powerful approach to encourage innovation through a company's existing employees. An innovative climate focuses on the people within an organisation and supports them in creating, developing and scaling their existing ideas (Bierwerth, Schwens, Isidor, & Kabst, 2015; Buekens, 2014; Menzel et al., 2007), which can lead to higher organisational performance (García-Buades, Ramis-Palmer, & Manassero-Mas, 2015; Hwang & Hopkins, 2015; Karmeni, Hamadi, Mesri, & Mimoun, 2017). This makes an innovation climate a phenomenon relevant to both research and business practice.

As a part of the impact of external forces and the resulting emergence of innovative companies, the increasing interdependence across geographic borders is considered as one of the fundamental trends in the economy (Passaris, 2006). Therefore, diverse teams are becoming an important component of international cooperation in the wake of demographic change and the globalisation of the workplace (Meckl, 2014). Globalisation is understood as a process of political and economic integration, which intensifies the interdependencies between different regions of the world (Widuckel, Molina, Ringlstetter, & Frey, 2015). Globalisation of the workplace requires more interaction between people from different walks of life, different cultures, beliefs and backgrounds than ever before. People no longer live and work in an isolated marketplace and are now part of a global economy, with competition from almost every continent (Meckl, 2014). This is especially true for international companies that have sites around the world. Employees are transferring between sites and are more and more able to work across the globe with the help of innovative communication technologies. As a result, different cultures and mindsets are coming together in one workplace. Therefore, it is particularly important for work teams to have an inclusive culture to maintain a positive work climate (Brimhall et al., 2016). Several researchers have reported that employees' perceptions of inclusion are related to organisational outcomes such as performance, organisational commitment and employee wellbeing (Acquavita, Pittman, Gibbons, & Castellanos-Brown, 2009; Barak & Levin, 2002; Findler, Wind, & Barak, 2007; Hwang & Hopkins, 2015; Mor Barak, Levin, Nissly, & Lane, 2006). However, inclusion is still in its infancy within the organisational literature which makes it an increasingly important consideration for businesses and a topic worthy of further research.

In analysing organisational performance, researchers have focused heavily on performance outcomes (Chung et al., 2016; Gawke et al., 2017a; Shore et al., 2011). However, success for organisations should not be measured only in terms of performance but also on how employees feel about their work and the company (Hauff et al., 2015). As part of the humanisation of work, job satisfaction is currently gaining a great deal of interest in organisational practice. The increasing work intensity and individualisation of the employee as well as the effects of demographic changes are changing companies (Genov, 2014). Job satisfaction is one of the core concepts in organisational psychology and is understood as an employee's subjective attitude towards their work, the workplace and the organisation (Özpehlivan, Acar, & Halsall, 2016). Therefore, job satisfaction can be seen as an indicator of the quality of professional life. Some authors have already dealt with the concrete effects of job satisfaction. Stock and Hoyer (2000) and Stock-Homburg (2012) showed the positive effects of existing job satisfaction on employee behaviour towards customers. Felps et al. (2009) confirmed the positive impact of job satisfaction on commitment, and Wright, Cropanzano and Bonett (2007) showed that higher job

satisfaction improves employee performance. With these results, job satisfaction is increasingly considered to be an essential business focus and a significant prerequisite for employee identification and retention. Job satisfaction is a key factor determining a company's success or failure, and serves as a useful contribution to overcoming workforce adaptation issues and facilitating skill development and growth potential at the employee level (Beck, Bonn, & Westermayer, 2005).

As perceptions of innovation and inclusion in the workplace have been found to influence outcomes, such as job satisfaction, the focus of the current research will be on this vital indicator. There is still no widespread agreement though several theories are proposed in the literature which start to clarify the relationship between job satisfaction and climates for innovation and inclusion. One recently developed theory by Bakker and Demerouti (2007) is the Job Demand-Resource (JD-R) theory as an extension of the JD-R model which was introduced in the literature 15 years ago (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Since then, the model has been applied in thousands of organisations and has inspired hundreds of empirical articles (Bakker & Demerouti, 2017; Bakker, Demerouti, & Euwema, 2005; Bakker, Demerouti, & Sanz-Vergel, 2014; Nahrgang, Morgeson, & Hofmann, 2011; Rodríguez-Muñoz, Sanz-Vergel, Demerouti, & Bakker, 2014). The core principle of JD-R theory is the assumption that every job can be divided into two general categories-job demands and job resources-which are used to predict organisational outcomes, such as performance, and individual outcomes, such as job satisfaction. These two categories incorporate different specific demands and resources depending on the context (Bakker & Demerouti, 2017; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Job demands and resources are applicable to a variety of occupations, such as product- or people-related work environments (Bakker & Demerouti, 2017). The two categories of work characteristics (job demands and job resources) evoke two relatively independent psychological processes: the motivational and health impairment pathways. These two pathways are used to measure the impact of job demands or job resources on organisational and individual outcomes. The motivational pathway can be connected with constructs such as organisational commitment or employee engagement, and the health impairment pathway has been linked with exhaustion or stress at work. However, the influence of both pathways on the relationship between climate for innovation or inclusion and job satisfaction is still relatively unclear. Overall, the JD-R theory provides a solid foundation to measure the influence of specific research areas, such as climate for innovation or climate for inclusion, on organisational outcomes.

As highlighted previously, the climates for innovation and inclusion have positive effects on an organisation's success (Acquavita et al., 2009; Barak & Levin, 2002; Findler et al., 2007; Friedli et al., 2013; Hwang & Hopkins, 2015; Mor Barak et al., 2006). However, the direct influence these climates can have on employees within a company is relatively unexplored (Gawke, Gorgievski, & Bakker, 2017b). Areas such as employee engagement (Jeung, 2011) or employee stress at work (Dormann & Zapf, 2002) have gained increasing focus over the last few decades. Previous research has shown that engaged employees bring their full selves into their work roles (Kahn, 1990; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). They are more cognitively attentive, emotionally vested and physically energetic in their work environment (Crawford, Lepine, & Rich, 2010), which has a positive effect on outcomes such as performance and job satisfaction (Rich, Lepine, & Crawford, 2010). Similar attention should be given to job stress at work because it can lead to strain, hostility and depression (Sur & Ng, 2014). For example, research studies show that inadequate resource allocation increases stress in the workplace (Gillespie et al., 2003). Such work-related stress has a ubiquitous impact on health and performance at work (Fisk & Neville, 2011). In contrast, an effective work organisation (Rayburn, 2014) and human resource management practices (Schneider & Bowen, 1993) positively influence the work of employees and organisational outcomes. Therefore, in addition to company performance, attention should also be paid to employee states, such as engagement and stress.

In sum, it is argued that climates for innovation and inclusion as well as employee engagement, job stress and job satisfaction can have important influences on a company's success. However, it is not clear how these constructs are related. More research is needed into the nature of the relationship between innovation/inclusion climate, employee engagement, job stress and job satisfaction. Therefore, this research focuses on combining the different constructs and takes a closer look at the fundamental behaviours required for an innovative and inclusive climate, and the influence of these behaviours on employee engagement, job stress and job satisfaction.

#### 1.3 Research Purpose and Question

The review of literature (Chapter 2) will establish in detail the gaps in current knowledge and argue that more research is needed into the relationships between innovation/inclusion climate, employee engagement, job stress and job satisfaction. Therefore, the core aim of this research is to better understand the relationships between these constructs. To achieve this purpose, JD-R theory is used to connect the constructs in one model as shown in Figure 1.2.



Figure 1.2: Theoretical Model

This research was conducted in two stages, adopting a mixed-methods methodology. The following is the overarching research question that underpins the study:

## Research Question: How and why does a climate for innovation/inclusion impact job satisfaction through employee engagement and job stress?

The research was broken into two studies: study one (quantitative methodology) and study two (qualitative methodology). In analysing the extant literature on the constructs within the research question, a number of hypotheses were built for study one.

#### Hypotheses for Study One:

#### **Direct Effects**

H1a: A climate for innovation has a direct positive effect on employee job satisfaction.

**H1b:** A climate for innovation has a direct negative effect on employee job satisfaction.

**H2:** A climate for inclusion has a direct positive effect on employee job satisfaction.

#### **Mediated Effects**

**H1.1:** Employee engagement has a positive mediation role in the relationship between climate for innovation and job satisfaction.

**H1.2:** Job stress has a negative mediation role in the relationship between climate for innovation and job satisfaction.

**H2.1:** Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction.

**H2.2:** Job stress has a negative mediation role in the relationship between climate for inclusion and job satisfaction.

Informed by the findings of study one, study two then sought to explore the results of study one, guided by key research questions.

#### **Research Questions for Study Two:**

#### Focus Area: Climate for Innovation

**RQ1:** Does a climate for innovation influence job satisfaction and, if so, why? **RQ2:** Does a climate for innovation influence employee engagement and, if so, why?

RQ3: Does a climate for innovation influence job stress and, if so, why?

#### Focus Area: Climate for Inclusion

RQ4: Does a climate for inclusion influence job satisfaction and, if so, why?RQ5: Does a climate for inclusion influence employee engagement and, if so, why?

RQ6: Does a climate for inclusion influence job stress and, if so, why?RQ7: Do a climate for innovation and a climate for inclusion influence each other and, if so, why?

#### 1.4 Overview of Methodology

Due to the nature of the overall research aim and research question, the research involved a mixed-methods approach relating to factors influencing job satisfaction within organisational contexts (see section 0). A sequential explanatory mixed methodology (Bryman, 2015) was adopted to use qualitative research to assist in explaining and interpreting the findings of the primarily quantitative study. In this particular research project, qualitative results provided a deeper understanding of the relationships between climate for innovation/inclusion, employee engagement, job stress and job satisfaction, which are tested in the quantitative study. Therefore, as a result of the mixed-method design, the research was broken into two separate studies:

- Study one conducted quantitative analysis to test hypotheses developed from the literature. Responses to a questionnaire administered to a large number of individuals (sample size: 86,000) from the case organisation (PharmXO) were used to test relationships proposed in the main research model.
- Study two further explored the outcomes of study one and involved the use of qualitative methods to gain a more detailed understanding of the relationships found in study one. A range of individuals from PharmXO-I department were interviewed using semi-structured interviews to gain a deeper understanding of the connection between climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction.

#### **1.5 Contribution to Theory and Practice**

Both studies addressed the overall research question and, in doing so, make contributions to theory and practice. This section briefly summarises the main contributions.

#### **1.5.1** Theoretical Contributions

In general, this thesis contributes to the current literature by providing empirical insights into how a climate for innovation or inclusion relates to employee engagement, job stress and job satisfaction. In addition, this research contributes to the theoretical development of the JD-R theory by testing the generalisability of the motivational process and the health impairment process in the context of climate of innovation and inclusion (Bakker et al., 2014; Gawke et al., 2017a). The results of this research also suggest two separate pathways relating to job satisfaction. Additionally, this research extends previous studies to utilise and explore climate of innovation and inclusion as job resources in regard

to JD-R theory, and gives further insights into the reasons for the relationships between the different constructs.

#### **1.5.2** Practical Contributions

Multinational companies have many sites around the world. Employees are moving between these sites and bringing different cultures and mindsets with them. Therefore, it is particularly important for work teams to have an inclusive culture to develop a positive work climate (Chen & Tang, 2018). This research provides insights for management and human resource professionals to further understand the effects inclusion has on employee engagement, job stress and job satisfaction. It aims to help leaders to understand the importance of fostering an inclusive mindset in their teams and departments.

In regard to climate for innovation, the results provide companies with a better understanding of the importance of an innovative climate for their employees, and ways to develop this climate. The results also add to our understanding of the influence of internal innovation, not just for performance outcomes but also to improve employee engagement and job satisfaction.

#### **1.6 Thesis Structure**





Figure 1.3: Thesis structure Source: Developed for this research

**Chapter 1** provides a brief background to the research and introduces the research aim, overarching research question, and specific hypotheses and questions, with a justification for the research. In addition, the mixed-method methodology is briefly outlined, followed by an overview of the thesis structure.

**Chapter 2** reviews the literature relevant to this thesis. Five core areas are the focus: climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction. The definition and dimensions of each individual construct are described and the literature is synthesised to highlight current gaps in knowledge.

**Chapter 3** develops the theoretical framework to form the hypotheses and detailed research questions for both studies, showing the links to the current literature gaps.

**Chapter 4** gives an overview of the paradigm, research design, and methodology used to address the overall research aim. It gives deeper insights into the chosen mixed-method approach. In addition, it shows the methodology for each study and addresses the ethical considerations of the overall research.

**Chapter 5** presents and discusses the results of study one; each hypothesis is evaluated and compared with the extant literature.

**Chapter 6** presents and discusses the results of study two; each research question is evaluated and compared with the extant literature.

**Chapter 7** provides further discussion of the overall findings and conclusions of this research. The chapter focuses on implications for theory and practice, limitations of this research and proposes future research directions.

#### 1.7 Conclusion

This chapter highlighted current challenges within the business environment. It was argued that each company should exploit and optimise their current products, as well as leverage innovation as a cornerstone of sustainable growth and profitability. It was further argued that creating an inclusive climate is a simple and especially powerful approach to encourage innovation through a company's existing employees. In combination with a growing innovative and globalised multicultural working context, it was contended that inclusion is an increasingly important component for businesses to maintain a positive work climate, which is related to organisational outcomes such as job satisfaction.

Since organisational outcomes such as satisfaction are playing an increasingly important role for research and business practice, JD-R theory was identified as an appropriate foundation to identify the influence of specific constructs such as climate for innovation or climate for inclusion on organisational outcomes. JD-R theory considers two components of work-job demands or job resources-and how these influence organisational outcomes. The two categories of work characteristics, job demands and job resources, evoke two relatively independent psychological processes: the motivational and health impairment pathways. These two pathways are used to measure the impact of job demands or job resources on organisational outcomes. The motivational pathway can be connected with constructs such as organisational commitment or employee engagement, and the health impairment pathway has been linked with exhaustion or stress at work. Therefore, in addition to company performance, it was argued that attention should also be paid to employee-level constructs, such as engagement, stress and job satisfaction. Finally, it was argued that climate for innovation and inclusion as well as employee engagement, job stress and job satisfaction can have important impacts on a company's success, but more research is needed concerning the nature of the relationship between these constructs. For this reason, the main question for this research arises: how and why does a climate for innovation/inclusion impact job satisfaction through employee engagement and job stress? In addition, the introduction provided an overview of the research methodology and identified contributions to theory and practice.

#### **Chapter 2**

#### LITERATURE REVIEW

#### 2.1 Introduction

The previous chapter provided an introduction and overview of the research topic. In this chapter, deeper insight into climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction are provided to give a more comprehensive understanding of the constructs of interest. The purpose of this chapter is to provide an understanding of each of the constructs, and to analyse and synthesise the current research and knowledge in these areas. In the next chapter, these constructs are then combined to form the research framework and develop specific hypotheses/research questions relating to relationships between the constructs. Figure 2.1 provides an overview of the chapter structure.



Figure 2.1: Outline of Chapter 2

Source: Developed for this research

#### 2.2 Climate for Innovation

The introduction chapter argued that dynamic and turbulent business environments have led to the need for companies to be innovative and to be able to constantly offer new or enhanced products or services to survive (Battistelli et al., 2014; Chowhan et al., 2017; Javed et al., 2017; Lauser, 2010). Each company needs to exploit and optimise their current products, as well as leverage innovation as a cornerstone of sustainable growth and profitability (Friedli et al., 2013). Therefore, the interest in the antecedents of creativity, innovation and self-renewal in organisations has been growing rapidly (Abraham, 1997; Adonisi & van Wyk, 2012; Burgelman, 1983; Chakravarthy & Lorange, 2008; Christensen, 2006; Covin & Slevin, 1991; Gapp & Fisher, 2007; Gapp & Fisher, 2007; Jones & Munro, 2017; Kacperczyk, 2012; Rosabeth Moss & Richardson, 1991; Wunderer, 2001). Researchers as well as senior executives from industry have recognised the importance of the entrepreneurial activities of individual employees within organisations (Fjeldstad, Snow, Miles, & Lettl, 2012; Gawke et al., 2017a; Ireland, Hitt, & Sirmon, 2003; Morris, Webb, & Franklin, 2011). It has been argued that companies need to successfully adapt and use internal sources of innovation for environmental opportunities and competitive advantage (Gawke et al., 2017a; Lukes & Stephan, 2017). The thriving innovation literature is trying to identify ways to leverage entrepreneurial and innovative spirit for larger organisations (Hornsby, Kuratko, & Montagno, 2017; Park, Srivastava, & Gnyawali, 2014; Parker, 2011). However, the scientific exploration of how innovative employee activities can be described and measured is not clear and has led to many different constructs.

In describing entrepreneurial orientation at the individual level within organisations, researchers have since adopted the term "intrapreneur" (Smith, Rees, & Murray, 2016). In the latest innovation research, the concept of intrapreneurship has received increased attention as it focuses on behaviours at the individual level which impact the organisational level (Gawke et al., 2017a; Hornsby et al., 2017). The behaviours of intrapreneurship can act to revitalise businesses, increase innovation and help organisations adapt appropriately to external and internal developments (Gawke et al., 2017a; Krauss, Frese, Friedrich, & Unger, 2005; Kuratko, Hornsby, & Covin, 2014; Marvel, Griffin, Hebda, & Vojak, 2007). The term intrapreneurship is composed of "intracorporate" and "entrepreneurship" and was used for the first time by Pinchot (Pinchot, 1985) in his book *Intrapreneuring*. Pinchot (1985) stresses the need for organisations to facilitate self-renewal from within and to be more innovative due to the increasing existence of competitors. Therefore, Pinchot's first construct of intrapreneurship focused on describing outputs of intrapreneurship such as new venture creation and strategic renewal (Kuratko et al., 2014).

Previous work has suggested various definitions of intrapreneurship (as shown in Table 2.1). These definitions share a number of characteristics and help to better understand which behaviours are particularly important for an innovative culture. First, intrapreneurs are proactive individuals with a strong will to act. They are "self-starters" who do not need to be asked to take initiative. In fact, they usually do not even ask for permission and can ignore disapproval and other negative responses from their environment in relation to their ideas (Pinchot & Pellman, 1999). Second, their proactive behaviour focuses on striving for an opportunity, regardless of the resources they currently control (Jong & Wennekers, 2008); somehow intrapreneurs keep finding a way. Lastly, intrapreneurs often pursue something that is in some way "new" or "innovative", where their actions deviate from the status quo (Jong & Wennekers, 2008). Table 2.1 presents an overview of definitions compiled by Jong and Wennekers (2008), p. 9).

Authors	Definitions
Pinchot (1985, p. ix, cited in Sharma, 1999)	"Intrapreneurs are 'dreamers who do'; those who take hands-on responsibility for creating innovation of any kind within an organisation; they may be the creators or inventors but are always the dreamers who figure out how to turn an idea into a profitable reality."
Stevenson and Jarillo (1990, S. 23)	Intrapreneurship refers to " process by which individuals inside organisations pursue opportunities independent of the resources they currently control".
Antoncic and Hisrich (2003, S. 20)	Intrapreneurship refers to "emergent behavioural intentions and behaviours that are related to departures from the customary ways of doing business in existing organisations".
(Jong, Parker, Wennekers, & Wu, 2011)	Intrapreneurship refers to "the identification and exploitation of opportunities by individual workers that (also) advance the organisation".

Table 2.1: Chosen definitions for intrapreneurshipSource: Jong and Wennekers (2008, p. 9).

These definitions show that research has started to explore the specific behaviours of intrapreneurship at the employee level, but a concise definition is still missing (Gawke et al.) (2017a). However, current research has defined intrapreneurial behaviours from employees who show initiative, take risks and originate new ideas (de Jong, Parker, Wennekers, & Wu, 2015; Langkamp Bolton & Lane, 2012). Employees demonstrating

intrapreneurship use opportunities and turn them into profitable new realities, drive change and develop creative responses in the organisation (Menzel et al., 2007). Thus, the core behaviour patterns are individual initiative, opportunity seeking, visionary thinking and flexibility, but there are also social skills, such as teamwork and network building (Menzel et al., 2007). Therefore, intrapreneurship is characterised by different behaviours but, above all, innovative ideas, initiative and risk-taking are the driving forces which make an employee an intrapreneur.

Intrapreneurial behaviour helps organisations promote innovation (Shahin, Barati, Khalili, & Dabestani, 2017). For this reason, innovation itself can be seen as the result of these behaviours. In general, innovation refers to the new applications of knowledge, ideas, approaches and skills necessary to gain competitive advantage (Anderson, Potočnik, & Zhou, 2014). Innovation can be classified as incremental or radical innovation. Incremental innovations deal with creating knowledge for minor improvements or simple adjustments in a product's current technology (Un, 2010). Incremental innovations contribute to introducing goods and services with new functions or changes to current technologies and products (Valle & Vázquez-Bustelo, 2009). In contrast, radical innovations represent high uncertainty and high risk, but can also deliver a significant benefit to the end customer (Moguilnaia et al., 2005). Radical innovations lead to new technologies and processes that create entirely new and unknown customer and target market requirements (Johnson, 2005). Importantly, radical innovations account for 10% of all new innovations, while incremental innovations account for 90% (Alimohammadlou & Eslamloo, 2016). Therefore, both dimensions of innovation are important for businesses and will be explored in more detail.

Incremental innovations seek to meet the needs of existing customers or markets at a pace that reflects current technological developments (Benner & Tushman, 2003; Jansen, van den Bosch, & Volberda, 2006). The strategic focus of incremental innovation is on marketdominated growth with diversification through improvement and expansion of current products and services within a short period of time (Taylor & Greve, 2006). Incremental innovation requires the ability to strengthen, recombine and leverage existing knowledge resources (Subramaniam & Youndt, 2005). Outputs from incremental innovation projects are slight deviations from existing products, services, practices or approaches (Damanpour, 1991). Conversely, radical innovation aims to meet the needs of emerging customers or markets (Benner & Tushman, 2003; Jansen et al., 2006). The extent of change is greater for radical innovation than for incremental innovation. Radical innovations are new and original for both the organisation and the market, and since they represent the infrastructure of the new generation of products and services in the future, they play a crucial role in the survival of businesses and long-term stable competitive advantage (Garcia & Calantone, 2002). The success of a radical innovation project depends on the ability to make the dominant technologies superfluous by transforming old knowledge into new knowledge, thereby bringing about fundamental changes in an organisation (Damanpour, 1991; Subramaniam & Youndt, 2005). Both dimensions of innovation are important for the long-term success of an organisation and intrapreneurship can be seen as an incubator to improve the chance of achieving both incremental and radical innovation outcomes.

The construct for this research, referred to as "climate for innovation", can be seen as the starting point for intrapreneurship. If organisations foster innovative behaviour it is likely that more employees will act like intrapreneurs (Stańczyk, 2017). Employees who have innovative and creative potential are most likely to practice incremental and radical innovation when they are supported by a strong innovative culture (Neck, DiLiello, & Houghton, 2006). This research focuses on climate for innovation as an input variable which may influence an employee's response to their work. Nevertheless, it is important to further explore the underlying characteristics of innovative employees (intrapreneurs) to better understand what behaviours an organisation might encourage to foster a climate for innovation. Building on the entrepreneurial orientation and intrapreneurship literature, the previous sections showed three main characteristics which can be used by an organisation to foster an innovative climate.

First, promoting innovativeness can help to build up a climate for innovation. In general, innovativeness is the ability of an individual to generate new ideas and to turn them into new products, processes and business systems (Pinchot & Pellman, 1999). In the literature, innovativeness is defined as the production, application and implementation of new and useful ideas, including products or processes (Kanter, 1988; Kanter, 2016). Promoting innovativeness encourages individuals to be open to new ideas, inventions or ways of doing things, and to improvise, generate new ideas and accept challenges (Ali, 2019). Innovativeness can also be linked to embrace individual creativity (Mumford, Hunter, Eubanks, Bedell, & Murphy, 2007). Creativity is therefore present in all studies on the innovative behaviour of employees (Janssen, 2000; Jong & den Hartog, 2010; Zhou & George, 2001). Employees who are given the opportunity to pursue new innovative ideas also strengthen their creativity at the same time (Cromie, 2000). Therefore, the literature has shown that promoting innovativeness can help to foster creativity and a climate for innovation.

Second, giving room to show initiative can be used by organisations to create an innovative climate. In general, showing initiative can be described as proactively pursuing new opportunities and to lead rather than follow (Lumpkin & Dess, 1996). Showing initiative

is further described by Parker and Collins (2010, p. 635) as "self-initiated and futureoriented action that aims to change and improve the situation or oneself". Pinchot (1985) describes intrapreneurs as those who may get in trouble because they go beyond formal job descriptions. This means that organisations should allow employees to do something without asking or without receiving an explicit instruction (Fay & Frese, 2001), because employees who have the opportunity to show initiative are able to seek new ways of working which aim to change and improve the situation or oneself (Rauch, Wiklund, Lumpkin, & Frese, 2009). Employees are able to scan their environment to identify organisational threats and opportunities; they can proactively influence strategy formation by making others aware of particular events or trends to take control of, or causing change in, their broader organisational level (Parker & Collins, 2010). This can contribute to new business development because of new products, processes or product–market combinations (Antoncic & Hisrich, 2003; Pinchot, 1985). Therefore, promoting employee behaviours such as showing initiative contributes to fostering an innovation-oriented culture within an organisation.

Third, encouraging risk-taking can help organisations to build a climate for innovation because previous research has identified that risk-taking is a crucial behaviour for innovative organisational environments (Antoncic & Hisrich, 2003; Wennekers, Thurik, van Stel, & Noorderhaven, 2007). Risk-taking is considered to be an individual's willingness to assume and tolerate the risk of pursuing an innovative project (Lumpkin & Dess, 1996). Risk-taking involves actions such as venturing into the unknown, borrowing heavily or committing significant resources to ventures in unknown environments (Rauch et al., 2009). Innovation is linked with risk, as resources in the form of time and money have to be invested before the return is known (de Jong et al., 2015). de Jong et al. (2015) explain further that intrapreneurs' risk-taking is slightly different to that of innovative entrepreneurs but can be associated with it. Innovative employees take responsibility for material losses and face reputational damage, resistance from peers or even risk losing their job (de Jong et al., 2015)(de Jong et al., 2015). Encouraging risktaking can help organisations to achieve dramatic strategy progress by making large and courageous decisions in the face of uncertainty (Mintzberg, 1973). Based on such studies, risk-taking can be seen as an aspect of intrapreneurship and is therefore linked to an innovative climate. In sum, research shows that risk-taking can be assumed as an essential part of a climate for innovation in organisations.

In conclusion, a climate for innovation is crucial for an innovative organisation, and innovativeness, shows initiative and risk-taking have been identified as the main characteristics which can be used by an organisation to foster an inclusive climate.

#### 2.3 Climate for Inclusion

As highlighted previously, a climate for innovation is necessary for organisations that wish to survive in the globalised nature of business. These changes in the work environment also influence diversity and inclusion. Workforces will become increasingly diverse because of global economics and population growth (Friedli et al., 2013), which brings the challenge of channelling this diversity into beneficial outcomes (Lizano & Mor Barak, 2015; Shore et al., 2017). This is strongly influenced by whether an employee feels that they work in an inclusive culture. The fact that both topics—innovation and inclusion—are important for an organisation is shown in studies by Mor Barak et al. (2016) and by Brimhall and Mor Barak (2018). These authors indicate that some of the positive effects of diversity and inclusion include enhanced creativity and innovation, and improved workplace commitment.

Before exploring a climate for inclusion in more detail, it is also important to differentiate between the concepts of diversity and inclusion, as these terms are often used synonymously although they have differences. This differentiation is succinctly depicted in the following quote:

"Diversity is being invited to the party; inclusion is being asked to dance." (Sweeney and Bothwick, 2016, p. 15)

Diversity refers to interpersonal differences, inequality and individuality. It is characterised by manifest features such as skin colour and gender, and latent features such as age, nationality, sexual orientation, denomination, religion and cultural background (Mor Barak, Cherin, & Berkman, 1998). Each individual is viewed as unique through their perspectives and attitudes, which are influenced by their experiences, educational background and personality development (Sweeney & Bothwick, 2016). Although many organisations focus on the benefits of using different identity groups, diversity can lead to increased discrimination and prejudice (Prasad, 2016). More specifically, discrimination becomes more severe when there is a lack of inclusive policies or organisational climate. Therefore, the real challenge for organisations is to accept employees' diversity and individuality in order to harness their potential (Chin, Desormeaux, & Sawyer, 2016). Research shows that people from different social and cultural groups are often excluded from information and opportunity networks in enterprises (Ibarra, 1993) in which inclusion can be used to promote employee participation and empowerment, to heal and bring together this excluded status. Rather than emphasising diversity as a distinctive organisational commodity that has an exchange value in terms of economic performance, inclusion focuses specifically on the degree to which individuals feel a significant involvement in critical organisational processes. Organisations can use inclusive cultures to create an environment through which everyone can freely develop, and harness their differences for the organisation's benefit (Sweeney & Bothwick, 2016). Therefore, with growing interest in diversity in organisations, creating inclusive environments will be critical.

A focus on building inclusive environments within organisations has increased in recent years (Nishii & Rich, 2014), but a concise definition for inclusion as well as a climate for inclusion is missing. Mor Barak et al. (1998; 1998), who started research on inclusion in work organisations, have defined it as consisting of "the degree to which individuals feel part of critical organisational processes". Nishii (2013) built upon this definition and describes an inclusive workplace as an environment in which "individuals of all backgrounds—not just members of historically powerful identity groups—are fairly treated, valued for who they are, and included in core decision making". A published study by Deloitte Touch University Press (Bourke & Dillon, 2016) asked 1000 global executives and 1,500 employees about inclusive behaviour and found that individuals feel more included if they have a sense of belonging, are treated fairly and feel valued for their uniqueness. Theoretically, integrative environments are characterised by a common commitment to the integration of different identities as a source of knowledge and skills (Ely & Thomas, 2001). Similar to this phenomenon, also Ferdman et al. (2010) noted that, "experiencing integration in a group or organisation means being fully part of the whole while maintaining a sense of authenticity and uniqueness" (p. 37). This sense of inclusion manifests itself in the perception of voice, fairness and security that can help employees and businesses experience the positive performance benefits of diversity (Ferdman et al., 2010).

Since there are many different definitions of inclusion in the literature, Table 2.2 shows the key themes identified in the definitions of inclusion, such as belonging, uniqueness, feeling valued, being part of decision-making and psychological safety.

Source	Belongingness	Uniqueness and Authenticity	Feeling Respected and Valued	Psychological Safety
Mor Barak et al. (1998)	х	х		
Hope Pelled et al. (1999)	х	х	x	
Wasserman et al. (2008)	х	х	х	x
Shore et al. (2011)	х	x	х	X
Nishii (2013)			Х	X
Jansen et al. (2014)	x	x	х	х
Ferdman (2017)	х	x	Х	X
Shore et al. (2017)	х	X	X	x
Chen and Tang (2018)	х	х		x

Table 2.2 illustrates that the definitions have similarities, especially related to the key themes of belonging and uniqueness. However, the most recent research has shown that values such as fairness, respect and safety also play an important role within inclusive environments.

Shore et al. (2011) explain and summarise that inclusion can be measured as part of work group inclusion (Jansen et al., 2014; Shore et al., 2011), leader inclusion (Boekhorst, 2015; Booysen, 2013), perceived organisational inclusion (Mor Barak et al., 1998), and inclusion climate (Nishii & Rich, 2014). Shore et al. (2017) also state that although each construct has been developed independently in the literature, the research in general builds on the same values and has similar themes. The research on inclusion has led to different constructs and definitions; however, overall it encompasses an environment in which members can be authentic and treated fairly and respectfully (Shore et al., 2017). Based on the reviewed literature, for this research inclusion is defined as proactive behaviours that create an environment in which everyone: is actively included; is treated fairly and respectfully; has equal access to opportunities and resources; and can be themselves while contributing fully as part of the organisation's success.

The literature, research and definition provide insights into the behaviours that are important for an inclusive corporate culture. Nevertheless, it is important to further explore the underlying characteristics to better understand what behaviours an organisation might encourage to foster a climate for inclusion. The previous sections showed that belongingness, uniqueness, feeling respected and valued, and feeling psychologically safe are the main characteristics of a climate for inclusion.

A climate for inclusion should reinforce employees' feelings of belonging. Belongingness refers to the feeling of being an insider and having access to critical information and resources. This component is one of the most cited aspects of inclusion, beginning with Mor Barak et al. (1998) early work on access to information and Shore et al.'s (2011) working model. Baumeister and Leary (1995) suggest that a sense of belonging includes the need to belong to social groups as a basic human need to build lasting relationships with others. A strong sense of belonging to a particular social group protects the individual from the negative effects of social exclusion that can affect self-regulation and cognitive processes (Baumeister, Twenge, & Nuss, 2002). In an organisational environment where group members share common goals and values, indicating a sense of belonging and diversity leads to sustainable positive outcomes such as job satisfaction (Ely & Thomas, 2001).

The belongingness described above can only be reflected as part of a climate of inclusion. An emphasis on belonging to a group can create an environment in which outsiders feel pressured to adapt by denying their uniqueness to meet group norms. Studies on facets of conformity show that individuals who feel at odds with the values or demographic composition of their work team or organisation pursue impression management strategies for assimilation (Hewlin, 2009). Hewlin's (2009) findings are a clear example of the dangers to minority group members of emphasising affiliation and similarity. For example, women in male-dominated work teams often feel the need to adapt to their environment and adopt male characteristics and behaviours in order to belong (Ely, 1995). Ely (1995) interviewed female lawyers working in both male-dominated and sexually integrated law firms. In male-dominated law firms, female lawyers reported that stereotypical male traits were rewarded but when women took these traits they suffered setbacks and were considered unlikely for promotion (Rudman & Glick, 2001). This is not only a problem for women in the workplace; minorities also feel this need to adapt to belong in their organisations (Shore et al., 2011). Therefore, employees being able to express their uniqueness and authenticity is another important component for a climate of inclusion.
Uniqueness and authenticity describe the organisational facilitation of transparency and acceptance of valuable identities (Shore et al., 2011). The need for uniqueness was first suggested in the work of Snyder and Fromkin (1980). Snyder and Fromkin theorised that individuals have a need for differentiation because discernment contributes to an individual's self-esteem and self-understanding. In this way, the individual is induced to find a moderate degree of discernment. When people feel too similar to others, they try to restore their independence. Likewise, the feeling of excessive discernment is unpleasant and drives individuals to find a balance between differentiation and similarity (Snyder & Fromkin, 1980). Researchers suggest that these competing needs for belonging and uniqueness are basic, universal human needs pointing to the importance of fulfilling both needs in a working team (Baumeister & Leary, 1995; Sedikides, Gaertner, & Vevea, 2005; Vignoles, Chryssochoou, & Breakwell, 2000). Therefore, uniqueness and authenticity form a strong characteristic for a climate for inclusion.

In order for companies to build an inclusive culture they need to make sure that employees feel belongingness and uniqueness, but also that they feel safe, respected and valued. The feeling of psychological safety is associated with the exchange of different opinions and views of others (Carmeli, Reiter-Palmon, & Ziv, 2010; Hirak, Peng, Carmeli, & Schaubroeck, 2012; Nembhard & Edmondson, 2006). This security may apply to the individual or to the identity groups of some employees. For example, a woman who expresses views associated with her female identity should feel secure in doing so. For an African American in a Caucasian-dominated team, psychological safety could mean feeling comfortable to express views that differ from those of others in the team. In combination with safety, respect and valuing others are important components of an inclusive climate (Nishii, 2013; Sabharwal, 2014). A sense of psychological security and feeling respected and valued gives employees the room to express their personal opinions and to share ideas with colleagues in the workplace (Nembhard & Edmondson, 2006), encouraging them to demonstrate innovative role behaviour.

The previous sections described which characteristics and behaviours are needed to foster an inclusive as well as innovative corporate culture. Since these cultures are intended to serve as a starting point for innovative and inclusive employee behaviours, this research focuses on the effects on organisational outcomes such as employee engagement and satisfaction. It is important to understand how these climates affect employees in their work environment in order to sustainably improve business outcomes (Lightfoote et al., 2014).

### 2.4 Employee Engagement

It was shown that climates for innovation and inclusion are critical to addressing the changing work environment (Bierwerth et al., 2015; Buekens, 2014; Menzel et al., 2007). An innovative climate focuses on the people of an organisation and supports them in creating, developing and scaling their existing ideas, which can lead to higher organisational performance (García-Buades et al., 2015; Hwang & Hopkins, 2015; Karmeni et al., 2017). An inclusive climate helps to build a respectful and safe work environment in which employees feel belongingness and uniqueness at the same time. Researchers have shown that this inclusive climate can be related to organisational outcomes, such as performance, organisational commitment and employee wellbeing (Acquavita et al., 2009; Barak & Levin, 2002; Findler et al., 2007; Hwang & Hopkins, 2015; Mor Barak et al., 2006). As the overall research seeks to understand the impact of climates for innovation and inclusion on unexplored important organisational outcomes such as employee engagement, the purpose of this section is to review past research regarding the construct of employee engagement.

The focus on employee engagement has been gaining popularity over the last few decades (Jeung, 2011; Kahn & Heaphy, 2014; Saks & Gruman, 2014). However, there is little agreement across academic literature on the exact definition of employee engagement. Kahn (1990) was the first to conceptualise and define the terms personal engagement and personal disengagement in the workplace and explore momentary psychological conditions that affect the extent of engagement as "the harnessing of organisation members' selves to their work roles; in engagement people employ and express themselves physically, cognitively and emotionally during role performances" (p. 694). Kahn then further continues to define work disengagement as "the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively, or emotionally during role performances" (p. 694). Kahn defines personal engagement as "the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively, or emotionally during role performances" (p. 694). Kahn defines personal presence at the physical, cognitive and emotional level.

Based on Kahn's (1990) definition, the most commonly used definition is the one created by Schaufeli et al. (2006), which defines employee engagement as a positive work-related state of mind which can be explained by vigour, dedication and absorption. Vigour can be described as working with a high level of energy and mental resilience (Schaufeli et al., 2006). Dedication is defined as the degree of involvement in and enthusiasm for the individual's work (Schaufeli et al., 2006). Absorption is then seen as the degree of concentration and depth of involvement in work (Schaufeli et al., 2006). A newer definition presented by Xanthopoulou et al. (2008), on the other hand, defines work engagement through the use of resources in the workplace. Xanthopoulou et al. divide these into personal and job resources and theorise them to foster work engagement through their ability to contribute energy and motivation to engage in tasks. This definition fits very well with the JD-R theory underpinning this research, which is explained in more detail in Chapter 3.

Theoretically, employee engagement has its origins in the burnout literature and has been positioned as an antipode to the burnout experience (Schaufeli, Salanova, González-Romá, & Bakker, 2002; Shuck & Reio, 2013). The connection between employee engagement and burnout was first identified by May et al. (2004). May et al.'s theory describes engagement as the opposite of a burnout. Burnout is mainly affected by factors such as workload, reward, recognition, support and fairness, and is defined by three dimensions: exhaustion, cynicism and inefficacy (Maslach, 2003). Engagement, as its opposite implies, is characterised by energy, involvement and efficacy in the workplace (Maslach, 2003). The main focus of employee engagement is on the work activity (Schaufeli et al., 2002). Shuck et al. (2014) argue that employee engagement reflects an active psychological state and encompasses the full range of immediate work experience, such as work activities, and team and gained work experience. In sum, and after considering the various different definitions of employee engagement, it can be said that employee engagement is characterised by workers being involved, energised and efficient in their everyday activities as well as healthy and satisfied in their vocation.

As Kahn (1990) noted, employees incorporate a range of cognitive, emotional and behavioural energies into their work roles that combine to result in the experience of engagement. Depending on the initial definition of employee engagement, researchers have typically operationalised the experience of employee engagement as a three-dimensional construct (Nimon, Shuck, & Zigarmi, 2016; Shuck, Adelson, & Reio, 2017; Shuck & Wollard, 2010). The dimensions are described as cognitive, affective and behavioural energies, which represents motivation for a specific, work-related, positive psychological experience (Shuck et al., 2014). The intensity of simultaneously directed energy proportionally indicates the extent to which an employee is engaged (Shuck et al., 2017). Each of these three dimensions of employee engagement is explained below.

First, the dimension of cognitive engagement can be connected to employees' energy resources and is defined as the intensity of mental energy expressed in positive organisational outcomes (Rich et al., 2010; Shuck et al., 2014). Cognitively engaged employees are attentive and focused in their workplace and use mentally charged energy for work-related activities (Shuck et al., 2017). Based on Kahn's (1990) early

conceptualisation, cognitive engagement is characterised by the way in which an employee controls cognitive energy, characterised by the expression of attention and concentration towards work-related tasks, experiences and contexts. Shuck et al. (2017) state that a cognitively committed employee would demonstrate concentration and be focused on and attentive to work-related experiences.

Second, the dimension of emotional engagement is defined as an employee's intensity and willingness to invest emotion in positive organisational outcomes (Macey & Schneider, 2008; Shuck et al., 2014). Shuck et al. (2017) explain further that emotional engagement *"is the offering of emotionally connected, personal resources, such as believing in, feeling a sense of personal meaning toward, and being emotionally connected, to a situation, person or context within the full experience of work"*. Therefore, this dimension represents a deep, active and emotional connection to an employee's work. Emotionally engaged employees express their influence on a variety of work-oriented goals that relate to the current momentary experience (Shuck et al., 2017).

Lastly, behavioural engagement and is defined as the psychological state of intention to behave in a way that has a positive effect on performance (Macey & Schneider, 2008; Rich et al., 2010). Behaviourally engaged employees are ready to make additional effort to work harder for their team and their organisation and to do more than is expected of them. Macey and Schneider (2008) describe this state of engagement as proactive engagement because it is a forward-looking, psychological state that manifests as behaviour but has not yet been put into action. In other words, behavioural engagement represents a psychological state and is not yet action-related behaviour (Shuck et al., 2017). It is not enough just to work harder; behavioural-engaged employees are psychologically willing to give more and try to go beyond their comfort zone to move forward (Shuck et al., 2017).

In sum, employee engagement incorporates a range of cognitive, emotional and behavioural components which might play an important role in influencing the relationship between climate for innovation and inclusion in relation to organisational outcomes, such as job satisfaction.

### 2.5 Job Stress

As reviewed previously, a climate for innovation and inclusion can cause issues, such as uncertainty or feeling excluded—similar to employee engagement which can also lead to the opposite with employee burnout (Crawford et al., 2010). Therefore, it is of primary importance to understand how job stress could influence important individual outcomes, such as job satisfaction, in combination with an innovation/inclusion climate.

Both climates might have a strong influence on an employee's work environment, which could influence the job stress level. For this reason, job stress is described more precisely in the next sections.

In order to explain the construct of job stress in more detail, the general term stress should first be explored. Originally, the term "stress" was used exclusively by material scientists who refer to the forces and strains acting on solid bodies that may cause deformity. Some of the first stress researchers in the field of human science were Kahn et al. (1964), with their published work on role stress. Stress can be defined as an interruption of the balance of the cognitive, emotional and environmental systems by external factors (Lazarus & Folkman, 2015). It also refers to how an individual responds to challenges and crises in their environment. Therefore, the environment plays a central role in the stress effects on an individual.

Although scientists agree on the existence of stressful situations and events in today's workplace, there is no consensus on the definition of stress. The term "stress" is defined in stress literature by some researchers as a cause and by others as an effect (Ganster & Schaubroeck, 1991; Jex, Beehr, & Roberts, 1992; Karasek, 1979). This general lack of agreement is due to the different, and sometimes conflicting, theoretical connotations of the elements involved in the stress process. Jex et al. (1992) classified work stress researchers into three groups: (1) researchers who regard work stress as a stimulus that is considered an environmental element or event (cause), (2) researchers who define stress as a response (effect), and (3) researchers who regarded stress as a stimulus–response process. According to Jex et al. (1992), most stress research can best be classified as framing stress as a stimulus–response process. This section shows how stress can be divided into individual types, and indicates the extent of influence the external environment has on stress.

Most organisational researchers examine stress with stressors (cause) in combination with strains (effect) (Ganster & Schaubroeck, 1991; Glazer & Beehr, 2005; Karasek, 1979; Ormond, Keown-Gerrard, & Kline, 2003; Viswesvaran, Sanchez, & Fisher, 1999). Defining stress as a stimulus–response interaction, includes first the stimulus and second the response. In general, stimulus is associated with the term "stressor". Stressors are those factors that may cause stress, and include any form of external strain condition (Kaluza, 2007). According to Zimbardo and Gerrig (1999), a stressor is a stimulus event that requires an adaptive reaction from the organism. Potential occupational stressors can be, for example, managerial oversight, environmental factors, job requirements or the organisational climate (Weinert, 1998). In general, the response is associated with the term "strain". Strains can occur in the form of psychological, affective or behavioural reactions,

and are located at the end of the causal process of stress (Liu, Spector, & Jex, 2005). Strains can be related to the effect that results from stressors.

In this research, stress is explored in the context of the working environment and is referred to as "job stress", which is conceptualised in relation to the relationship between the job and the person. Job stress is a major problem in the workplace and is the focus of many organisational researchers (Dormann & Zapf, 2002; Ganster & Schaubroeck, 1991; Glazer & Beehr, 2005; Karasek, 1979; Lazarus & Folkman, 2015; Viswesvaran et al., 1999). Stressors in regards to job stress are part of the current business environment and can be due to downsizing, technology and violence (DeFrank & Ivancevich, 1998). Other stressors connected to job stress include work overload, incompetent supervisors, role ambiguities and lack of recognition (Glazer & Beehr, 2005). Therefore, job stress develops in the workplace when, for example, the demands of the workplace do not meet the employee's needs, expectations or abilities (Landsbergis, 2003). In addition, job stress can be explained by the fact that the temporary adjustment process leads to mental stress caused by changes in the working environment (Lord, Gray, & Pond, 1991). Job stress has evolved into an industry problem, because stressful working conditions can cause significant costs in terms of low productivity and increased illness (Ganster & Schaubroeck, 1991). The next section evaluates strains that may be evident in a workplace.

Over time, researchers have identified different types of strains. The seminal author Karasek (1979) measured depression and exhaustion as effects of work demands. He describes these effects as psychological stress. Lazarus (1991) refers only to emotional or psychological strains such as anxiety, anger, depression or sadness. These strains can be further classified in psychological strains as affective stress (feelings or emotional reactions such as satisfaction) and cognitive strains (reactions to cognitive thinking such as intentions to fluctuate; (Barsky, Thoresen, Warren, & Kaplan, 2004). In a meta-review of over 300 articles on stress, Ganster and Schaubroeck (1991) found that studies have measured two types of strains: psychological strains such as anxiety, exhaustion, and dissatisfaction; and physiological strains such as heart rate and blood pressure. Among the reviewed literature on psychological strains, fear was found to be the most frequently measured strain (Ganster & Schaubroeck, 1991; Glazer & Beehr, 2005; Jex et al., 1992; Karasek, 1979; Liu et al., 2005), followed by workplace dissatisfaction (Barsky et al., 2004; Liu et al., 2005) and anxiety (Ganster & Schaubroeck, 1991; Karasek, 1979; Lazarus, 1991; Lazarus & Folkman, 2015). Therefore, the outcome of stress can be conceptualised as psychological and physiological strains which cause fear, dissatisfaction, anxiety or high blood pressure. The current research focuses on the effect of corporate cultures, such as innovation and inclusion climates, on individual/organisational outcomes. For example, innovative behaviours often require employees to do work on top of their daily tasks to meet the job requirements (Birkinshaw, 1997). This can cause employees to feel a greater sense of time pressure and being overworked (Schaufeli & Bakker, 2004). In addition, intrapreneurial projects are often connected with great uncertainty (Belassi, Kondra, & Tukel, 2007) which might cause negative reactions amongst employees, such as anxiety or worry at work (Shepherd, Patzelt, & Wolfe, 2011). Barak and Levin (2002) state that employees who work in an inclusive environment feel respected and valued and have better access to information and task-related resources. Controversially, it can be assumed that a lack of inclusive climate might lead to anxiety and anger because of exclusion and inequality. This demonstrates that strains such as being overworked, anxiety and anger are particularly relevant in combination with an innovation and inclusion climate. Therefore, for this research the term "job stress" focuses on two dimension of strains: time strains, such overwork and exhaustion; and emotional strains, such as anxiety and anger.

The first dimension, overwork, is connected to workload which refers to the concentration or number of tasks that the responsible employee has at work (Ali, Raheem, Nawaz, & Imamuddin, 2014). This aspect refers to the degree of stress that individuals experience due to the feeling that they cannot adapt or be active with the amount of work assigned to them (Idris, 2011). Workload can be classified as role overload or underload. Individuals experience role overload when they want to use more time and resources but this does not align with the expectations of direct superiors, subordinates, colleagues, top management or the local community (Rizwan, Waseem, & Bukhari, 2014). Role overload can be qualitative or quantitative (Trayambak, 2012); qualitative takes place when the individual does not have sufficient skills to work, while quantitative overload occurs when the individual has large tasks to perform or too little time to perform them (Conley & You, 2009). Individuals are confronted with stress because they may be afraid that they will not be able to carry out their tasks according to their expectations. Secondly, role underload appears if tasks and duties of the role are lower than the level of individual skills, which creates feelings of boredom or stress (Shultz, Wang, & Olson, 2010); individuals experience stress because they feel that the work is not challenging enough or not of importance. However, job stress influenced by workload can also be classified as positive stress, because employees feel challenged in meeting their responsibilities and achieving their goals in time (Rizwan et al., 2014). In sum, overwork appears when employees have a high number of tasks in a short period of time, with the risk of not reaching the expected goals.

The second dimension, anxiety and anger, explores emotional strains. As described above, intrapreneurial projects are often connected with uncertainty, which might cause anxiety or worry at work (Shepherd et al., 2011). These emotions are a response to an individual

assessment (Lazarus, 1991). The assessment process involves the generation of meaning; that is, a person who understands their environment and assesses whether their personal identity is compatible or incompatible with the external environment. The evaluation pattern, which is part of the cognitive process, also helps to distinguish one emotion from the other (Lazarus & Folkman, 2015). If a person evaluates their environment positively, positive emotions occur (happiness, joy, pride); likewise, if an event is evaluated as threatening them, negative emotions occur (anger, fear). A person assesses the event or situation to see if the event is linked to a personal goal (goal relevance), whether the event is harmful or useful (goal mismatch or congruence) and, finally, whether the goal concerns a moral value or personal ego (content of goal). For example, when employees feel insecure about their goals in innovative projects, this can cause negative emotions such as anxiety. Many researchers have found that a strong presence of anxiety and anger emotions is connected to work stress (Ganster, 2008; Ganster, 2009; Ganster & Schaubroeck, 1991; Jex et al., 1992; Perrewé et al., 2004). In sum, literature shows that employees evaluate themselves in their work environment and as soon as a mismatch or congruence is detected; for example, within innovative projects or lacking inclusive workgroups, anger and fear can appear as emotional responses.

### 2.6 Job Satisfaction

Integral to the relationship between an innovative/inclusive climate and employee engagement/stress is the influence that these factors can have on employee job satisfaction. For example, it could be shown that employee engagement is connected with job satisfaction because employees who are highly engaged are also likely to be satisfied (Saks, 2006; Schaufeli & Bakker, 2004; Spector, 1998). This is similar to job stress, which has been extensively studied in the last two decades in terms of its outcomes (Jannoo, Yap, & Haron, 2015). Research has found that a high level of stress has a negative impact on satisfaction (Rothmann, 2008). The impact of an innovative and inclusive climate on employee satisfaction has yet to be researched in detail. Brimhall and Mor Barak (2018) recently published one of the first studies in which they could show that inclusive as well as innovative cultures can have a positive effect on employee satisfaction. As this current research further explores the relationship of job satisfaction in relation to engagement and stress, more detail about the definition and importance of job satisfaction is provided in the next sections.

Decades of research make job satisfaction one of the most researched constructs in social science (Bentler & Kano, 1990; Cano & Miller, 1997; Hackman & Oldham, 1974; Hagedoorn, Yperen, Vliert, & Buunk, 1999; Iverson & Maguire, 2016; Lum, Kervin, Clark, Reid, & Sirola, 1998; Pettit, Goris, & Vaught, 1997; Shore & Martin, 1989). In regards to

business outcomes, probably the most commonly studied relationships are job satisfaction and job performance, (Judge, Klinger, & Simon, 2010a; Mashi, 2017; Robie, Ryan, Schmieder, Parra, & Smith, 1998), employee turnover (Meyer & Tett, 1993; Valentine, Godkin, Fleischman, & Kidwell, 2011) and employee commitment (Judge et al., 2010a). Therefore, job satisfaction can be crucial to the successful future of a company, as it contributes to other important organisational outcomes. For example, very early on, Vroom (1964) found a positive relationship between performance and satisfaction. However, Vroom describes this rather complex relationship depending on additional motivational factors and performance standards, such as leadership style. Therefore, employee turnover or employee commitment is often measured in parallel to performance to evaluate an organisation's success. Empirical research, such as that by Bruggemann et al. (1975) or Vroom, reports significant relationships between employee satisfaction, commitment and turnover. Commitment in general can be described as acceptance of the organisation's goals and values, willingness to commit to the organisation to a significant extent, and a strong desire to remain a member of the organisation (Mowday, Porter, & Steers, 1982). In other words, it is a concept of affective attachment with a dedicated and long-term commitment to the organisation. In sum, job satisfaction is an important organisational outcome and a good indicator for quality of work, and can influence commitment as well as performance and turnover.

The previous section showed that job satisfaction is an important driver for organisational success and, with the enormous number of published articles, there are a variety of definitions and theories which makes job satisfaction a complex and broad construct (Bentler & Kano, 1990; Cano & Miller, 1997; Hackman & Oldham, 1974; Hagedoorn et al., 1999; Iverson & Maguire, 2016; Lum et al., 1998; Pettit et al., 1997; Shore & Martin, 1989). The number of published articles about job satisfaction is large. Over 40 years ago, Locke (1976) counted more than 3,000 publications relating to job satisfaction, and the focus has only continued to grow. Therefore, job satisfaction, its components and their impact on different organisational concepts has been widely explored (Bentler & Kano, 1990; Cano & Miller, 1997; Hackman & Oldham, 1974; Hagedoorn et al., 1999; Iverson & Maguire, 2016; Lum et al., 1998; Pettit et al., 1997; Shore & Martin, 1989). Researchers suggest that job satisfaction is a topic of significant interest because most of the literature in industrial organisational psychology, organisational behaviour and social psychology includes this factor as the focus of study (Alotaibi, 2001; Parnell & Crandall, 2003; Soomro, Breitenecker, & Shah, 2018). Table 2.3 provides a representative selection of definitions over the last 70 years. The table shows that research on job satisfaction dates back to the 1930s and has received substantial attention by researchers. Hoppock (1935) initially proposed the concept of job satisfaction and considered that job satisfaction was composed of what was felt in the working environment and what satisfied employees

both physically and psychologically. Since then, hundreds of definitions of job satisfaction have been created and the majority claim that job satisfaction is a positive feeling and emotional attitude towards work (Locke, 1976; Oshagbemi, 1999; Vroom & Jago, 1978).

Authors	Definitions
Hoppock, 1935, p. 47)	"a combination of psychological, physiological and environmental circumstances that cause a person to say: I am satisfied with my job".
Vroom (1964, p. 15)	"positive attitudes to the job are conceptually synonymous with job satisfaction"
Locke (1976, p. 1300)	"a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences".
Brief and Weiss (2002, p. 175)	"job satisfaction is a positive (or negative) evaluated judgement one makes about one's job or job situation".
Kreitner and Kinicki (2013, p. 351)	"job satisfaction is an effective or emotional response to various aspects of the job".
Lu et al. (2005); Riisgaard (2016, p. 2)	"the affective orientation one has towards his or her job, either as a global feeling about the job or as a related constellation of attitudes about various aspects or facets of the job."
Tsai and Yen (2018, p. 3)	"an affection that indicates employee perception of how well a firm takes care of them".

Table 2.3: Chosen definitions for job satisfaction

In order to deepen the theories underlying the construct of job satisfaction and its possible causes and effects, a review and critique of the fundamental studies on job satisfaction is presented below. Vroom (1964) defines job satisfaction as an attitude to work. This means that if a person is positively oriented towards their work roles, then they are satisfied with their job, and if a person is negatively oriented towards their work roles, they are dissatisfied with their job. Later Locke (1976) described job satisfaction as the result of

assessing one's own work as achieving or fulfilling the important job values, provided these values are congruent with or help to meet one's own basic needs. The main features of Locke's definition are that a person assesses their workplace by the way they measure themselves against their work values, and that these work values are derived from basic needs. Locke proposes two levels in the process of job satisfaction: work values result from the basic needs of a person, and the achievement of the work values corresponds to their satisfaction with the work. Thus, job satisfaction is a result of assessment based on achieving the work values important to the person.

Recent research confirms these assumptions and suggests that an individual's job satisfaction can be defined as the amount of satisfaction multiplied with the importance of the work (Pawirosumarto, Sarjana, & Gunawan, 2017). An individual's satisfaction or dissatisfaction is something personal that depends on how the individual perceives the compatibility or conflict between desires and outcomes (Cronley & Kim, 2017). An individual will achieve job satisfaction when the desired minimum limit has been fulfilled and there is no gap between desires and reality (Pawirosumarto et al., 2017). Therefore, the level of job satisfaction can be considered as specific to each individual.

In conclusion, it can be stated that there is no clear and universal answer to the question: "What is job satisfaction?" Despite the multitude of definitions and differences in the concept of job satisfaction, it is generally agreed that job satisfaction is a heterogeneous and multidimensional construct (Spector, 1998), which is understood as a different experience in the workplace that causes an employee's attitude towards their work. These conditions refer to various characteristics of the work, such as spatial circumstances, experienced autonomy or social contacts with superiors and colleagues (Alegre, Mas-Machuca, & Berbegal-Mirabent, 2016). However, the extensive research on job satisfaction has provided a very rich and broad definition that is primarily an attitude based on the individual's assessment or evaluation of work. This means that job satisfaction is more than what people think about their job; how a person thinks about their job is a perceptible representation of their own assessment of the job. However, this job-related assessment can continue for a longer period of time while working in the job. This means that the more individuals learn about their job or the more they experience their job, the better they can judge or evaluate it. Thus, the evaluation process continues over time until a firm conclusion has been reached about the job. Therefore, the level of satisfaction depends on the individual's education, and the prevailing values and various social, economic and cultural conditions in the sense of the fast-paced change of the time (Hauff et al., 2015). This current research uses Riisgaard's (2016) definition, defining job satisfaction as the affective orientation of an individual towards a job, either as a global feeling or a related constellation of attitudes about different aspects about the job.

Although the debate about which factors play a greater role in determining job satisfaction is ongoing, researchers acknowledge that both environmental/situational factors and dispositional factors must be taken into account when characterising job satisfaction (Judge, Piccolo, Podsakoff, Shaw, & Rich, 2010b; Spector, 1998). Scientific analysis has repeatedly identified important dimensions of this construct, such as working conditions, payment or career development. Most researchers agree that environmental or workplace factors play a very important role in determining job satisfaction (Kahn, 1990; Katz & Kahn, 1978; Locke, 1976; Spector, 1998; Vroom, 1964; Weiss, 2002). Since there are many different descriptions in the literature of dimensions of job satisfaction, Table 2.4 shows key authors and the dimensions in their definitions of job satisfaction.

Source	Work Content	Recognition	Pay	Co-Workers	Supervision	Career Opportunities
Vroom (1964)	х	х	х	х	х	х
Weiss et al. (1967)	х	х	х	Х	х	х
Smith, Kendall, and Hulin (1969)	х	х	x	Х	х	х
Fischer and Lück (1972)	х	х	х			х
Neuberger (1974)	х	х	х	х	х	х
Locke (1976)	х	х	х	х		х
Spector (1998)	х	х	х	X	X	х
Warr (2007)	х	х	х	X	х	х

Table 2.4: Dimensions of job satisfaction

In the 1950s the psychologist Fredrick Herzberg tried to find out why employees feel satisfied with their job. Herzberg (1998) set about determining the effects of attitudes on motivation by asking people to describe situations in which they felt really good and really bad in their work. The result of this research was the basis of Herzberg's Motivation–Hygiene Theory (Herzberg, 1998). Herzberg (2008) identified that certain characteristics of a job are consistently related to job satisfaction, while different factors are associated with job dissatisfaction. In this way he described factors for satisfaction such as achievement, recognition and growth, and factors for dissatisfaction such as supervision,

salary and relationship with supervisor and peers. The conclusion was that job satisfaction and job dissatisfaction are not opposites. Removing the causes of dissatisfaction will not create satisfaction, nor will adding the factors of job satisfaction eliminate job dissatisfaction.

Therefore, after examining the different dimensions shown in Table 2.4 aligned with the definition of job satisfaction and the factors of job satisfaction from Herzberg (2008), three dimensions are used to examine job satisfaction in this research: work content, recognition and career development opportunities.

Work content should generally be designed for employees to do their job physically intact, to keep stress and fatigue to a minimum, and to foster and facilitate work through appropriate space and equipment (Semmer, Udris, & I, 2004). Weinert (1998) goes one step further and postulates that the working situation should correspond to the employee's physical and mental needs and, moreover, should be intellectually demanding. The working content should promote self-responsibility and initiative as well as support individuals' self-development (Churchill, Ford, & Walker, 1974; Wright & Kim, 2004). Employees value self-determination, accomplishment, control, autonomy, application of their skills and learning of new content (Wright & Kim, 2004). In addition, a varied, creative and sometimes difficult task which offers the chance of success is especially preferred (Özpehlivan et al., 2016). If these conditions can be found at least partially in the workplace, this has a positive influence on employee satisfaction (Weinert, 1998).

In regards to recognition, studies show that people who feel valued are more positive about themselves and their ability to contribute, which can, in turn, increase productivity and satisfaction (Daniels, 1999; Gostick & Elton, 2009; Nelson & Cooper, 2005; Tessema, Ready, & Embaye, 2014). A number of research studies show that non-financial rewards such as recognition and other intrinsic rewards are an indispensable condition for job satisfaction (Nelson & Cooper, 2005; Tessema et al., 2014). Based on a survey of 200,000 employees, Gostick and Elton (2009) conclude that the correct implementation of employee recognition can increase profitability, and increase employee engagement and satisfaction. Additionally, Nelson and Cooper (2005) states that recognition leads to improved communication, better collaboration, and less absenteeism and turnover. Therefore, recognition is an important tool for managers and HR professionals to motivate employees and promote business success (Tessema et al., 2014).

Potential opportunities for career development and resulting professional success are further important features relating to job satisfaction. Bruggemann et al. (1975) explain that development opportunities are self-updating and improve a person's status. Research has shown that career opportunities have a significant impact on job satisfaction (Luthans, 1973). This is especially the case for individuals with significant working experience, as they are more satisfied with career opportunities because they see these as positive developments and improve perceptions of social status (Curry, Wakefield, Price, & Mueller, 1986; Özpehlivan et al., 2016). This status is not only used in the work arena but also in private life which makes the effect on job satisfaction stronger (Özpehlivan et al. 2016). Therefore, in this research career development opportunities are seen as an important dimension for job satisfaction.

In sum, job satisfaction is an important organisational outcome and incorporates different dimensions, such as work content and career development opportunities. It was shown that job satisfaction has a strong relationship with other organisational outcomes, such as turnover and performance, and can be seen as an indicator for a healthy and quality work culture. For this reason, this research focuses on the effects of an innovative and inclusive culture on job satisfaction.

### 2.7 Conclusion

The literature review focused on the research that underpins each of the study variables—climates for innovation and inclusion, employee engagement, job stress and job satisfaction—and why these are important for organisations. The literature showed that climate for innovation is characterised by a range of behaviours, but above all innovative ideas, initiative and risk-taking are the driving behavioural patterns which make an employee an intrapreneur. Therefore, promoting these identified main characteristics could be essential for organisations to foster a climate for innovation. As workforces become increasingly diverse because of global economics and population growth, the challenge is to channel diversity into beneficial outcomes with inclusive work cultures. The review showed that organisations should take care of behaviours so that employees feel belongingness, uniqueness, respected and psychological safety to promote an inclusive climate. Since both climates are intended to serve as a starting point for innovative and inclusive employee behaviours, this research focuses on the effects on organisational outcomes such as employee engagement.

The literature review revealed that employee engagement is defined as an active, workrelated positive psychological condition operationalised by the intensity and direction of cognitive, emotional and behavioural energies. These components might play an important role in influencing the relationship between climate for innovation and inclusion in relation to organisational outcomes, such as job satisfaction. However, a lack of inclusive/innovative climates or employee engagement can cause issues, such as uncertainty, feeling excluded or employee burnout. As both climates might have a strong influence on the work environment of employees, which could influence the job stress level, the literature explored the term "job stress" and described stress as a stressor–strain process, with strains such as overwork and anxiety.

Integral to the relationship between an innovative/inclusive climate and employee engagement/stress is the influence that these factors can have on employee job satisfaction. Job satisfaction is an important organisational outcome and a good indicator for quality of work, which was defined as an individual's affective orientation towards a job, either as a global feeling or a related constellation of attitudes about different aspects of the job.

To conclude, Chapter 2 outlined the literature regarding the five main constructs and the next chapter (Chapter 3) will show the theoretical framework and the hypotheses behind it.

## **CHAPTER 3**

# MODEL, HYPOTHESES AND RESEARCH QUESTION DEVELOPMENT

### 3.1 Introduction

The literature review (Chapter 2) gave more information about the five different research topics. The purpose of this chapter is to show the theoretical framework, the hypotheses and detailed research questions behind it. Figure 3.1 provides an overview of the chapter structure.



Figure 3.1: Outline of Chapter 3 Source: Developed for this research

### **3.2 Theoretical Framework**

In this chapter a theoretical framework for exploring the impact of climate for innovation and climate for inclusion on job satisfaction is developed based on JD-R theory, as conceptualised by Demerouti et al. (2001). Before the model and its hypotheses are shown in more detail, this section introduces JD-R theory and gives a brief commentary about JD-R theory and its different pathways.

#### 3.2.1 Building on Job Demands–Resource Theory

To investigate how a climate of innovation or a climate of inclusion may relate to job satisfaction, this research framework is built on JD-R theory (Bakker et al., 2014; Bakker & Demerouti, 2017). JD-R theory is a recent extension of the JD-R model (Bakker & Demerouti, 2007), which was introduced in the literature 15 years ago (Demerouti et al., 2001). Since then, the model has been applied in thousands of organisations and has inspired hundreds of empirical articles (Bakker et al., 2005; Bakker et al., 2014; Bakker & Demerouti, 2017; Nahrgang et al., 2011; Rodríguez-Muñoz et al., 2014). The theory has been shown to be applicable to several occupations and resources (see Bakker & Demerouti, 2017). For this reason, the JD-R theory provides a basis for building this research and to investigate the main research question.

The core principle of JD-R theory is the assumption that every job can be divided into two general categories: job demands and job resources. These two factors incorporate different specific demands and resources, depending on the context (Bakker & Demerouti, 2017; Xanthopoulou et al., 2007). Job demands and job resources are applicable to a variety of occupations, such as product- or people-related work environments (Bakker & Demerouti, 2017). Job demands are typically considered as physical, psychological, social or organisational aspects of work that require sustained effort and are therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007; Demerouti et al., 2001; Schaufeli & Bakker, 2004). Examples of job demands include: high work pressure and stress, or emotionally demanding interactions between team members (Bakker & Demerouti, 2017). On the other hand, job resources are psychological, physical, social or organisational factors that are functional in achieving work goals, buffering job demands, or stimulating personal growth, learning and development (Bakker, 2011; Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Examples of job resources are autonomy, skill variety or innovativeness (Bakker et al., 2005). Therefore, it can be considered that a climate for innovation or climate for inclusion can be seen as a job resource.

The two categories of work characteristics—job demands and job resources—evoke two relatively independent psychological processes in JD-R theory. The first pathway is a motivational process in that employees need to have sufficient resources to thrive at work (Bakker & Demerouti, 2017). If employees have sufficient resources at work, they will experience a motivating response to their work characterised by vigour, dedication and absorption (Schaufeli & Bakker, 2004). Job resources, through their (intrinsic and extrinsic) motivational potential, help employees achieve their goals. In return, employees can experience more of their personal fulfilment (Hackman & Oldham, 1974). Therefore, job resources can lead to organisational commitment and employee engagement (Schaufeli & Bakker, 2004), which in turn promotes job satisfaction.

The second pathway is the health impairment process, in that job demands require sustained effort that can deplete an employee's resources, leading to energy depletion overall and health problems (Bakker & Demerouti, 2017; Caplan, Cobb, French, van Harrison, & Pinneau Jr, 1975). For example, specific job demands such as workload or emotional demands have been repeatedly found to predict exhaustion and stress within different occupational groups (Bakker et al., 2005; Bakker, Demerouti, Boer, & Schaufeli, 2003). As a result, job demands are associated with psychological costs such as exhaustion or stress at work, which in turn impair job satisfaction.

In conclusion, JD-R theory provides a good foundation for this research because the specific constructs, such as climate for innovation or climate for inclusion, can be seen as job resources. Further, this research focuses on job satisfaction, which has commonly been used as an outcome of both the motivational process and the health impairment process. For the pathways, employee engagement will be used to measure the motivational process and job stress will be used to measure the health impairment process. The connection of the constructs of this research with JD-R theory is further explained in the hypotheses development section (see section 3.3). The goal of the current section was to explain JD-R theory; it was shown that this broad theory applies to several occupations and job resources, making it an optimal basis to investigate the main purpose of this research.

#### 3.2.2 Theoretical Model

The previous section presented JD-R theory as the foundation for developing the current research model. This section presents the framework for this research. Based on the reviewed literature, the main objective of this research is to explore the relationship of climate for innovation and climate for inclusion with job satisfaction through the motivational and health impairment pathways (see section 3.3 Hypothesis Development). First, the model (Figure 3.2) proposes five separate constructs: climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction. As mentioned in the previous section, climate for innovation and climate for inclusion serve as job resources and therefore as independent variables. They both provide a direct path to job satisfaction, which is the outcome (dependent variable) in this model. Furthermore, employee engagement and job stress provide mediating paths from climate for innovation and climate for inclusion to job satisfaction. Therefore, as based on the reviewed literature, climate for innovation and climate for inclusion will directly positively increase job satisfaction. Employee engagement and job stress will mediate this relationship with job satisfaction. This is proposed to be a positive influence for the motivational pathway and a negative influence for the health impairment pathway. The research model will be tested with six different hypotheses, each hypothesis is developed and justified with previous literature in the next section.



Figure 3.2: Theoretical Model Informed by JD-R theory (Bakker et al., 2003)

### 3.3 Hypotheses and Research Question Development

As shown in the theoretical model in the previous section, this research proposes that climate for innovation and climate for inclusion (acting as a job resource) can trigger both the motivational and health impairment processes and this will have both benefits and costs for job satisfaction. According to JD-R theory, specific employee work behaviours, such as self-efficacy or self-determination, can increase employee engagement through personal goal achievement at work (Gawke et al., 2017b). Studies have supported the motivational and impairment pathways of JD-R theory regarding how work behaviour can affect wellbeing in the workplace. For example, an intervention study by Van Wingerden, Derks and Bakker (2017) showed that participants who had high availability of job resources reported a significantly higher level of employee engagement. Contrarily, other studies have supported the notion that the impairment pathway as a working behaviour, such as innovativeness, leads to increased exhaustion as workloads increase (Gawke et al., 2017b). Further, Gawke et al. (2017a) found that levels of employees' innovative behaviours can foster job stress, which in turn negatively influences job performance. Therefore, this research utilises JD-R theory to investigate the effect of climate for innovation or inclusion on job satisfaction through both the motivational process and the health impairment process. Each direct effect and mediated effect between climate for innovation/inclusion and job satisfaction is linked to a particular hypothesis, all of which are explained and justified in the next sections.

#### 3.3.1 Hypotheses and Research Questions for Climate for Innovation

In order to measure the direct effect of climate for innovation on job satisfaction through the lens of JD-R theory, climate for innovation is utilised as a job resource. However, the use of climate for innovation as a job resource is lacking in the innovation literature. There is currently only one recent study which investigates innovative employee behaviour through the lens of JD-R theory. Gawke et al. (2017a) linked intrapreneurship (i.e. innovativeness and risk-taking) as a job resource and examined how employees' reinforcement sensitivity qualified the relationships between their intrapreneurial behaviour, subjective wellbeing and other-rated job performance. Gawke et al. confirmed that employee intrapreneurship related positively to employee engagement, which subsequently increased innovativeness and in-role performance. In contrast, it was found that employee intrapreneurship also increased exhaustion, which consequently decreased in-role performance (Gawke et al., 2017a). These results suggest that climate for innovation needs to be explored for both the motivational and job impairment pathways of JD-R theory. In general the JD-R model outcomes are typically job-performance-related, as the literature has shown links between job resources and increases in performance (Gawke et al., 2017b). When job resources are high there is more employee engagement and higher employee performance (Bakker, Demerouti, & Verbeke, 2004; Schaufeli & Bakker, 2004). Therefore, this research set out to investigate climate for innovation as a job resource and its impact on job satisfaction through the lens of JD-R theory. The sections below provide an overview of previous literature concerning the relationship between innovation and job satisfaction.

Researchers have shown the benefits of a climate for innovation on employee job satisfaction in different contexts, such as policing and retail (Brimhall, Lizano, & Mor Barak, 2014; García-Buades et al., 2015; Hwang & Hopkins, 2012; Hwang & Hopkins, 2015; Iranmanesh, Zailani, Moeinzadeh, & Nikbin, 2017; Karmeni et al., 2017). For example, an innovative and creative climate has been found to be positively correlated with employees' job satisfaction (Johnson & McIntye, 1998). This is corroborated by Shalley, Gilson and Blum (2000), who found that employee creativity is aligned with higher job satisfaction and work commitment. This shows that the ability to develop new workplace skills and to embody innovative behaviours could be central to employees' job satisfaction (Hwang & Hopkins, 2012). Very recently, Karmeni et al. (2017) proposed that organisational innovation helps employees to experience a greater sense of involvement in their work, which enhances their job satisfaction. Furthermore, if organisations are able to develop and sustain a perceived innovative climate, this is more likely to result in higher levels of motivation, commitment and employee engagement (Shanker, Bhanugopan, van der Heijden, & Farrell, 2017). Thus, as supported by the literature, climate for innovation will have a positive direct effect on job satisfaction. Further, this literature suggests that employee engagement could play a role in the relationship between climate for innovation and job satisfaction, which indicates a positive influence of the motivation process pathway of JD-R theory.

However, it has been shown that the relationship between a climate for innovation and job satisfaction can have a negative influence. It has been argued that innovation and rapid technological change in organisations can have a negative impact on employee wellbeing, such as increasing burnout (González-Romá & Hernández, 2016). This negative effect on wellbeing could be related to stress, which implies that job stress could play a mediating role within the relationship between climate for innovation and job satisfaction through the health impairment process of JD-R theory. Nevertheless, previous research has asserted that climate for innovation can have a negative direct effect on job satisfaction (González-Romá & Hernández, 2016).

In conclusion, the former sections have shown that climate for innovation can have positive and negative effects on job satisfaction. Researchers have focused heavily on certain contexts (e.g. police, child welfare, retail) and there is still no overall agreement on the relationship between innovation and job satisfaction. It is not clear how both constructs relate to each other or in what direction the relationship will be. Therefore, this research explores this relationship and proposes that climate for innovation has a direct positive/negative effect on job satisfaction. As such, the following hypotheses and research question have been developed:

- **H1a:** A climate for innovation has a direct positive effect on employee job satisfaction.
- **H1b:** A climate for innovation has a direct negative effect on employee job satisfaction.
- **RQ1:** Does a climate for innovation influence job satisfaction and, if so, why?

#### **3.3.1.1** Employee Engagement as a Mediator

The previous hypotheses state that climate for innovation will have a direct positive/negative effect on job satisfaction, and research further suggests that employee engagement will mediate this relationship (Shanker et al., 2017). This assumption aligns with the JD-R premise regarding the motivational process, as it can be argued that climate for innovation should relate to increased job satisfaction through work engagement. Before this mediating role is explained, the relationships between climate for innovation and employee engagement, and employee engagement and job satisfaction are discussed.

Climate for innovation should have a positive effect on employee engagement. The work of Bakker and Demerouti (2014), and very recently Gawke et al. (2017b), shows that climate for innovation within work environments promotes experiences of absorption, commitment and vigour. Possible reasons for this are the personal achievement of goals and a more resourceful working context (Gawke et al., 2017b). Self-initiated effort contributes to achieving such goals and leads to increased positive affect on work engagement (Gawke et al., 2017b). Such experiences can increase employees' ability to better cope with the job demands of the workplace (Kanfer, 1990). In addition, participation in new innovative projects in an innovative climate will offer opportunities for new tasks and competencies that are known to positively impact immersion and employee enthusiasm at work (Bakker et al., 2014; Gawke et al., 2017b). Although research has confirmed the

positive relationship between innovation and performance (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008), only a few studies support the notion that an innovation climate can promote work engagement (Gawke et al., 2017b). A qualitative study by Marvel, Griffin, Hebda and Vojak (2007), based on 24 in-depth interviews with technical staff, showed that participating in intrapreneurship (innovative projects) enriches employees' work by being part of challenging projects. As a result, employees experienced motivation and enthusiasm in their work, which can be seen as indicators for higher work engagement (Bakker, 2011). In general, research has shown that climate for innovation has a positive influence on employee engagement.

The section above notes that a climate for innovation could positively influence employee engagement. Certainly, it can be assumed that employee engagement is connected with job satisfaction because employees who are highly engaged are likely also to be satisfied. In fact, an optimistic emotional attitude towards work can increase the sense of importance and fascination with the workplace (Tejpal, 2015). Both employee engagement and job satisfaction have an optimistic emotional and cognitive association with the work environment (Schaufeli & Bakker, 2004; Spector, 1998). According to Saks (2006), employee engagement significantly positively predicts job satisfaction. Further, Vorina, Simonič and Vlasova (2017) and Tejpal (2015) recently found in their studies that employee engagement is positively related to job satisfaction. Although recent studies have been conducted on employee engagement and job satisfaction, research is still in its infancy. Regardless, research has demonstrated that constructive outcomes of employee engagement lead to increases in organisational satisfaction.

Through the lens of JD-R theory the existence of environmental job resources, such as climate for innovation, should activate the motivational process pathway. In relation to this pathway and in combination with underlying literature on the involved constructs (climate for innovation, employee engagement, job satisfaction), this research expects that climate for innovation will invoke employee engagement which has a positive effect on job satisfaction. This is because employees with sufficient job resources will feel efficacious, important to the organisation, optimistic, engaged and satisfied with their work (Gawke et al., 2017b; Xanthopoulou et al., 2007). For example, (Gawke et al., 2017a) showed that work engagement mediates the relationship between intrapreneurial behaviour and job performance. Further, Gawke et al. claim in their limitations that more studies are needed to examine the intrapreneurial behaviours (e.g. innovativeness, risk-taking) in the motivational process of JD-R theory with different contexts. In sum, research is lacking in regard to the motivational process pathway and innovation in organisations with a focus on job satisfaction as an outcome variable. The influence of the motivational process on the

relationship between climate for innovation and job satisfaction is still relatively unclear. Therefore, based on the literature and JD-R theory, it is proposed that:

- **H1.1:** Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction.
- **RQ2:** Does a climate for innovation influence employee engagement and, if so, why?

#### 3.3.1.2 Job Stress as a Mediator

As mentioned previously, research has shown that climate for innovation can have a negative influence on job satisfaction, with job stress potentially mediating this relationship. This proposition is corroborated by JD-R theory through the health impairment process pathway, proposed by Bakker and Demerouti (2014, 2017). Before this mediating role is explored, the relationship between climate for innovation and job stress, and then job stress with job satisfaction will be discussed.

Building on the health impairment process (Bakker & Demerouti, 2014, 2017), this research suggests that climate for innovation should be related to more exhaustion at work, because employees' intrapreneurial behaviour (e.g. innovativeness, showing initiative) requires additional energy, time and resources that do not directly contribute to formal work goals (Gawke et al., 2017b). For example, innovative behaviours often require employees to go the extra mile to meet their job requirements and the additional challenges associated with innovative tasks (Birkinshaw, 1997). This can cause employees to feel a greater sense of time pressure, anxiety and worry at work (Schaufeli & Bakker, 2004). In addition, entrepreneurial projects often have to be discontinued because they miss their targets and this causes negative reactions amongst employees (Shepherd et al., 2011). Therefore, the literature shows that climate for innovation increases job stress, as it itself is a potential stressor.

Job stress has been extensively studied in the last two decades in terms of its outcomes (Jannoo et al., 2015). Researchers have found that high levels of stress have a negative impact on health (Guglielmi & Tatrow, 1998; Spurgeon, Harrington, & Cooper, 1997), performance (AbuAlRub, 2004; Sullivan & Bhagat, 1992) and satisfaction (Rothmann, 2008). Stress at work can also lead to depression (Hammen, 2005; Iacovides, Fountoulakis, Kaprinis, & Kaprinis, 2003; Tennant, 2001) and poor physical health (Howard et al., 1999). Some studies have also found that employees' increased workload reduces their job satisfaction (Bakker et al., 2014; Vagg, Spielberger, & Wasala, 2002). Earlier studies have

tended to focus on the relationship between workplace stress and job satisfaction. These studies generally indicate that stress and job satisfaction are inversely proportional (Hollon & Chesser, 1976; Miles & Perreault, 1976; Miles & Petty, 1975). This means that job stress has a negative effect on job satisfaction. For example, Kemery, Mossholder and Bedaian (1987) studied 370 employees at a major south-eastern university and found that stress at work has a direct negative impact on job satisfaction. In summary, research has repeatedly shown that job stress can negatively influence job satisfaction.

Although the negative relationship between job stress and job satisfaction has been established in the literature, the knowledge regarding the meditating role of job stress in the relationship between climate of innovation and job satisfaction is lacking (Gawke et al., 2017b). This is supported by a recent study by Kattenbach and Fietze (2018), who state that future research should investigate the issue of adverse effects related to employee intrapreneurship and potential negative effects on organisational outcomes, such as job satisfaction. Thus, building on JD-R theory's health impairment process and the discussed literature, this research explores the relationship between climate for inclusion, job stress and job satisfaction, proposing:

- **H1.2:** Job stress has a negative mediation role in the relationship between climate for innovation and job satisfaction.
- **RQ3:** Does a climate for innovation influence job stress and, if so, why?

#### 3.3.2 Hypotheses and Research Questions for Climate for Inclusion

In order to measure the direct effect of climate for inclusion on job satisfaction through the lens of JD-R theory, climate for inclusion is utilised as a job resource. Similar to climate for innovation, the use of climate for inclusion as a job resource in regard to JD-R theory is still relatively unexplored in the literature. Inclusion research is a new concept in organisational literature and is still in its infancy. However, there is some evidence that an employee's sense of inclusion positively influences organisational outcomes, such as job satisfaction (Cullen, Link, Wolfe, & Frank, 1985; Drory & Shamir, 1988; Hwang & Hopkins, 2012; Lambert, Hogan, & Barton, 2002; Mor Barak et al., 1998; Paoline, Lambert, & Hogan, 2006). To further extend these results this research investigates climate for inclusion as a job resource and its influence on job satisfaction through the lens of JD-R theory. The next sections investigate previous literature about the relationship between inclusion and job satisfaction.

As mentioned above, climate for inclusion is still in its infancy. Although inclusion is increasingly popular among diversity scholars, it remains a new concept without much consensus on the construct (Shore et al., 2011). However, research has shown that employees feel that a sense of inclusion increases job satisfaction (Hwang & Hopkins, 2012; Mor Barak, 1998; Mor Barak et al., 1998). It has been found that employees' integration into the organisation improves their work experience (Lambert et al., 2002). Inclusion in the workplace refers to an individual's sense of being a part of the organisation in both formal processes, such as decision-making and access to information, and informal processes, such as lunch meetings and social gatherings (Brimhall et al., 2016). Mor Barak et al. (2006) and Shore et al. (2011) have developed a theoretical framework of inclusion in which they argue that diversity and inclusion lead to higher job satisfaction, organisational commitment, individual wellbeing and task effectiveness. Similarly, Brimhall et al. (2014) showed that perceived level of inclusion appears to be a strong predictor for job satisfaction, explaining that individuals who are different from the corporate main stream and who feel excluded will experience lower job satisfaction. In sum, several researchers have reported that employees' perceptions of inclusion are related to organisational outcomes such as job satisfaction, organisational commitment and employee wellbeing (Acquavita et al., 2009; Barak & Levin, 2002; Hwang & Hopkins, 2015; Mor Barak et al., 2006).

There is evidence that an employee's sense of inclusion is related to job satisfaction (Brimhall et al., 2014; Brimhall & Mor Barak, 2018). However, Hwang and Hopkins (2015) have stated that more exploration of the relationship between perceived organisational inclusion and job satisfaction is needed due to the limitations of their study,

such as low gender diversity and low response rate. This statement is in line with very recent studies that suggest that climate for inclusion needs more exploration in order to fully understand the nature of this construct (Brimhall & Mor Barak, 2018; Randel et al., 2017; Shore et al., 2011; Shore et al., 2017). In conclusion, the literature review has shown that climate for inclusion should positively influence job satisfaction. Further, recent publications call for more research to learn about the relationship between climate for inclusion and job satisfaction. Therefore, this research further investigates the relationship between climate for inclusion and job satisfaction, proposing the following hypothesis and research question:

- **H2:** A climate for inclusion has a direct positive effect on employee job satisfaction.
- **RQ4:** Does a climate for inclusion influence job satisfaction and, if so, why?

#### 3.3.2.1 Employee Engagement as a Mediator

The previous hypothesis states that climate for inclusion will positively influence job satisfaction, but it is not clear which constructs could play a mediating role in this relationship. Shore et al. (2011) state that employee motivation as a mediator should be considered in future inclusion research. This statement aligns with the recommendations of Chen and Tang (2018), who propose that intrinsic motivation can be seen as employee engagement and should be considered as a mediator for inclusion and job satisfaction. Employee engagement as a possible mediator can be explained by the motivational pathway based on JD-R theory. Before this mediation role is explained, the relationship between climate for inclusion and job stress is discussed.

Job resources such as team inclusion, fairness or belonging could result in positive psychological and organisational outcomes such as employee engagement. It is expected that job resources will cause a sense of team solidarity, which enables employees to feel unified, motivated, safe, optimistic about the team's future and, consequently, engaged in their work. To corroborate this, research has found that individuals from diverse social and racial groups which are not included often have no access to information and opportunities in organisations (Mor Barak et al., 1998). Further, workplace inclusion research has shown that employee perceptions of inclusion have been established to strongly predict engagement and performance (Barak & Levin, 2002; Mor Barak et al., 2006; Mor Barak et al., 2016). A study by Findler et al. (2007) reports that employees who feel excluded experience less organisational commitment. In addition, the integration in work teams fosters a climate of trust and employee engagement, and organisations dedicated to

promoting employee engagement can expect to reap the benefits of a trustworthy workplace that includes good working relationships (Downey, van der Werff, Thomas, & Plaut, 2015). Very recently, Goswami and Kishor (2018) found that workplace inclusion has a significant positive relationship with employee engagement, but they further state that future research should be conducted in other sectors with higher sample sizes that also have high workforce diversity. Therefore, it can be assumed that inclusion can be utilised to improve employee participation and engagement.

The section above showed that a climate for inclusion can positively influence employee engagement. Additionally, it has already been illustrated (see H1.1) that research has shown that employee engagement can positively impact job satisfaction; however, to date, no study has investigated the mediating effect of employee engagement within the motivational pathway between climates for inclusion and job satisfaction. Researchers, such as Shore et al. (2011) and Chen and Tang (2018), have called for more research in the area of climate for inclusion, as more exploration is needed to have a clearer understanding of inclusion and mediating variables, such as employee engagement. In addition, Downey et al. (2015) encourage researchers to further elucidate the construct of inclusion in order to expand its nomological network. Therefore, the current research explores this relationship and, based on JD-R theory; it is proposed that work engagement will positively mediate the relationship between climate for inclusion and job satisfaction:

**H2.1:** Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction.

**RQ5:** Does a climate for inclusion influence employee engagement and, if so, why?

#### 3.3.2.2 Job Stress as a Mediator Between Inclusion and Job Satisfaction

It is not clear which constructs could play a mediating role in the relationship between climate for inclusion and job satisfaction. Research indicates that employees who work in inclusive work environments feel higher job satisfaction (Hwang & Hopkins, 2012; Mor Barak et al., 1998). With regard to JD-R theory and the health impairment process, job stress could play a mediating role in this relationship. Before this mediating role is explained, however, the relationship between climate for inclusion and job stress is discussed. Inclusion research is still in its early stage and there is very little information about the direct effect of inclusion on job stress. Some researchers have stated that inclusion contributes to positive relationships with co-workers and this can help reduce job stress (Cullen et al., 1985; Drory & Shamir, 1988; Paoline et al., 2006). Brimhall et al. (2016) states that employees who work in an inclusive environment have better access to information, task-related resources and connections to supervisor and co-workers. From this explanation it can be assumed that the inverse is true, whereby less inclusion leads to higher job stress because excluded employees have to reach their goals independently without any help from their work group. Therefore, they have to conduct all information searching and resource gathering on their own, which leads to more job demands and job stress as compared to employees who have to perform the same work tasks in an inclusive environment. Ely and Thomas (2001) support this assumption and outline that a climate for inclusion involves sharing experiences, information and resources among group members in an effort to work toward the same goal. Ely and Thomas further state that working with other co-workers together rather than individually positively influences the work experience and performance. In conclusion, there is very little research about the relationship between inclusion and job stress, but it is proposed that a positive climate for inclusion will reduce job stress.

It has been highlighted (see H1.2) that research has repeatedly shown that job stress negatively impacts job satisfaction (Jannoo et al., 2015; Rothmann, 2008). The next section explains the mediating role of job stress between inclusion and job satisfaction in more detail. Building on the health impairment process (Bakker & Demerouti, 2014, 2017), this research proposes that job stress will act as a mediator between innovation and inclusion on job satisfaction. In contrast to employee engagement, job stress will negatively mediate the relationship between inclusion and job satisfaction, which means that inclusion will negatively influence job stress, which in turn negatively influences job satisfaction. Therefore, if climate for inclusion increases, job stress will decrease, causing job satisfaction to increase.

Research suggests positive effects for individuals who feel included, such as decreased emotional stress and anxiety (Hitlan & Noel, 2009; Scott, Restubog, & Zagenczyk, 2013) as well as increased wellbeing and organisational effectiveness (Baumeister et al., 2002; Scott et al., 2013). Furthermore, inclusion contributes to positive relations with co-workers and this can help increase job satisfaction (Cullen et al., 1985; Drory & Shamir, 1988; Paoline et al., 2006). This aligns with the work of (Brimhall et al., 2014), who found in a longitudinal study that feelings of inclusion increase job satisfaction. Therefore, it is proposed that job stress acts as a mediating variable between the relationship of climate for inclusion and job satisfaction. However, the mediating effect of job stress on climate for

inclusion and job satisfaction has not yet been explored. Chen and Tang (2018) note that there is a research gap and state that future research should investigate more potential mediators, such as psychological safety or intrinsic motivation. Therefore, this research investigates job stress as a potential mediator in the relationship between climate for inclusion and job satisfaction. As such, the following hypothesis and research question are proposed:

- **H2.2:** Job stress has a negative mediation role in the relationship between climate for inclusion and job satisfaction.
- **RQ6:** Does a climate for inclusion influence job stress and, if so, why?

#### 3.3.2.3 Link Between Climate for Innovation and Climate for Inclusion

The previous hypotheses focus more on the relationships between climate for innovation and climate for inclusion on mediator and outcome variables. This discussion covered both climates in combination and how they may interact with each other. Climate for innovation was defined as an environment where employees are encouraged to have innovative ideas, show initiative and take risks (see section 2.2). In addition, climate for inclusion was defined as proactive behaviours that create an environment in which everyone is actively included, treated fairly and respectfully, has equal access to opportunities and resources, and can be themselves while contributing fully as part of the organisation's success. It can be assumed that a diverse workforce may have greater potential to innovate and improve corporate processes to homogenous workforces. For example, Nembhard and Edmondson (2006) found that when leaders promote an inclusive environment, employees are more engaged in improvement efforts. Inclusion has been linked to increased trust between co-workers (Downey et al., 2015; Shore et al., 2011), which in turn is associated with an increased willingness on the part of organisational members to exchange new ideas and work with them, and which is a crucial component of innovation (Lee & Hong, 2014; Proudfoot et al., 2007; Sankowska, 2013). Further, Li et al. (2017) have found that high team culture diversity with a climate for inclusion leads to more creativity and innovation. It has further been shown that employees with different cultural backgrounds are valued for their unique perspectives, which results in more willingness to share their ideas and collaborate (Li et al., 2017). Additionally, a very recent study by Brimhall and Mor Barak (2018) showed that a climate for inclusion has a strong positive effect on a climate for innovation. They further mention that research on this topic is limited and that other methods, such as qualitative research, should be conducted to confirm and further explore their results. For this reason, this research investigates the link between climate for innovation and climate for inclusion with qualitative methods. Therefore, the following research question is proposed:

**RQ7:** Do a climate for innovation and a climate for inclusion influence each other and, if so, why?

Table 3.1 and Table 3.2 present the hypotheses for study one and the research questions for study two.

Model	Hypothesis	Path	Direction
H1a	A climate for innovation has a direct positive effect on employee job satisfaction	Innovation $\rightarrow$ Job Satisfaction	+
H1b	A climate for innovation has a direct negative effect on employee job satisfaction	Innovation $\rightarrow$ Job Satisfaction	-
H2	A climate for inclusion has a direct positive effect on employee job satisfaction	Inclusion $\rightarrow$ Job Satisfaction	+
H1.1	Employee engagement has a positive mediation role in the relationship between climate for innovation and job satisfaction	Innovation $\rightarrow$ Engagement $\rightarrow$ Job Satisfaction	+
H1.2	Job stress has a negative mediation role in the relationship between climate for innovation and job satisfaction	Innovation $\rightarrow$ Stress $\rightarrow$ Job Satisfaction	-
H2.1	Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction	Inclusion $\rightarrow$ Engagement $\rightarrow$ Job Satisfaction	+
H2.2	Job stress has a negative mediation role in the relationship between climate for inclusion and job satisfaction	Inclusion $\rightarrow$ Stress $\rightarrow$ Job Satisfaction	-

Table 3.1: Summary of hypotheses proposed for this research

Source: Developed for this research

Table 3.2: Summary of research questions proposed for this research

Number	Research Question
RQ1	Does a climate for innovation influence job satisfaction and, if so, why?
RQ2	Does a climate for innovation influence employee engagement and, if so, why?
RQ3	Does a climate for innovation influence job stress and, if so, why?
RQ4	Does a climate for inclusion influence job satisfaction and, if so, why?
RQ5	Does a climate for inclusion influence employee engagement and, if so, why?
RQ6	Does a climate for inclusion influence job stress and, if so, why?
RQ7	Do a climate for innovation and a climate for inclusion influence each other and, if so, why?

Source: Developed for this research

### 3.4 Conclusion

This chapter developed the theoretical framework based on JD-R theory for exploring the impact of climate for innovation and climate for inclusion on job satisfaction. In addition, based on this theoretical framework, the research model and its hypotheses/research questions were explained in more detail. Following this, each hypothesis and detailed research question for both studies were developed. The objective of developing the hypotheses was to overview empirical testing of the structural relationships, and to examine predictions that may have significant theoretical and managerial implications. Therefore, each direct effect and mediated effect between climate for innovation/inclusion and job satisfaction in the research model was linked to a particular hypothesis and was explained and justified with literature and JD-R theory. The aim of the detailed research questions was to gain deeper insights into the reasons for the relationships between the main constructs.

The next chapter (Chapter 4) details the overall methodology proposed to address the overall research purpose. It provides deeper insights into the chosen mixed-method approach and describes and justifies the methodology for each study.

# **CHAPTER 4**

# METHODOLOGY

### 4.1 Introduction

This fourth chapter provides an overview of the methodology used to address the overall research purpose of this study. It gives deeper insights into the chosen mixed-method approach and the background to the case organisation. In addition, it describes and justifies the methodology for each study and the ethics for the overall research. Figure 4.1 outlines the chapter structure.



Figure 4.1: Outline of Chapter 4 Source: Developed for this research

### 4.2 Research Paradigm

The aim of this section is to justify the paradigm for this research. The understanding of philosophical questions within research clarifies the determination of which designs are suitable for certain types of research (Easterby-Smith, Thorpe, & Lowe, 2000). Every research project may be different, but all projects are guided by a paradigm that is "a set of beliefs and feelings about the world and how it should be understood and studied" (Denzin & Lincoln, 2011, p. 22.). The pragmatism paradigm was identified as the most appropriate for the current research given the nature and objectives of this research. As this research has developed a model to test relationships, but also seeks to understand these relationships, the pragmatist position is particularly appealing. Pragmatism specifically rejects the eitheror argument of the incompatibility thesis and instead argues that qualitative and quantitative approaches can be complementary (Hathcoat & Meixner, 2017). Pragmatism goes back to the work of Peicre, James, Mead and Dewey (Cherryholmes, 1992). There are many forms of this philosophy, but for many, pragmatism as a worldview emerges from actions, situations and consequences. Instead of concentrating on methods, researchers emphasise the research problem and use all available approaches to understand the problem (Rossman & Wilson, 2016). The pragmatism research philosophy can integrate more than one research approach and research strategies within the same study. Moreover, studies with pragmatism research paradigms can integrate the use of multiple research methods such as qualitative and quantitative research methods. Therefore, pragmatism forms an excellent philosophical basis for this project (Creswell, 2014; Creswell & Plano Clark, 2011; Patton, 1990; Tashakkori & Teddlie, 2010).

In general, each paradigm deals with three main assumptions (Guba & Lincoln, 1994), the nature and form of reality (ontology), the nature of the relationship between researcher and reality (epistemology), and the process of exploring reality (methodology) (Guba & Lincoln, 1994). Table 4.1 summarises the assumptions of this research in terms of ontology, epistemology and methodology. Pragmatic research means that the focus of research is less on the guiding idea of philosophy, than on the research questions and problems investigated (Bryman, 2007). The paradigms for the two studies in this research are therefore positivism (Study One: Quantitative Research) and constructivism (Study Two: Qualitative Research) (Greene & Caracelli, 1997). This fits well with the overarching paradigm of pragmatism, since the practicability of using multiple methods to explore the same issue requires the integration of different theoretical perspectives to interpret the data more meaningfully (Creswell, 2014; Tashakkori & Teddlie, 2010).

	Pragmatism		
Ontology	Singular and multiple realities		
Epistemology	Both objective and subjective points of view, depending on stage of research cycle		
Methodology	Both quantitative and qualitative researchers answer questions using best methods		
	Study One	Study Two	
	Positivism	Constructivism	
Ontology	Reality is single, tangible, and fragmentable	Reality is multiple, constructed, and holistic	
Epistemology	Knower and known are independent, a dualism	Knower and known are interactive, inseparable	
Methodology	Testing of hypothesis through quantitative methods	Researcher is a passionate participant and uses qualitative methods	

For the first study, a positivist paradigm was chosen as it reflects that natural and social sciences consist of a set of specific methods to determine and measure the details of a single reality (Riege, 2003). Positivist researchers use quantitative data and often use experiments, surveys, and statistics. Research looks for rigorous, accurate measurements, through "objective" research, and tests hypotheses by analysing numbers from measurements (Neuman, 2011). This ontology of reality means that the researcher is independent of the phenomena to be researched in order to eliminate the values and prejudices that they could bring to the process (Guba & Lincoln, 1994). Thus, positivism uses quantitative methods to test hypothetical deductive generalisations and attempts to explain causal relationships through objective facts (Carson, 2001).
For the second study, a constructivist paradigm was utilised. A constructivist view is often used for qualitative research methods (Neuman, 2011). Constructivism is interested in understanding values and ideologies beneath the surface of the results (Guba & Lincoln, 1994). Since the second study aims to understand how and why specific factors influence the relationships between the main constructs of this research, a constructivist approach was considered appropriate, as the analysis involves a certain subjectivity that can be addressed by constructivism (Riege, 2003).

# 4.3 Research Design

Research design, according to Creswell and Plano Clark (2011), is the action plan that links the underlying assumptions and frameworks to the methods and techniques used. Therefore, the research design is the conceptual structure that represents the plan for the process of collecting, measuring, and analysing data (Sekaran & Bougie, 2016). The research design is important because it provides the underlying structure for the integration of all components of the study and also ensures that the results of the research design involves a series of rational decisions that include: determining the purpose of the studies, whether they are descriptive (exploratory) or testing hypotheses (explanatory) research; type of investigation; determining the extent of researchers' interference; deciding the study setting; deciding data analysis (see section 4.6 and 4.7); identifying the time horizon, whether it is a cross-sectional or longitudinal study; and deciding the unit of analysis.

There is no single research design that exists in isolation (Saunders, Lewis, & Thornhill, 2019). To increase the validity of the results, a researcher can choose to use more than one design. In this study, both quantitative (study one) and qualitative (study two) data were collected. Therefore, this study used a mixed methods approach and included both explanatory (hypothesis testing) and exploratory research designs (see section 4.4). The explanatory design examines cause-and-effect relationships between the variables (Saunders et al., 2019). The overall purpose of an exploratory design, on the other hand, is to provide more information about the nature of the relationships (Sekaran & Bougie, 2016). In terms of the type of the investigation, both studies can be considered as correlative studies, as several factors which influence one another are associated with the outcome variable (Sekaran & Bougie, 2016). The main objective of study one is to gather more information about the relationships with interviews. The theoretical framework was tested with data which was collected with questionnaires (study one) and interviews (study two). Care has been taken to ensure that the disruption of the normal

workflow was as minimal as possible. Therefore, the researcher's impairment of the normal workflow at the workplace was very small. In combination with this, the study setting was a non-contrived field study which means that nothing was changed in the natural working environment of the employees, with negligible researcher interference. For both studies, the level of data aggregation was concentrated on individual employees. Both quantitative and qualitative analysis looked at the data collected from each individual and treated each employee's response as an individual data source. Finally, according to Zikmund (2003) research can be characterised by its time horizon: cross-sectional and longitudinal studies. In a cross-sectional study, data are collected at a single point in time (Zikmund, 2003). In contrast, longitudinal studies collect data over different time periods to answer research questions (Sekaran & Bougie, 2016). For both studies, a cross-sectional research type was chosen and is often the most common method of social research (Neuman, 2011). Due to the data available and the timelines for this research, it was not possible to undertake a longitudinal study.

# 4.4 Mixed Method Approach

This research adopts a mixed-methods design to address the overall purpose of the research. Due to the nature of the research questions, it was considered most appropriate to use a mixed method design. In the past years, the use of mixed-methods designs has been increasing (Creswell, 2014; Ivankova, Creswell, & Stick, 2006). The mixed-methods approach is defined as a procedure for collecting, analysing and combining or integrating both quantitative and qualitative data at some stage of the research process in a single study to better understand the research problem (Hanson, Creswell, Clark, Petska, & Creswell, 2005; Tashakkori & Teddlie, 2010). The justification for the use of both types of data within a study is based on the fact that neither quantitative nor qualitative methods alone are sufficient to capture overall trends and details of a situation. Both methods in combination allow a robust analysis and leverage the strengths of each one (Ivankova et al., 2006). The background of both methods is provided which gives an overview of the purpose, advantages and disadvantages of both research paradigms. Table 4.2 provides an overview of the primary differences of each approach.

Table 4.2: Overview of the differences of quantitative and qualitative research

Source: Lamnek (2010)

Question	Quantitative Research	Qualitative Research
	• To explain and predict	• To describe and explain
What is the purpose of the research?	• To confirm and validate	• To explore and interpret
of the research.	• To test theory	• To build theory
What are the	• Representative, large sample	• Informative, small sample
methods of data collection?	• Standardised instruments	• Observations, interviews
	• Numbers	• Words
How are the findings communicated?	• Statistics, aggregated data	Narratives, individual quotes
	• Formal voice, scientific style	• Personal style, literary style
	• Allows the researcher to measure and analyse data	• It enables more complex aspects of persons and their experiences
What are the advantages?	• Is more objective about the findings of the research	• Fewer restrictions or assumptions are placed on the data
	• Can be used to test hypotheses in experiments because of its ability to measure data using statistics	• The participants are able to provide data in their own words and in their own way
	• The context of the study or experiment is ignored	• It is more difficult to determine the validity and reliability of linguistic data
What are the disadvantages?	• Does not study things in a natural setting	• More subjectivity involved in analysing the data
	• A large sample of the population must be studied for more accurate results	• Time-consuming

It has been shown that mixed methods lead to a deeper understanding of the research question, but there are many different ways to combine the methods. There are approximately 40 mixed-methods research designs reported in the literature (Tashakkori & Teddlie, 2010). Ivankova et al. (2006), cited in Tashakkori and Teddlie, (2010) identified the six most commonly used designs, which include three simultaneous and three sequential designs. One of these designs, the mixed-method sequential explanatory design, involves collecting and analysing first quantitative and then qualitative data in two consecutive studies within a study. This particular mixed-method design is well described in the literature (Creswell, 2018; Hanson et al., 2005; Tashakkori & Teddlie, 2010) and has been used for both social and behavioural sciences research (Wiley, 1993).

The mixed-method sequential explanatory design consists of two separate studies: quantitative followed by qualitative (Ivankova et al., 2006), as shown in Figure 4.2. In this approach, a researcher firstly collects and analyses quantitative (numerical) data and then secondly collects and analyses qualitative (textual) data. This combination helps to explain

and provide a deeper understanding of the quantitative results obtained in the first study. The rationale for adopting this mixed approach is that constructs and measures are currently available for the areas of interest (such as climate of innovation, job satisfaction) and therefore the collection of quantitative data is possible to further understanding of the pathways and relationships between these constructs (undertaken in study one).

Therefore, study one conducts quantitative analysis to test hypotheses developed from the literature. A large number of individuals from the case organisation (PharmXO) were used for study one to explore the relationships explained in the main research model.



Figure 4.2: Sequential exploratory design Source: Tashakkori and Teddlie (2003, p. 213)

In the next stage (study two), the qualitative data and its analysis refine and explain these statistical results by further examining participants' views (Hanson et al., 2005; Rossman & Wilson, 2016; Tashakkori & Teddlie, 2010). Therefore, study two involved the use of qualitative methods to gain a more detailed understanding about the relationships which were found in study one. A range of individuals from PharmXO-I department were interviewed to gain a deeper understanding of the connection between climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction. Therefore, study two involved semi-structured interviews based on the results of study one. The strengths and weaknesses of this mixed-methods approach have been already discussed in the literature (Hanson et al., 2005; Ivankova et al., 2006; Tashakkori & Teddlie, 2010). Benefits include simplicity and the ability to examine quantitative results in more detail. This design may be particularly useful when unexpected results are obtained from a quantitative study (Morse, 1991). The limitations of this design include a lengthy implementation time and the need for significant resources to collect and analyse both types of data.

In this section the chosen method approach was explained and justified, the following section explains the background to the case organisation

# 4.5 Case Organisational Background

The research was conducted in a large international company operating in the pharmaceutical industry, referred to as "PharmXO" to meet confidentiality requirements of the organisation. PharmXO plays a pioneering role in health care as an innovator of products and services for the early detection, prevention, diagnosis and treatment of diseases. PharmXO contributes on a broad range of fronts to improving people's health and quality of life. PharmXO is present in over 100 countries throughout the world and has around 90,000 employees. The company has been a pioneer in health care for nearly 120 years and is now helping millions of patients around the world.

# 4.6 Methodology: Study One

#### 4.6.1 Participants

All employees of PharmXO are invited to participate in the Global Employee Opinion Survey (GEOS) every three years. For this study, the most recent survey responses from 2017 were used. In 2017, 86,000 employees received the invitation to participate and 68,549 responded. Over half of the participants were male (52.7%, 36,015), and there were 32,325 (47.3%) females. The majority of participants were aged between 35 and 44 years (34%, 23,271), with those aged 25–34 years old representing 27.5% (18,778), and 45–54 years old representing 25.1% (17,164). Respondents were working in Europe (48.2%,), North America (26.7%) and Asia–Pacific (17.8%).

#### 4.6.2 Survey

In general, a survey is used when the researcher intends to describe the characteristics of groups or to measure the relationship between variables (Akyol & Akehurst, 2003). The main intention of the GEOS is to gather feedback from PharmXO employees on a regular basis to improve the business environment, with the goal to reach higher employee engagement and satisfaction. The full survey was developed for internal use and is repeated every 2–3 years. The GEOS consists of a questionnaire with 60 items that have been designed to measure constructs such as employee engagement and job satisfaction.

In general, there are different opportunities to conduct a survey such as face-to-face, by telephone, via email, over the internet or by drop-off questionnaires (Zikmund, 2003). In this case a corporate online survey was used as it was the most appropriate administration method due to both efficiency and cost effectiveness (Iacobucci & Churchill, 2010). It also enabled the company to cover wide geographic areas around the world. As soon as the survey was released, each employee received an invitation email. In order to increase the

response rate, all employees received two reminders sent at fortnightly intervals. Additionally, a marketing campaign for the survey was released through all communication channels within the company to increase employees' awareness.

## 4.6.3 Measures

This section addresses the measures for the five main variables in the research model (see Chapter 3). This research has two independent variables (climate for innovation and climate for inclusion), two mediating variables (employee engagement and job stress) and one dependent variable (job satisfaction). The following sections present a brief introduction to each measurement for all variables. The compete survey measures are listed in Appendix A.

# 4.6.3.1 Independent Variables

# Climate for Innovation

This scale consists of four items which come from the GEOS conducted in PharmXO. Each item was rated on a Likert scale from 1 (strongly disagree) to 6 (strongly agree). The items include statements such as, "*I can try new things even if they lead to occasional mistakes*" and "*Our work environment supports calculated risks in order to be innovative*."

# Climate for Inclusion

This scale consists of five items which come from the GEOS conducted in PharmXO. Each item was rated on a Likert scale from 1 (strongly disagree) to 6 (strongly agree). The items include statements such as, "*My co-workers respect my thoughts and feelings*" and "*We have a work environment that is open and accepts individual differences*."

# 4.6.3.2 Mediator Variables

# **Employee Engagement**

This scale consists of six items which come from the GEOS conducted in PharmXO. Each item was rated on a Likert scale from 1 (strongly disagree) to 6 (strongly agree). The items include statements such as, "*This organisation inspires me to do my best work*" and "*This organisation motivates me to contribute more than is normally required to complete my work*."

# Job Stress

This scale consists of two items which come from the GEOS conducted in PharmXO. Each item was rated on a Likert scale from 1 (strongly agree) to 6 (strongly disagree). The items have the following two statements: "*The intensity of my work is manageable over the longer term*" and "*My work-related stress is manageable for me*."

# 4.6.3.3 Dependent Variables

# Job Satisfaction

This scale consists of four items which come from the GEOS conducted in PharmXO. Each item was rated on a Likert scale from 1 (strongly disagree) to 6 (strongly agree). The items include statements such as, "*I get a sense of accomplishment from my work*" and "*I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments*."

# 4.6.4 Exploratory Factor Analysis

Since the construct scales were developed by the researcher, as a first step an exploratory factor analysis (EFA) was utilised to control the dimensionality of the data with the goal to produce a set of items that correctly measure a single underlying construct (Hair, Black, Babin, & Anderson, 2009). The EFA had two purposes: scale item purification and reliability checking (Hair et al., 2009). The EFA examines the underlying dimensions which, if properly interpreted, can be described in a much smaller number of items than the original individual variables (Hair et al., 2009). An EFA was conducted for the following scales: innovation (4 items), inclusion (5 items), engagement (6 items), job stress (2 items) and job satisfaction (7 items).

# 4.6.5 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a multivariate statistical method used to check how well the measured variables represent the number of constructs. In CFA, researchers can specify how many factors are required in the data and which measurement variable is related to which latent variable (Hair et al., 2009). Therefore, CFA is a tool for confirming or rejecting the measurement scale. The sections below briefly show which statistics and model fit indices were used to evaluate each measurement scale of this research.

A fundamental approach to evaluate each measurement scale within a CFA is the composite reliability and variance extracted measures for each construct (Hair et al., 2009). Reliability represents the degree to which design indicators specify the common latent (unobserved) construct and is evaluated using standardised regression weight (SRW) statistics. The result indicates the degree of influence that each standardised observed variable has on the

standardised unobserved construct (Hair et al., 2009). Furthermore, the squared multiple correlation (SMC) is calculated for each observed variable. This result corresponds to the proportion of declared variance and gives an indication of how much confidence can be placed in the results of the regression and correlation prediction (Kline, 2016). If the composite safety of the constructs (SRW) is greater than 0.50 and the average variance (SMC) is greater than 30% of the SRW, then the measures are in an acceptable range (Hair et al., 2009).

In order to be able to confirm measurement scales, the model fit indices are also utilised during evaluation. The most common indices are the absolute fit indices, such as chisquare, goodness of fit index, root mean residual covariance (RMR) or standardised root mean residual covariance (SRMR). Absolute fit indices are derived from the fit of obtained and implied covariance matrices and maximum likelihood minimisation function (Hair et al., 2009). Therefore, they do not have a base for comparison with alternative models. The chi-square statistic can be seen as the original fit index for structural models and is the basis for most other fit indices. However, chi-square is recognised by most researchers as not always being useful because it is affected by sample size, model size and by distribution of variables. For example, larger sample sizes produce larger chi-squares that are significant even with small discrepancies between implied and obtained covariance matrices (Hu & Bentler, 1998). These are reasons why the relative chi-square or the normed chi-square (CMIN/df) is often used as the main model fit index. The chi-square is divided by the degrees of freedom to obtain a chi-square value per degree of freedom. When deciding on the model, there are conflicting opinions on the acceptable range. This study adopts the range proposed by Arbuckle (2007), where the ratio should be between 1.0 and 5.0.

To determine the adequacy of the measurement model, several adjustment indices are utilised instead of relying on a single solution (Hair et al., 2009). To prevent distortion due to large sample sizes, incremental fit indices can be utilised in addition to the chi-square. Since estimates and tests are based on large samples in SEM, incremental adjustment indices, such as TLI and comparative fit index (CFI) have proven to be largely unbiased compared to absolute adjustment indices (Hu & Bentler, 1998). In this research the CFI was used as the incremental fit index. CFI is derived from the chi-square statistics and measures the relative reduction of the lack of fit estimated by the chi-square of a target model compared to an independent model. The CFI has a range of 0–1 and values greater than 0.90 are generally considered satisfactory fit of the model (Hair et al., 2009).

Hu and Bentler (1998) empirically examined various cut-offs and combinations of different fit indices to minimise Type I and Type II errors under various conditions. In case of large sample sizes, Hu and Bentler (1998) recommend using the maximum-likelihood-based root

mean square error of approximation (RMSEA) and SRMR absolute fit measures. MacCallum and Austin (2000) also recommend using the RMSEA fit index due to the availability of the confidence interval, which provides important information about the accuracy of the fitting estimate. This study used both RMSEA and SRMR as the model fit indices. RMSEA is an index based on non-centrality parameters. It is used to correct the tendency of chi-square statistics to reject a particular model with a large sample, and values less than 0.08 are considered acceptable (Hair et al., 2009). The SRMR is useful for comparing fit across models. Lower SRMR values represent better fit. A rule of thumb is that an SRMR over 0.07 suggests a problem with fit (Hair et al., 2009). The individual additional model fit indices and their recommended acceptable values used in this research are explained in more detail and summarised in Table 4.3.

Table 4.3: Summary of model fit indices and cut-offs for large sample sizes

Name	Abbreviation	Type of Fit	Cut-off
Normed chi-square	CMIN/df	Absolute Fit	< 5
Comparative fit index	CFI	Incremental Fit	>.90
The root mean square error of approximation	RMSEA	Absolute Fit	<.08
Standardised root mean residual covariance	SRMR	Absolute Fit	< .07

Source: Hair et al. (2009), Blunch (2008)

#### 4.6.6 Common Method Variance

It has been discussed what biased effects can result in estimates of the relationships between two or more constructs when measuring with the same method (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). One problem when measuring different constructs with the same method is the danger that at least part of the observed covariation between them is due to the fact that the same measurement method was used. This concern about the bias of the method is potentially important, as the situations in which it is a problem are quite common. This is highlighted in the work of Bodner (2006), who reviewed the literature in six areas of psychology and found that most studies (76%) concerned only a single measurement method, and of the studies that concerned human subjects and adequately explained the measurement methods, 33% used self-report questionnaires as the only measurement method. Similarly, Woszczynski and Whitman (2004) reviewed studies published in the journals of top management information systems from 1996 to 2000 and found that 27% of the 428 articles in this literature used self-report as the predominant method of data collection during this period. As the current research study has one single measurement method, common method variance must be considered.

There are several different statistical remedies available that can be used to control for common method bias. This first technique (Harman, 1960) uses EFA where all variables are loaded onto a single factor and constrained so that there is no rotation (Podsakoff et al., 2003). This is called Harman's single-factor test and is one of the most widely used techniques that has been used by researchers to address the issue of common method variance (Greene & Organ, 1973; Schriesheim, Kinicki, & Schriesheim, 1979). As a basic assumption of this technique, it can be assumed that if there is a significant amount of common method variance, either a single factor emerges from the factor analysis or a general factor constitutes the majority of the covariance among the measures (Podsakoff et al., 2012). The cut-off value for existing common method variance is higher than 50% for variance.

The second available technique is called Common Latent Factor (CLF) and introduces a new latent variable in such a way that all manifest variables are related to it, those paths are constrained to be equal and the variance of the common factor is constrained to be 1 (Podsakoff et al., 2003). This is similar to the Harman single-factor technique where all manifest variables are related to a single factor; however, the research model's latent factors and their relationships are kept in this analysis. The common variance is estimated as the square of the common factor of each path before standardisation (Podsakoff et al., 2003). This technique allows for measurement error, focuses on the measures themselves and does not require the researcher to identify and measure the specific factor responsible for common method effects (Podsakoff et al., 2003). However, it assumes no interaction with the constructs and does not allow the researcher to insert any known or suspected cause(s) of bias. Therefore, the method factor may actually represent multiple biases, similar to the Harman single-factor technique.

# 4.6.7 Structural Equation Modelling

The final step was testing the path model with SEM. SEM is a multivariate statistical analysis technique used to analyse structural relationships. This technique is the combination of factor analysis and multiple regression analysis and serves to analyse the structural relationship between measured variables and latent constructs (Hair et al., 2009). This method is often used because it estimates multiple and interrelated dependencies in a single analysis.

# 4.7 Methodology: Study Two

Study two involved an exploratory qualitative study design that utilised semi-structured indepth interviews with employees of PharmXO. This section provides an overview of the research methodology for study two, including the sampling procedure, participant demographics, and interview guide and protocol.

## 4.7.1 Sampling

In this second qualitative study, a purposeful sampling technique was used based on a number of inclusion criteria. Purposeful sampling is a technique widely used in qualitative research to identify and select information-rich cases for the most effective use of limited resources (Patton, 2002). This includes identifying and selecting individuals or groups of individuals who are particularly well informed about or have experienced the phenomenon of interest (Creswell & Plano Clark, 2011). Although there are several different purposeful sampling strategies available (Palinkas et al., 2015), for this research the strategy criterion-i was chosen to identify and select participants who met predetermined criteria of importance (Palinkas et al., 2015; Patton, 2002). Criterion-i sampling by Palinkas et al. (2015) has most frequently been used in mixed-methods research where the qualitative method was secondary to the quantitative method. The objective of criterion-i sampling is to identify and select cases that meet some predetermined criterion/criteria of importance. Therefore, criterion-i sampling as a purposeful sampling strategy can be used to select potential participants. The participants are selected on criteria based on the assumption that they possess knowledge and experience with the phenomenon of interest and thus will be able to provide information that is both detailed and generalisable. For this research, three criteria were considered to select the most appropriate participants: (1) setting, (2) timing and (3) people. The setting relates to identifying a site where appropriate participants can be located. Timing is concerned with the timing within which the sample was selected and the research carried out. The third dimension of sampling concerns participants' roles and experiences.

#### 4.7.1.1 Setting and Timing: Division PharmXO-I

In this case the setting is a specific division within PharmXO which fits with the overall research topic. The name of this division was PharmXO-Innovation (PharmXO-I). It was chosen as it was appropriate for investigating the research problem. PharmXO-I focuses on innovation within the global intercultural organisational structure and therefore contains the necessary properties to explore the research topic. In regard to timing, the division PharmXO-I was newly formed and launched to reinvent how PharmXO will serve

patients in the future. PharmXO-I is an important part of this evolution and will develop new ways to deliver current drugs as well as the next generation of medicines. Therefore, the main purpose of this global division is to shape and accelerate innovative technology and implement a culture of innovation for the future of PharmXO. This division is responsible for all technology processes for PharmXO globally, and therefore has employees located all over the world who work together and create a diverse working environment. These innovative and diverse characteristics led to the selection of this division as the focus of the second qualitative research study.

# 4.7.1.2 Participants

For this study, employees within PharmXO-I who work in a diverse and innovative environment were selected. As mentioned above, purposeful sampling was chosen to select the appropriate division for the second study. Therefore, the third dimension aimed to find participants within PharmXO-I with a range of different perspectives. For this reason, care was taken to ensure that the participants had at least five years of management experience at the global management level within the organisation and did not all work at the same location. This ensured that the interviewees had their own experience in leading or being involved in a variety of innovative projects and thus guaranteed expert status with different cultural backgrounds.

Based on these criteria, 17 people were invited and a total of 13 accepted to be interviewed for the second research study. This resulted in three groups of participants for the interviews: two senior managers, four middle managers and seven engineers. All participants have worked for the pharmaceutical company for more than five years at locations in Switzerland, Germany, France and the United States of America. These groups provide a range of different perspectives to explore the research topic. In addition, there was a gender balance in those accepting which also added to participants' diversity.

Table 4.4 displays the attributes of the participants who were interviewed. As per ethics approval, participants' names have been replaced with interviewee numbers to protect their anonymity. Table 4.4 also displays participants' gender, level in the organisation and work experience.

Table 4.4: Interview participant list

Participant	Gender	Level in organisation	Work experience
1	Female	Engineer	+5
2	Female	Middle Management	+5
3	Female	Engineer	+5
4	Male	Engineer	+5
5	Male	Middle Management	+15
6	Female	Engineer	+10
7	Male	Middle Management	+10
8	Female	Senior Management	+15
9	Female	Engineer	+10
10	Female	Senior Management	+15
11	Male	Engineer	+5
12	Male	Middle Management	+10
13	Male	Engineer	+5

Note. Each of the participants were assigned a random number

#### 4.7.2 Semi-Structured Interviews

For this second research study, semi-structured interviews were used to explore the results of study one. The semi-structured interview method was considered the most appropriate instrument for gaining a better understanding of the relationships between the constructs found in study one. The purpose of the interviews was to gain additional information to support the overall research objective. Semi-structured interviews have a set of key questions but allow room for new ideas to be explored during the interview which could raise unexpected but important information (Cavana, Delahaye, & Sekaran, 2001). In addition, by choosing semi-structured interviews, the participants have the opportunity to reflect on questions and provide their own interpretation of the issue of interest. In the interview a supportive neutral tone was used to minimise any socially desirable answers from respondents (Powell & Baker, 2014). Semi-structured interviews are defined by Kvale and Brinkmann (2009) as *"a construction site of knowledge"* in which two people discuss themes of common interest.

#### 4.7.2.1 Interview Protocol

The interview protocol was developed to give the interview process structure and direction. The interview protocol consisted of 11 questions and is attached in Appendix B1. The protocol provided guidance for the researcher, including opening instructions, key

interview questions and space for notes or comments. The interview questions were developed from the literature review and the research frameworks to further investigate the findings of study one (see section 6.2). The interview guide thus provided a structure, but care was taken to ensure that the interview had room to adapt to any new topics raised or to ask follow-up questions. As suggested by Lindlof and Taylor (2011), to develop a rapport the first question was a general introductory question with a focus on describing the participant's roles and responsibilities in PharmXO-I. The main purpose of the interview questions was to investigate the impact of climate for innovation and climate for inclusion on employee engagement, job stress and employee satisfaction. The interview was therefore broken into two parts, focusing on innovation and then inclusion, to ensure that each was investigated separately.

The interview structure was piloted to allow the researcher to check the clarity of questions, the structure of the interview and to practice interviewing skills. The first stage of piloting involved a simulated interview with a researcher familiar with the topic, and this interview was observed by another researcher. Based on feedback from the interviewee and the observer, some questions were refined and the interview protocol was restructured. Then, three pilot interviews were performed with representatives from PharmXO who did not meet the inclusion criteria of the sample group. Following this second round of testing the protocol was finalised.

#### 4.7.2.2 Procedure

In total, 13 semi-structured interviews were conducted and audio recorded. The contact details of the selected persons could be taken from the company's internal personnel database, which made it possible to make contact by e-mail. The email included a brief explanation of the subject of the investigation and the participant information sheet (see Appendix B2). Interviews were conducted at a suitable location within PharmXO and at a suitable time for the participants, with most taking place directly at their workplace. At the beginning, clarifying questions regarding the project information sheet were asked. In addition, the participants were assured of confidentiality prior to the interviews and a consent form was signed by all participants (see Appendix B3). On average, the interviews lasted for 40 minutes.

# 4.7.3 Thematic Analysis

A qualitative approach was chosen for the second research study to explore, explain and discuss the results of study one. Thematic analysis was utilised following Braun and Clarke (2006) to identify themes related to the research questions and the theories tested. Data analysis in general is described by Hatch (2002) as "*a systematic search for meaning*" and qualitative approaches are incredibly diverse, complex and nuanced (Daymon & Holloway, 2011). The thematic analysis approach used for the results is considered a foundational method for qualitative analysis (Braun & Clarke, 2006).

Thematic analysis was chosen because it was appropriate for analysing the amount of data generated by the semi-structured interviews. One of the benefits of thematic analysis is its flexibility (Braun & Clarke, 2006); it can be applied across different theoretical approaches and is a useful research tool to work with any rich, detailed and complex account of data (Bryman, 2015). The thematic method provides the ability to identify and analyse themes within the data. Thematic analysis reports experiences, meanings and the reality of participants which was essential for this second research study. In addition, the high flexibility provides a range of different possible ways to conduct thematic analyses, but it is important to be consistent within the analysis (Braun & Clarke, 2006). It is also claimed that thematic analysis is an appropriate method for researchers who are early in a qualitative research career as it does not require detailed theoretical or technological knowledge and offers an accessible, easy and quick way to learn analysis (Braun & Clarke, 2006). In sum, thematic analysis was chosen as an appropriate method because it is a flexible and efficient approach that can handle a large body of data to generate unanticipated themes and insights related to the research questions. Once the analysis method was chosen, specific issues need to be identified in order to ensure the consistency emphasised by Braun and Clarke (2006).

Following the guidelines set out by Braun and Clarke (2006), first, it is important to decide what counts as a theme (Creswell, 2018). There is no specific definition of a theme in terms of context and of appearance across the entire dataset (Creswell, 2018). It would be certainly good if themes had a number of instances across the dataset, but it is not necessarily a sign that these themes are more crucial (Braun & Clarke, 2006). For this research, it was decided that themes did not need to occur a set number of times (quantifiable measures), but rather they needed to capture something considered important in relation to the overall research question. Nevertheless, each theme was tracked with regards to its prevalence in the overall transcripts.

The next step was to decide whether an inductive or a theoretical thematic analysis should be used (Braun & Clarke, 2006; Patton, 2002). Both ways could potentially lead to similar outcomes, but it was decided to use the theoretical approach. Theoretical thematic analysis focuses on an analytic objective in a specific area of interest related to theory (Boyatzis, 1998). This form of thematic analysis tends to provide less rich description of the data overall and a more detailed analysis of specific interest (Braun & Clarke, 2006). This generally means that the analysis focuses on theory, and in this research case the results from study one also informed the analysis. The interview questions and the thematic analysis codes related to specific research questions which focused on gaining further insight into previous results.

Based on the guiding literature of Braun and Clarke (2006), the next decision to be made concerned the level at which the themes were to be identified. There are two options: at a semantic or at a latent level (Boyatzis, 1998). For this research, the semantic approach was chosen because it was essential to identify themes within the explicit or surface meaning of the data and not anything beyond what participants expressed. The data were then organised and summarised to show themes which can be interpreted in the discussion.

After the overall framework for the thematic analysis was determined and consideration was given to developing the themes, the specific process of analysis was considered. Regardless of the specific approach taken, an analysis process includes five steps (Braun & Clarke, 2006): (1) listening, transcribing and reading; (2) coding; (3) theming; (4) reviewing themes; and (5) naming themes. Each of these steps as they were applied to this research are explained in more detail in the next sections.

### 4.7.3.1 Listening, Transcribing and Reading

As the first step, all audio-recorded interviews with an average length of 40 mins were transcribed and reviewed by the interviewer to check the accuracy of the transcription. The interviews were conducted in English, but for most participants English was a second language and for this reason the quotes may at times be grammatically incorrect but have not been edited so that the voice of participants can be heard. The transcribing and listening stage started after the first interview was completed and continued through the data collection stage. The computer software NVivo allows the researcher to efficiently manage qualitative data and was therefore used for all further analysis steps. NVivo allows the import of transcripts, which can then be coded, themed and analysed. The transcribed interviews were imported into NVivo Version 12 and were then read to gain a first impression.

# 4.7.3.2 Coding

The next step of data analysis was coding. Coding involves "linking, breaking up and disaggregating the data so that once coded, the data looks different, and is seen and heard through the category rather than the research event" (Morse & Richards, 2002). In the context of this research, coding and categorising was vital to ensure that codes and themes were appropriately attributed. NVivo was used for coding all individual interview transcripts by creating different themes. This step involved producing codes which identify semantic features of the data. This helps to initially organise the data into meaningful groups (Tuckett, 2005).

### 4.7.3.3 Theming

In the next step of thematic analysis, meaningful groups are developed further to create themes. This step is re-focusing the analysis at the broader level and sorts all defined codes into potential themes. Essentially, themes are analysed and combined to form an overarching theme. It was helpful to use visual representations of the themes to support the analysis and to see relationships between codes, themes and overarching themes.

#### 4.7.3.4 Reviewing themes

After all interviews were individually coded and organised in different themes, the themes were reviewed and reflected upon in relation to the entire dataset again. During this step it became evident that some themes were not really themes because they had insufficient support in terms of the overall transcripts. Some themes were combined and others were split. The end of this step provided a good understanding of the overall themes and how they fit together.

#### 4.7.3.5 Organising Final Themes

The last step was reviewing the final thematic map again to define final labels for the themes. For each individual theme it was important to write a detailed analysis which identified the relationship to the overall data and the research question. In addition, for each theme individual quotes were chosen that described the content of the theme and illustrated how the participants pictured their meanings and experiences.

After all steps were performed as described above, clearly defined themes were found which gave insights into the found relationships in study one. These themes were then visualised, explained and discussed in the results and discussion sections of chapter 6.

## 4.7.4 Qualitative Rigour

In order to ensure quality and rigour of the research, a systematic approach was implemented as outlined by Thomas and Magilvy (2011). Four components related to qualitative rigour are usually considered in order to demonstrate high-quality and trustworthy qualitative research: credibility, transferability, dependability and confirmability.

Credibility in qualitative research is defined as questions of congruence between the results of a qualitative study and reality (Shenton, 2004). The credibility of qualitative research depends on how well the phenomena have been captured, understood and reported. In this study, credibility was ensured through meetings with research supervisors to clarify the meaning and interpretation of the data. This is important because any research may depend to some extent on the background, qualification and experience of the investigator (Patton, 1990). To address this limitation, regular follow-up meetings were held between the researcher and the supervisory team. During these sessions, the transcripts and preliminary results were discussed to ensure that the interpretation of the data was appropriate. In addition, pilot interviews were conducted prior to conducting the interviews. Research supervisors who are familiar with the specific data collection technique used this opportunity to give feedback on interview style and techniques, such as prompting and transitions. The extensive experience of the researcher's supervisors in qualitative data analysis provided valuable feedback and alternative approaches to performing data analysis.

Transferability has been interpreted as the ability of qualitative research results to be used in other situations (Shenton, 2004). In order to improve the transferability of the results of the study to future research projects, a number of provisions have been made and methods were used which are usually implemented in this area of research. In particular, detailed information on the context, limits, timing and procedures of the method has been provided to ensure that future researchers are able to reproduce the study in a different context. In order to better interpret the context of this research, detailed information on the chosen division was provided (see Section 4.7.1.1). A further strategy to ensure transferability involved choosing a diverse range of participants (Thomas & Magilvy, 2011).

Similar to transferability, dependability occurs when another researcher can replicate the research details for future studies (Thomas & Magilvy, 2011). This is achieved through a detailed participant and methodological part that reflects the purpose of the study. This includes detailed information about the selection of participants, the type of data collection, the duration of data collection, and the analysis and interpretation of the data. This second research study characterised all important information from data collection towards the discussed results to increase dependability.

Confirmability is defined as the steps taken to ensure that the study results reflect the participants' experiences and reduce the preconceived biases introduced by the research

team (Shenton, 2004). It can be assumed that confirmability is achieved if credibility, transferability and consistency are addressed (Miles, Huberman, & Saldaña, 2014; Thomas & Magilvy, 2011).

# 4.8 Ethics

Ethical guidelines refer to what behaviours should be considered in certain circumstances. These guidelines should be adhered to at all stages of this research design process. In general, these guidelines address issues related to respondents' rights and the researcher's responsibility (Zikmund, 2003). Care was taken in the course of this study to ensure that appropriate ethical standards were adhered to. Above all, this includes respect for the participants and ethical use of data.

# 4.8.1 Study One

The quantitative study one received approval (HREC: E18091) from the Human Research Ethics Committee of the University of the Sunshine Coast. All ethical guidelines were observed and followed throughout study one of this research. The principle of informed consent has been implemented and the purpose of the survey was communicated to all participants who participated in the GEOS in PharmXO. Respondents were also assured that the survey was confidential and anonymous, and participation was voluntary. With respect to the use of the data, the researcher respected the purpose of the research, maintained objectivity, did not misrepresent the results of the survey or disclose research conclusions, and also protected the rights of participants and sponsors (Zikmund, 2003). The actual data collection methods and results of the data analysis have been reported honestly and correctly. The results and methods have been published according to the standard criteria for a dissertation. All data collected by PharmXO has been protected against unauthorised access. The rights of all respondents were protected by avoiding the collection of data such as names or working departments that could identify individuals.

# 4.8.2 Study Two

The quantitative study two also received approval (HREC: S181207) from the Human Research Ethics Committee of the University of the Sunshine Coast. All ethical guidelines were observed and followed throughout study two of this research. All participants were invited via email (see Appendix B2). The researcher conducted the interviews within the work environment, ensuring that confidentiality was maintained. The time frame for each interview was not more than one hour. The research project information sheet was attached to the email for volunteer participants. Consent was gained by participants signing the consent form included in this document and returning it to the

researcher prior to the interview, after any queries the participant had were answered. The semi-structured interview questions used are provided in Appendix B1. The data were stored on a secured server, in an account that was password-protected and accessible only by the researcher. As interviews were conducted in/from Switzerland, the recently introduced European Union General Data Protection Regulation was carefully observed and complied with. In general, all data which were gathered throughout study two were kept confidential at all times and only the research team and transcriber had access to the recording and the transcript. The collected data were transcribed by an Australian transcription company that has a confidentiality agreement with all transcribers working for them. The audio recording was destroyed at the end of the research project. No published findings will reveal the identity of any participant. Any data collected as a part of this project will be stored securely as per the University of the Sunshine Coast's Research Data Management policy.

# 4.9 Conclusion

The purpose of this chapter was to describe the overall methodology used to address the overall research purpose. It gave deeper insights into the chosen mixed-method approach. A brief background of both methods was presented, providing an overview of the purpose, advantages and disadvantages of both research paradigms. This further showed that a mixed-method approach can lead to a better understanding of the research question. For this research, the mixed-method sequential explanatory method was chosen; this involved collecting and analysing first quantitative and then qualitative data in two consecutive studies within a study. In addition to the description of this method, the strengths and weaknesses of this mixed-methods approach were discussed. Further, the background to the case division, the main methods of both studies and the ethics for each research study were described.

The next chapters (Chapters 5 and 6) present and discuss the results of study one and study two.

# **CHAPTER 5**

# STUDY ONE

# 5.1 Introduction

This fifth chapter presents the quantitative research study one and the associated results in detail. The results are shown and briefly discussed with possible limitations. Figure 5.1 illustrates the chapter structure.



Figure 5.1: Outline of Chapter 5 Source: Developed for this research

# 5.2 Study One: Hypotheses

The literature research on climate for innovation and climate for inclusion in connection with job satisfaction showed that there are many research gaps that still exist (see Chapters 2 and 3). For this reason, the following hypotheses were developed (see Chapter 3) and were tested in this first research study.

## Hypotheses for Study One

## **Direct Effects**

**H1a:** A climate for innovation has a direct positive effect on employee job satisfaction.

**H1b:** A climate for innovation has a direct negative effect on employee job satisfaction.

**H2:** A climate for inclusion has a direct positive effect on employee job satisfaction.

## **Mediated Effects**

**H1.1:** Employee engagement has a positive mediation role in the relationship between climate for innovation and job satisfaction.

**H1.2:** Job stress has a negative mediation role in the relationship between climate for innovation and job satisfaction.

**H2.1:** Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction.

**H2.2:** Job stress has a negative mediation role in the relationship between climate for inclusion and job satisfaction.

# 5.3 Study One: Results

# 5.3.1 Missing Data

The data must be cleaned to avoid potential problems during the chosen analyses and to achieve maximum accuracy (Hair et al., 2009). Therefore, prior to analysis, the data were cleaned and tested for how much missing data (8925, 11,5%) appeared in the GEOS database. From 77,474 returned questionnaires, 68,549 (88.5%) had no missing data.

First, the missing data were tested to determine whether they were completely at random. Little's MCAR test was conducted and showed a chi-square = 33219.51 (p = <.001). The p-value of less than 0.05 indicated that the missing data were not MCAR and could be either missing at random or non-missing at random (Little, 1988). For this reason and to avoid potential non-response bias, further investigations of the data were performed. The percentage of missing data for each question showed that most items had similar rates from 0.4% to 1%. Furthermore, all control variables (years of service, age, gender) were tested and showed very similar missing data rates. This revealed that the missing data can be considered at random and, because of the big sample size, the missing data were handled with listwise deletion (Roth, 1994).

## 5.3.2 Demographics

As shown in section 4.4.1, 68,549 respondents had complete answers for the 2017 GEOS survey. Over half of the participants were male (36,015, 52.7%) and 32,325 (47.3%) were female. The majority of participants were between 35 and 44 years (34%, 23'271), 25 and 34 years (27.5%, 18,778), and 45 and 54 years (25.1%, 17,164), with most of the participants working in Europe (48.2%), North America (26.7%) and Asia–Pacific (17.8%). Over 69.5% (47,504) of participants had worked for more than 3 years for PharmXO (69.5%) as an employee without any supervisory role (76%, 51,966).

# 5.3.3 Reducing Sample Size

After analysing the EFA and CFA with the full sample size of 68,549 (see Appendix A), it was decided to reduce the sample size to 400. This is the maximal sample size recommended by Hair et al. (2009) before the SEM analysis in AMOS becomes too sensitive. The reason for this step was that the larger sample inflated the results and made every path significant with very small effect sizes. Additionally, the model fit indices became very sensitive with the larger sample and it was difficult to find a good model fit. The smaller sample size yields more usable results. Further, it leads to a good comparison between two SEM results with different samples sizes but using the same variables.

The 400-sample size was generated by random sampling with SPSS. This method is recommended by Hair et al. (2009) to generate randomised samples. The demographics showed the same distributions (see 5.3.4) within the control variables as the large sample size. The next sections present the results of the reduced sample size (N = 400). The results of the full sample are presented in Appendix A for comparison.

#### 5.3.4 Descriptive Statistics

Before SEM can be conducted, the scales and items must be investigated for normality and outliers to avoid any biases or errors from sampling. As a first step, a Kolmogorov-Smirnov Test was conducted and showed a significant *p*-value for all of the items. However, this test is very sensitive to large sample sizes and can be significant even with small deviations to normality (Field, 2009). Therefore, the skewness and kurtosis were used as indicators for normality. The indices for acceptable limits were  $\pm 2$  for both kurtosis and skewness (Field, 2009; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2008). There were no major breaches observed for the aggregated variables and items (see Table 5.1). Some items exceeded the limits, indicating that the items were not fully normally distributed. In general, it can be said that most items had a negative skew. Therefore, the answers are more on the positive direction towards 4, which means "agree". It can also be noted that the missing neutral point on a 6-point scale can force more skewness (Leung, 2011). Hair et al. (2009) state that large sample sizes (>200) are sensitive to deviations from normality and therefore no further corrections had to be implemented.

		Range				Kurtosis (SE)	
variable label	M (SD) -	Min			Skewness (SE)		
Innovation	4.59 (0.90)	2.00	6.00	[4.51, 4.69]	-0.568 (0.122)	-0.084 (0.243)	
Inclusion	5.00 (0.85)	1.00	6.00	[4.92, 5.10]	-1.344 (0.122)	2.494 (0.243)	
Engagement	4.84 (0.92)	1.00	6.00	[4.75, 4.94]	-0.789 (0.122)	0.294 (0.243)	
Job Stress	2.46 (1.03)	1.00	6.00	[2.35, 2.56]	0.956 (0.122)	0.995 (0.243)	
Job Satisfaction	4.66 (0.84)	1.00	6.00	[4.60, 4.76]	-0.913 (0.122)	0.788 (0.243)	

Table 5.1: Descriptive statistics for final variables

*Note*. M = Mean, SD = standard deviation, CI = Confidence Interval

In the next step outliers were investigated. For this research serious outliers were not possible because each item and control variable was collected using a 6-point Likert scale. However, each main variable showed similar means and the same maximum and minimum

ranges (see Table 5.1). The highest mean had climate for inclusion (M = 5.00) followed by job satisfaction (M = 4.89) and employee engagement (M = 4.84). The lowest mean had job stress (M = 2.46). Each main variable had a minimum value of 1.00 and a maximum value of 6.00, except innovation with the lowest variable of 2.00.

# 5.3.5 Multicollinearity

The final items were all correlated to each other (see Table 5.2) and none of the items were found to correlate higher above the cut-off of r = .90. The items should be reasonably correlated to each other but not to the point of extreme multicollinearity with correlations that are greater than .90 (Tabachnick & Fidell, 1996). If items do correlate above the cut-off they may be measuring the same construct and therefore can impact on specific analyses, such as factor analysis and SEM (Coakes & Steed, 2003). The highest correlation measured between the items in this study was r = .744 and the lowest correlation was r = -0.49. Most items ranged between r = -0.3 and r = 0.5.

Table 5.2: Pearson correlation between all used items

	Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	It would take a lot to get me to leave this organisation.	-																			
2	I would recommend this organisation to a friend seeking employment.	.64																			
3	This organisation inspires me to do my best work.	.58	.58																		
4	I rarely think about leaving this organisation to work somewhere else.	.70	.53	.48																	
5	Given the opportunity, I tell others great things about working here.	.59	.66	.64	.51																
6	This organisation motivates me to contribute more than is normally required to complete my work.	.57	.54	.68	.55	.65															
7	My co-workers respect my thoughts and feelings.	.36	.35	.41	.29	.41	.36														
8	It is safe for me to speak up and express my views in my team.	.45	.42	.49	.40	.43	.50	.53													
9	We have a work environment that is open and accepts individual differences.	.46	.42	.43	.35	.44	.36	.63	.64												
10	My manager treats people fairly.	.39	.36	.45	.34	.42	.46	.43	.54	.45											
11	My manager involves me in decisions that affect me.	.39	.41	.47	.35	.49	.52	.41	.56	.41	.73										
12	I get a sense of accomplishment from my work.	.57	.52	.59	.49	.60	.60	.41	.46	.40	.40	.45									
13	I truly enjoy my day-to-day work tasks.	.57	.54	.60	.55	.56	.57	.39	.45	.35	.32	.37	.74								
14	I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments.	.51	.47	.54	.43	.51	.55	.41	.51	.37	.58	.58	.54	.51							
15	My future career opportunities here look good.	.58	.47	.53	.49	.49	.47	.35	.44	.40	.47	.45	.55	.47	.55						
16	The intensity of my work is manageable over the longer term.	41	39	37	36	46	43	27	26	29	35	38	35	38	39	30					
17	My work-related stress is manageable for me.	38	42	39	33	49	43	32	36	34	42	41	41	44	42	28	.74				
18	I can try new things even if they lead to occasional mistakes.	.42	.44	.49	.35	.43	.53	.37	.50	.43	.48	.50	.54	.46	.51	.44	30	40			
19	This organisation embraces great ideas no matter where they come from.	.46	.38	.51	.39	.51	.55	.38	.50	.44	.39	.45	.38	.35	.49	.44	28	28	.46		
20	Our work environment supports calculated risks in order to be innovative.	.41	.42	.45	.36	.45	.50	.30	.40	.36	.36	.42	.41	.41	.45	.41	37	40	.52	.55	
21	I am encouraged to seek out innovative and creative solutions to help improve the organisation's performance.	.43	.44	.59	.42	.54	.69	.33	.47	.34	.49	.56	.50	.47	.55	.48	32	37	.55	.55	.55

*Note.* All correlations are significant at the 0.01 level (2-tailed).

Additionally, a test for collinearity was conducted using multiple regression analysis. As shown in Table 5.3 no abnormalities which indicate multicollinearity could be found in the tolerance and variance inflation factor (VIF) statistics (Hair et al., 2009).

	Collinearity Statistics		
	Tolerance	VIF	
On Job Satisfaction			
Innovation	.454	2.203	
Inclusion	.530	1.887	
Engagement	.458	2.185	
Job Stress	.694	1.441	

Table 5.3: Collinearity check of the independent variables on dependent variable

# 5.3.6 Control Variables

Three statistic tests—linear regression, independent sample T-test and one-way analyses of variance (ANOVA)—were utilised to identify which control variables should be used. With the objective to find appropriate control variables, age, gender, people responsibility and years of service were investigated. These were selected based on other publications in the same research area, such as Shanker et al. (2017), Gawke et al. (2017b) and Chen and Tang (2018).

First, a linear regression testing for years of service, age, supervisor responsibility and gender on climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction was explored. The results showed that years of service and supervisor responsibility had a significant contribution to job stress. Each control variable was tested in separate regressions. The outcomes showed that years of service and supervision responsivity needed to be utilised as control variables (see Table 5.4).

Table 5.4: Linear regressio	n of years o	f service, age and	gender on all	variables
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Variables	F-test
Years of Service (Independent Variable)	
Climate for Innovation	F(1, 400) = 1.147, p = <.285 (ns)
Climate for Inclusion	F(1, 400) = 0.740, p = <.390 (ns)
Employee Engagement	F(1, 400) = 0.330, p = <.566 (ns)
Job Stress	F(1, 400) = 9.261, p = <.002
Job Satisfaction	F(1, 400) = 1.211, p = <.272 (ns)
Age (Independent Variable)	
Climate for Innovation	F(1, 400) = 0.054, p = <.817 (ns)
Climate for Inclusion	F(1, 400) = 2.586, p = <.109 (ns)
Employee Engagement	F(1, 400) = 0.685, p = <.408 (ns)
Job Stress	F(1, 400) = 6.973, p = <.009
Job Satisfaction	F(1, 400) = 0.045, p = <.832 (ns)
Gender (Independent Variable)	
Climate for Innovation	F(1, 400) = 0.439, p = <.508 (ns)
Climate for Inclusion	F(1, 400) = 0.564, p = <.453 (ns)
Employee Engagement	F(1, 400) = 1.637, p = <.202 (ns)
Job Stress	F(1, 400) = 1.509, p = <220 (ns)
Job Satisfaction	F(1, 400) = 1.521, p = <.218 (ns)
People Responsibility (Independent Variable)	
Climate for Innovation	F(1, 400) = 4.004, p = <.046
Climate for Inclusion	F(1, 400) = 0.331, p = <.565 (ns)
Employee Engagement	F(1, 400) = 1.599, p = <.207 (ns)
Job Stress	F(1, 400) = 5.705, p = <.017
Job Satisfaction	F(1, 400) = 3.116, p = <078 (ns)

*Note.* ns = not significant.

Independent sample *t*-tests were then conducted to test whether gender or supervisor responsibility have a significant difference for the variables of: climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction. As shown in Table 5.5, the results showed that there is a significant difference for job stress regarding managers and employees. All other variables showed no significant differences (see Table 5.5). These results in combination with the regression results show that people responsibility needs to be used as a control variable as there is a significant difference for job stress.

Table 5.5: Independent samples T-tests between gender and all variables

Variable	M	ean	- T test
	Male	Female	- 1-test
Climate for Innovation	4.83	4.84	t(397) = 0.594, p = .553 (ns)
Climate for Inclusion	5.02	4.98	t(397) = 0.412, p = .680 (ns)
Employee Engagement	4.83	4.84	t(397) = -0.073, p = .942 (ns)
Job Stress	2.37	2.55	t(397) = -1.725, p = .085 (ns)
Job Satisfaction	4.69	4.66	t(397) = 0.318, p = .751 (ns)

	People Res	ponsibility	
	Manager	Employee	_
Climate for Innovation	4.74	4.54	t(398) = 2.032, p = .043
Climate for Inclusion	5.04	4.99	t(398) = 0.575, p = .565 (ns)
Employee Engagement	4.93	4.80	t(398) = 1.265, p = .207 (ns)
Job Stress	2.66	2.38	t(398) = 2.380, p = .018
Job Satisfaction	4.80	4.63	t(398) = 1.765, p = .078 (ns)

*Note.* ns = not significant

ANOVAs were utilised to identify differences in the variance between the groups of years of service, age and all variables. The control variable years of service has 10 different groups and age has six groups (see Table 5.6).

 #	Years of Service	Age
1	Less than 3 months	Less than 20 years
2	More than 3 months-1 year	20-24 years
3	More than 1 year-2 years	25-34 years
4	More than 2 years–3 years	35–44 years
5	More than 3 years–5 years	45–54 years
6	More than 5 years–10 years	55 years or more
7	More than 10 years-15 years	
8	More than 15 years-20 years	
9	More than 20 years-25 years	
10	More than 25 years	

Table 5.6: Groups of years of service and age

The results showed significant differences between years of service on job stress (see Table 5.7).

Table 5.7: One-Way-ANOVAs of years of service, age, gender and all variables

Variable	F-test
Years of Service	
Innovation	F(9, 400) = 0.764, p = <.650 (ns)
Inclusion	F(9, 400) = 0.744, p = <.668 (ns)
Engagement	F(9, 400) = 0.992, p = <.446 (ns)
Job Stress	F(9, 400) = 2.439, p = <.010
Job Satisfaction	F(9, 400) = 0.706, p = <.703 (ns)
Age	
Innovation	F(5, 400) = 0.735, p = <.597 (ns)
Inclusion	F(5, 400) = 0.711, p = <.615 (ns)
Engagement	F(5, 400) = 0.952, p = <.448 (ns)
Job Stress	F(5, 400) = 1.691, p = <.136 (ns)
Job Satisfaction	F(5, 400) = 0.821, p = <.535 (ns)

*Note. ns* = *not significant.* 

In conclusion and aligned with all previous analyses, years of service and people responsibility were used as control variables.

### 5.3.7 Exploratory Factor Analysis

The next sections show the results of the EFA for the following scales: innovation (4 items), inclusion (5 items), engagement (6 items), job stress (2 items), and job satisfaction (7 items).

#### 5.3.7.1 Innovation Scale

An EFA was conducted to explore the items for climate of innovation. The four items come from the GEOS 2017 survey. For the EFA a Principle-Axis Factoring (PAF) with oblique rotation (direct oblimin) was used. For the full sample size the Kaiser-Meyer-Olkin (KMO) measure was .797, which can be interpreted as the sample having a great amount of sampling adequacy (Field, 2009). Bartlett's test of sphericity was found to be significant,  $\chi 2$  (6) = 532.626, p <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 64.834%. As stated by Hair et al. (2009), a rule of thumb is to retain factors which cumulatively explain 60% of the variance. For this reason, just one factor was extracted. Another indicator for one factor was Cattell's scree plot (Field, 2009); this showed a clear elbow after the first factor.

The reliability of the scale was then tested. The result  $\alpha = .818$  can be seen as having good internal consistency (Tavakol & Dennick, 2011). The overall results are shown in Table 5.8.

Labels	Items	Factor Loadings
INNOV1	I can try new things even if they lead to occasional mistakes.	0.695
INNOV2	This organisation embraces great ideas no matter where they come from.	0.715
INNOV3	Our work environment supports calculated risks in order to be innovative.	0.744
INNOV4	I am encouraged to seek out innovative and creative solutions to help improve the organisation's performance.	0.762
	Kaiser-Meyer-Olkin (KMO)	.797
	Bartlett's test of sphericity	χ2 (6) = 532.626, p <.0001
	Explained variance	64.834%
	Cronbach's Alpha	$\alpha = .818$

Table 5.8: Results of innovation EFA for the reduced sample (N = 400)

## 5.3.7.2 Inclusion Scale

A factor analysis was conducted to explore the items for climate of innovation. The five items come from the GEOS 2017 survey. For the EFA a PAF with oblique rotation (direct oblimin) was used. For the full sample size the KMO measure was .783, which can be interpreted as the sample having a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi^2$  (10) = 948.597, p <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 63.209%. As stated by Hair et al. (2009), a rule of thumb is to retain factors which cumulatively explain 60% of the variance. In combination with the Cattell's scree plot there was a clear elbow after the first factor. The reliability of the scale was then tested, resulting in  $\alpha$  = .852 which indicates good internal consistency (Tavakol & Dennick, 2011). The overall results are shown in Table 5.9.

Labels	Items	Factor Loadings	
INCL1	My co-workers respect my thoughts and feelings.	0.675	
INCL2	It is safe for me to speak up and express my views in my team.	0.797	
INCL3	We have a work environment that is open and accepts individual differences.	0.733	
INCL4	My manager treats people fairly.	0.745	
INCL5	My manager involves me in decisions that affect me.	0.723	
	Kaiser-Meyer-Olkin (KMO)	.783	
	Bartlett's test of sphericity	χ2 (10) = 948.597, p <.0001	
	Explained variance	63.209%	
	Cronbach's Alpha	$\alpha = .852$	

Table 5.9: Results of inclusion EFA for the reduced sample (N = 400)

## 5.3.7.3 Engagement Scale

A factor analysis was conducted to explore the items for climate of innovation. The six items come from the GEOS 2017 survey. For the EFA a PAF with oblique rotation (direct oblimin) was used. For the full sample size the KMO measure was .874, which can be interpreted as the sample having a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi^2$  (15) = 1,371.91, p <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 66.507%. As stated by Hair et al. (2009), a rule of thumb is to retain factors which cumulatively explain 60% of the variance. For this reason, just one factor was extracted, and Cattell's scree plot also showed a clear elbow after the first factor. The reliability of the scale was then tested, resulting in  $\alpha$  = .892, which indicates excellent internal consistency (Tavakol & Dennick, 2011). The overall results are shown in Table 5.10.

Labels	Items	Factor Loadings	
ENG1	It would take a lot to get me to leave this organisation.	0.806	
ENG2	I would recommend this organisation to a friend seeking employment.	0.767	
ENG3	This organisation inspires me to do my best work.	0.773	
ENG4	I rarely think about leaving this organisation to work somewhere else.	0.711	
ENG5	Given the opportunity, I tell others great things about working here.	0.799	
ENG6	This organisation motivates me to contribute more than is normally required to complete my work.	0.782	
	Kaiser-Meyer-Olkin (KMO)	.874	
	Bartlett's test of sphericity	χ2 (15) = 1,371.91, p <.0001	
	Explained variance	66.507%	
	Cronbach's Alpha	α = .892	

Table 5.10: Results of engagement EFA for the reduced sample (N = 400)

## 5.3.7.4 Job Stress Scale

The two items for the job stress scale come from the GEOS 2017 survey. The reliability of the job stress scale was tested, resulting in a Cronbach's alpha of .852, which indicates good internal consistency (Tavakol & Dennick, 2011).

#### 5.3.7.5 Job Satisfaction

A factor analysis was conducted to explore the items for climate of innovation. The four items come from the GEOS 2017 survey. For the EFA a PAF with oblique rotation (direct oblimin) was used. For the full sample size the KMO measure was .759, which can be interpreted as the sample having a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi 2$  (6) = 679.184, *p* <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 67.742%. As stated by Hair et al. (2009), a rule of thumb is to retain factors which cumulatively explain 60% of the variance. Cattell's scree plot showed a clear elbow after the first factor and so one factor was retained.

The reliability of the scale was then tested, resulting in a Cronbach's alpha of .830, which can be seen as it having a good internal consistency (Tavakol & Dennick, 2011). The results for the smaller sample sizes are shown in Table 5.11.

Labels	Items	Factor Loadings	
SATIS1	I get a sense of accomplishment from my work.	0.862	
SATIS2	I truly enjoy my day-to-day work tasks.	0.788	
SATIS3	I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments.	0.693	
SATIS4	My future career opportunities here look good.	0.668	
	Kaiser-Meyer-Olkin (KMO)	.759	
	Bartlett's test of sphericity	χ2 (6) = 679.184, p <.0001	
	Explained variance	67.506%	
	Cronbach's Alpha	$\alpha = .830$	

Table 5.11: Results of job satisfaction EFA for the reduced sample (N = 400)

In summary, EFA was used to confirm the association of the items to each construct. All items for each scale were subjected to PAF with oblique rotation (direct oblimin). Each scale and their items were found to have good factor loadings and showed one factor with an Eigenvalue greater than one. The reliability of the scales was assessed using the Cronbach's alpha method, showing good overall reliability for each scale.

## 5.3.8 Confirmatory Factor Analysis

The next sections present the results of the CFA for the following scales: innovation inclusion, engagement, job stress and job satisfaction.

#### 5.3.8.1 Innovation Scale

SPSS AMOS (version 21) was used to perform a CFA to substantiate the items of the climate for innovation scale (Figure 5.2).



Figure 5.2: Climate for Innovation Model One

The standardised path estimates, as shown in Table 5.12, were above the recommended cut-off of .5, and these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.12 shows the SMCs; all of these were in the acceptable range.

Items	Standardised estimates	SMC's
INNO1	.70	.49
INNO2	.72	.52
INNO3	.74	.55
INNO4	.76	.58

Table 5.12: Confirmatory Factor Analysis of Climate for Innovation Scale Model One

Note: SMC = squared multiple correlation

Overall the goodness of fit indices, as shown in Table 5.13, indicated that the data fit the model well, with the obtained indices indicating a good model fit (Hair et al., 2009).

Table 5.13: Goodness of Fit Indices of Climate for Innovation Scale Model One

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	3.35	<5.00
Comparative Fit Index (CFI)	.991	>.90
Root Mean Square Error of Approximation (RMSEA)	.077	<.08
Standardised Root Mean Residual Covariance (SRMR)	.019	<.07
## 5.3.8.2 Inclusion Scale

A CFA was conducted to substantiate the items of the climate for inclusion scale (Figure 5.3).



Figure 5.3 Climate for Inclusion Model One

The standardised path estimates, as shown in Table 5.14, were above the recommended cut-off of .5, and these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.14 shows the SMCs; all of these were in an acceptable range.

Items	Standardised estimates	SMC's
INCL1	.67	.45
INCL2	.80	.64
INCL3	.73	.53
INCL4	.74	.55
INCL5	.73	.53

Table 5.14: Confirmatory Factor Analysis for Climate for Inclusion Scale Model One

Note: SMC = squared multiple correlation

Overall the goodness of fit indices, as shown in Table 5.15, indicated that the data did not fit the model well because none of the obtained goodness of fit indices met the cut-off parameters (Hair et al., 2009).

Table 5.15: Goodness of Fit Indices for Climate for Inclusion Scale Model One

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	32.894	<5.00
Comparative Fit Index (CFI)	.831	>.95
Root Mean Square Error of Approximation (RMSEA)	.283	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0810	<.07

As seen in Table 5.16, a few model issues were identified with modification indices suggesting that the fit of the model could be improved by changing the appropriate path (Hair et al., 2009).

Mo	dification I	ndices		
e4	<>	e5	103.233	.363
e3	<>	e5	34.213	197
e3	<>	e4	19.011	143
e1	<>	e5	13.410	106
e1	<>	e4	8.899	084
e1	<>	e3	43.798	.175
e2	<>	e4	6.942	083
e2	<>	e3	14.685	.114

Table 5.16: Modification Indices for Climate for Inclusion Scale Model One

Based on the modification indices, Incl5 was removed (see Figure 5.4). The model was run again and the fit indices, as shown in Table 5.18, indicated that removing the item improved model fit greatly.



Figure 5.4: Climate for Inclusion Model Two

The standardised path estimates, as shown in Table 5.17, were above the recommended cut-off of .5 and these loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.17 shows the SMCs and all of these were in an acceptable range.

Items	Standardised estimates	SMC's
INCL1	.73	.53
INCL2	.79	.62
INCL3	.83	.69
INCL4	.61	.37

Table 5.17: Confirmatory Factor Analysis for Climate for Inclusion Scale Model Two

Note: SMC = squared multiple correlation

The goodness of fit indices CFI and SRMR, as shown in Table 5.18, indicated that the data fit the model better, with the obtained indices indicating a good model fit (Hair et al., 2009). The other two indices could not meet the cut-offs. It was shown that deleting the items improved the model and any further attempts to reduce the items made no difference to the model or would make the model collapse. For this reason, it was decided to remove this item from the inclusion scale.

Table 5.18: Goodness of Fit Indices for Climate for Inclusion Scale Model Two

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	9.094	<5.00
Comparative Fit Index (CFI)	.973	>.90
Root Mean Square Error of Approximation (RMSEA)	.142	<.08
Standardised Root Mean Residual Covariance (SRMR)	.031	<.07

## 5.3.8.3 Employee Engagement Scale

A CFA was conducted to substantiate the items of the employee engagement scale (Figure 5.5).



Figure 5.5: Employee Engagement Scale Model One

The standardised path estimates, as shown in Table 5.19, were above the recommended cut-off of .5. These higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.19 shows the SMCs; all of these were in an acceptable range.

Table 5.19: Structure for the Employee Engagement Scale Model One

	Standardised estimates	SMC's
ENG1	.80	.64
ENG2	.78	.61
ENG3	.78	.61
ENG4	.71	.50
ENG5	.80	.64
ENG6	.78	.61

Note: SMC = squared multiple correlation

Overall, the goodness of fit indices, as shown in Table 5.20, indicated that the data did not fit the model well because none of the obtained goodness of fit indices met the cut-off parameters (Hair et al., 2009).

Table 5.20: Goodness of Fit Indices for Employee Engagement Scale Model One

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	11.704	<5.00
Comparative Fit Index (CFI)	.930	>.90
Root Mean Square Error of Approximation (RMSEA)	.164	<.08
Standardised Root Mean Residual Covariance (SRMR)	.047	<.07

As seen in Table 5.21 a few model issues were identified, with modification indices suggesting that the fit of the model could be improved by changing the appropriate path (Hair et al., 2009).

Table 5.21: Modification Indices for Climate for Inclusion Scale Model One

Mod	lification	Indices		
e4	<>	e5	10.941	112
e3	<>	e6	19.213	.117
e3	<>	e4	11.554	133
e1	<>	e6	7.588	084
e1	<>	e5	8.831	078
e1	<>	e4	55.096	.330
e2	<>	e6	11.166	084
e2	<>	e5	7.915	.062

Based on the modification indices, Eng1 and Eng6 were removed (see Figure 5.6). The model was run again and the fit indices, as shown in Table 5.23, indicated that removing the items greatly improved model fit.



Figure 5.6: Employee Engagement Scale Model Two

The standardised path estimates, as shown in Table 5.22, were above the recommended cut-off of .5. These higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.22 shows the SMCs and all of these were in an acceptable range.

	Standardised estimates	SMC's
ENG2	.79	.62
ENG3	.75	.56
ENG4	.64	.41
ENG5	.83	.69

Table 5.22: Structure for the Employee Engagement Scale Model Two

Note: SMC = squared multiple correlation

All goodness of fit indices, as shown in Table 5.23, indicated that the data fit the model well, with the obtained indices indicating a good model fit (Hair et al., 2009). It was shown that deleting the two items improved the model towards good fit. For this reason, it was decided to remove these items from the employee engagement scale.

Table 5.23: Goodness of Fit Indices for Employee Engagement Scale Model Two

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	2.066	<5.00
Comparative Fit Index (CFI)	.997	>.90
Root Mean Square Error of Approximation (RMSEA)	.052	<.08
Standardised Root Mean Residual Covariance (SRMR)	.014	<.07

## 5.3.8.4 Stress Scale

The stress scale has just two items. For this reason, the Cronbach's alpha score was used.

## 5.3.8.5 Job Satisfaction Scale

A CFA was conducted to substantiate the items of the job satisfaction scale (Figure 5.7).



Figure 5.7: Job Satisfaction Scale Model One

The standardised path estimates (see Table 5.24) were above the recommended cut off of .5. These loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table 5.24 shows the SMCs and all of these were in an acceptable range.

Items	Standardised estimates	SMC's
STAIS1	.89	.80
SATIS2	.82	.67
SATIS3	.65	.43
SATIS4	.63	.40

Table 5.24: Confirmatory Factor Analysis for the Job Satisfaction Scale Model One

Note: SMC = squared multiple correlation

The goodness of fit indices CFI and SRMR, as shown in Table 5.25, indicated that the data fit the model, with the obtained indices indicating a good model fit (Hair et al., 2009). There were two indices that did not meet the cut-offs. However, any further attempts to reduce these items made the model collapse. For this reason, it was decided to leave the items as they were. The very good model fit of the entire path model and the good alpha score of .830 further strengthened this decision.

Table 5.25: Goodness of Fit Indices for Job Satisfaction Scale Model One

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	17.041	<5.00
Comparative Fit Index (CFI)	.953	>.90
Root Mean Square Error of Approximation (RMSEA)	.201	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0140	<.07

# 5.3.9 Common Method Variance

Table 5.26 shows the Harman's single-factor test with a probability of common variance (see Section 4.6.6) with 43% variance, which was still below of the cut-off of 50%. In addition, the CLF technique was conducted and showed a common variance of 29% (see Table 5.27). To conclude, the common variance was considered, and it could be shown that some common variance is present, but it is below the critical cut-offs. For this reason, an acceptable small effect on the results can be assumed which should be included in the evaluation of the results to some extent.

Table 5.26: Harman's single-factor test

Method	Variance	Cut-off
Harman's single-factor test	43%	50%
Table 5.27: Common latent factor technique		
Method	Unstandardised estimates	Common variance
Common latent factor	.54	29%

## 5.3.10 Correlations between Scales

Correlation is a measure of the degree of relatedness of aggregated scales and is checked before the actual path model. It gives an overview of how the variables stand in relation to each other. The correlation analysis was run in SPSS (version 11) and the results are shown in Table 5.28.

Table 5	.28:	Pearson	correlation	between	aggregates	variables
				1		

	Method	Innovation	Inclusion	Engagement	Job Stress	Job Satisfaction
Innovation		$\alpha = .818$				
Inclusion	Pearson Correlation	.638 (***)	α = .852			
Engagement	Pearson Correlation	.675 (***)	.603 (***)	$\alpha = .892$		
Job Stress	Pearson Correlation	464 (***)	439 (***)	521 (***)	$\alpha = .852$	
Job Satisfaction	Pearson Correlation	.700 (***)	.645 (***)	.778 (***)	486 (***)	$\alpha = .830$

*Note.* \*\*\* = Correlation is significant at the 0.001 level (2-tailed);  $\alpha$  = Cronbach's Alpha Score

The results showed that most aggregated variables had a reasonable correlation to each other. This may be due to the fact that the items are not fully normally distributed. In general, it can be said that most items have a negative skew. Thus, the answers are more on the positive direction towards 4, which means "agree". As stated earlier, it can be noted that the missing neutral point on a 6-point scale can force more skewness (Leung, 2011). The strongest positive correlation was between innovation and employee engagement, with r = .707, which suggests that the more employees have the opportunity to work in an innovative climate, the more engagement they have with their job. Similarly, the correlation (r = .698) between engagement and job satisfaction implies that the more engaged employees are, the more satisfaction they will experience. The same can be assumed for inclusion and engagement (r = .640). The strongest negative correlation was between employee steel engaged the less they feel stressed (r = .521). Additionally, it is noticeable that job stress has the smallest correlations as compared to the other scales, which suggests that job stress may have the smallest impact on the overall model.

#### 5.3.11 Structural Model—Path Model

The final model (see Figure 5.8) was built with all model variables and two control variables. Climate for innovation (=Inno) and climate for inclusion (=Incl) were included as independent variables, employee engagement (=Enga) and job stress (=Stres) were mediating variables, and job satisfaction (=Satis) was the dependent variable. Based on the existing hypotheses, the different variables were connected with directed paths. Additionally, both control variables (people responsibility and years of service) were included in the model and both were connected to all mediator and dependent variables.



Figure 5.8: Final Path Model One

Overall, the goodness of fit indices, as shown in Table 5.29, indicated that the data fit the final path model well because all the obtained goodness of fit indices met the cut-off parameters (Hair et al., 2009).

Table 5.29:	Goodness	of Fit	Indices for	• overall	research model
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Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	3.343	<5.00
Comparative Fit Index (CFI)	.914	>.90
Root Mean Square Error of Approximation (RMSEA)	.077	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0291	<.07

To further improve the model, it was decided to delete non-significant paths between control variables and the mediator or dependent variables to free up some degrees of freedom. As shown in Table 5.30, the paths between years of service and employee engagement, years of service and job satisfaction, and people responsibility and employee engagement were deleted.

Predictor	Outcome	Std. Beta	р	Label
Climate for Innovation	Job Satisfaction	.109	ns	
Climate for Inclusion	Job Satisfaction	.089	ns	
Climate for Innovation	Employee Engagement	.717	**	
Employee Engagement	Job Satisfaction	.713	**	
Climate for Innovation	Job Stress	498	**	
Job Stress	Job Satisfaction	070	ns	
Climate for Inclusion	Employee Engagement	.176	*	
Climate for Inclusion	Job Stress	141	ns	
Years of Service	Employee Engagement	037	ns	Path deleted
Years of Service	Job Stress	.118	*	
Years of Service	Job Satisfaction	.054	ns	Path deleted
People Responsibility	Employee Engagement	-006	ns	Path deleted
People Responsibility	Job Stress	173	**	
People Responsibility	Job Satisfaction	089	*	

Table 5.30: Standardised regression weights of path model one

*Note.* \*\* = *p* <.001; \* = *p* <.05; *ns* = *not significant* 

Further, as seen in Table 5.31, the modification indices suggested creating an additional path between job stress and employee engagement. For this reason, an additional path between these both variables was created. This is an interesting suggestion as it coincides with the literature concerning JD-R theory. Bakker and Demerouti (2007), Bakker et al. (2014), and Bakker and Demerouti (2017) have shown that strain in the form of job stress can have a direct negative effect on motivation or engagement.

Table 5.31: Modific	ation indices fo	or path model one
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Predictor	Outcome			
Job Stress	Employee Engagement	6.816	079	Path was created

The final path model two was adjusted as described above (see Figure 5.9). The model was run again and the fit indices, as shown in Table 5.32, indicated that deleting non-significant paths and creating one additional path between job stress and employee engagement would improve the model fit.



Figure 5.9: Final path model two

All goodness of fit indices, as shown in Table 5.32, indicated that the data fit the final path model two well, with the obtained indices indicating a good model fit (Hair et al., 2009).

Table 5.32: Goodness of fit indices for final path model two

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	3.216	<5.00
Comparative Fit Index (CFI)	.917	>.90
Root Mean Square Error of Approximation (RMSEA)	.075	<.08
Standardised Root Mean Residual Covariance (SRMR)	.019	<.05

Figure 5.10 shows all the significant standardised pathways found. All direct and indirect effects are explained in the next section in more detail.



Figure 5.10: Final model significant with standardised pathways Note. \*\* = p < .001; \* = p < .05

# 5.3.11.1 Direct Effects

Table 5.33 shows that there were several direct effects between the model variables.

Table 5.33: Direct effects of SEM

Predictor	Outcome	Std. Beta	р
Climate for Innovation	Job Satisfaction	.123	ns
Climate for Inclusion	Job Satisfaction	.101	ns
Climate for Innovation	Employee Engagement	.594	**
Employee Engagement	Job Satisfaction	.721	**
Climate for Innovation	Job Stress	427	**
Job Stress	Job Satisfaction	018	ns
Climate for Inclusion	Employee Engagement	.158	*
Climate for Inclusion	Job Stress	188	*
Job Stress	Employee Engagement	210	**
Years of Service	Job Stress	.123	*
People Responsibility	Job Stress	171	**
People Responsibility	Job Satisfaction	090	*

*Note.* \*\* = p < .001; \* = p < .05; ns = not significant

Climate for innovation had a significant strong direct effect on employee engagement ( $\beta$  .594, p <.001). This suggests that a climate for innovation increases intrinsic motivation for work through engagement. Further, climate for innovation was found to directly negatively impact job stress ( $\beta$  -.427, p <.001), indicating that for employees who work in an innovative climate their job stress is lower. Overall, climate for innovation was found to have a positive direct, but not significant, effect on job satisfaction ( $\beta$  .123, p = <.206).

Similarly, climate for inclusion had a direct positive effect on employee engagement ( $\beta$  .158, p <.036), implying that a climate for inclusion leads to greater employee engagement. Climate for inclusion was also found to have a direct negative relationship with job stress ( $\beta$  -.188, p <.046), which suggests that employees who work in an inclusive environment are better able to manage their stress. Climate for inclusion had a positive direct, but not significant, effect on job satisfaction ( $\beta$  .101, p <.127).

Employee engagement was found to have a direct significant effect on job satisfaction ( $\beta$  .721, p <.001). This indicates that the more a person is engaged at work the higher their job satisfaction will be. Job stress had a significant negative effect on employee engagement ( $\beta$  -.210, p <.001), indicating that stressed employees feel less engaged. Further, job stress was not found to have a significant direct effect on job satisfaction ( $\beta$  -.018, p <.721).

There were also effects with control variables. People responsibility was found to have a direct effect on job stress ( $\beta$  -.171, p <.001), suggesting that the higher employees work in the hierarchy, the better they can manage their stress level. Further, it was found that people responsibility has a significant but weak negative direct effect on job satisfaction ( $\beta$  -.090, p <.006), implying that employees who work higher in the hierarchy feel less satisfied with their job. It was also found that years of service had a significant positive effect on job stress ( $\beta$  -.123, p <.008), proposing that employees who work longer for the company feel more stressed at work.

#### 5.3.11.2 Indirect Effects

Table 5.34 shows that the mediators displayed several indirect effects. Employee engagement was found to have a strong effect on the relationship between climate for innovation and job satisfaction ( $\beta$ .445, p <.001), which indicates that employees feel more satisfied while working in an innovative climate, mainly because of higher engagement. On the other hand, employee engagement had no significant effect on the relationship between climate for inclusion and job satisfaction ( $\beta$ .103, p <.111). Further, job stress had

no significant effects on the relationship between climate for innovation and job satisfaction ( $\beta$  -.014, p <.328) or between climate for inclusion and job satisfaction ( $\beta$  -.004, p <.251).

*Note.* \*\* = p < .001; ns = not significant; Bootstrapping = 2000; Bias-corrected confidence intervals = 90

Parameter	Beta	Lower	Upper	р
Mediator: Employee Engagement				
Climate for Innovation - > Job satisfaction	.466	.286	.745	**
Climate for Inclusion - > Job satisfaction	.103	005	.226	ns
Mediator: Job Stress				
Climate for Innovation - > Job satisfaction	.008	044	0.75	ns
Climate for Inclusion - > Job satisfaction	.003	013	.035	ns

# 5.3.12 Comparison of Sample Sizes

As mentioned earlier, the full sample size of PharmXO was 68,549, but it was decided to reduce the sample size to 400 (see section 5.3.3). This is the maximal sample size recommended by Hair et al. (2009) before the SEM analysis in AMOS gets too sensitive. The reason for this step was that the larger sample inflated the results and made every path significant, even with small effect sizes. Despite the negative effects of the large sample size, testing both sample sizes allowed for a comparison between the two SEM models using the same variables. For this reason, the following section shows the final results of both sample sizes in comparison. The entire results section of the full sample size can be found in Appendix A.

As shown in Table 5.35 both sample sizes had similar goodness of fit statistics except the chi-square minimum values. The full sample size had a strong effect on the CMIN/DF which can be explained by the fact that the sample size is used directly in the calculation formula (Hair et al., 2009). This shows that CMIN/DF can be shifted upwards, especially by very large samples.

#### Table 5.35: Comparison of goodness of fit indices for final path models

Goodness of Fit Statistics	N = 400	N = 68,549	Cut-off
Chi-Square Minimum (CMIN/DF)	3.216	267.070	<5.00
Comparative Fit Index (CFI)	.917	.949	>.90
Root Mean Square Error of Approximation (RMSEA)	.075	.062	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0192	.0264	<.05

Table 5.36 shows the direct effects of both sample sizes in comparison. It is evident that the standardised regressions were similar and differed mainly only by their statistically significant levels. This can be explained by the fact that the larger sample size has a direct effect on the p-value and thus the statistical power is influenced upwards (Hair et al., 2009). However, it was an interesting finding that both samples showed similar overall direct effects.

 Table 5.36: Comparison of direct effects of both sample sizes

		N = 4	.00	N = 68,549		
Predictor	Outcome	Std. Beta	р	Std. Beta	р	
Climate for Innovation	Job Satisfaction	.123	ns	.127	**	
Climate for Inclusion	Job Satisfaction	.101	ns	.220	**	
Climate for Innovation	Employee Engagement	.594	**	.574	**	
Employee Engagement	Job Satisfaction	.721	**	.620	**	
Climate for Innovation	Job Stress	427	**	490	**	
Job Stress	Job Satisfaction	018	ns	048	**	
Climate for Inclusion	Employee Engagement	.158	*	.207	**	
Climate for Inclusion	Job Stress	188	*	254	**	
Job Stress	Employee Engagement	210	**	175	**	
Years of Service	Job Stress	.123	*	.065	**	
People Responsibility	Job Stress	171	**	050	**	
People Responsibility	Job Satisfaction	090	*	015	**	

*Note.* \* = p < .05; \*\* = p < .001; ns = not significant

Table 5.37 illustrates the mediator effects of both sample sizes in comparison. As well as with the direct effects, it is evident that the standardised regressions were similar and differed mainly only by their statistically significant levels. This was explained earlier as the larger sample size has a direct effect on the p-value and thus the statistical power is

influenced upwards. Overall, it is noteworthy that both samples found similar indirect effects.

 Table 5.37: Comparison of mediation effects with both sample sizes

Note.	** = p < .001; ns	= not significant; l	Bootstrapping =	2000; Bias-corr	ected confidence	intervals = 90

	$\mathbf{N} = \mathbf{A}$	400	N = 68,549		
Parameter	Beta	Р	Beta	р	
Mediator: Employee Engagement					
Climate for Innovation - > Job satisfaction	.466	**	.313	**	
Climate for Inclusion - > Job satisfaction	.103	Ns	.109	**	
Mediator: Job Stress					
Climate for Innovation - > Job satisfaction	.008	Ns	.018	**	
Climate for Inclusion - > Job satisfaction	.003	Ns	.013	**	

# 5.4 Study One: Discussion

The GEOS results showed that the majority of participants felt that they were working in a climate for innovation and inclusion within PharmXO. Climate for inclusion had the highest rating compared to all other variables. Many of the participants were engaged in their work and felt they could manage their stress levels. Most importantly, the mean for job satisfaction was reasonably high, suggesting that PharmXO employees enjoy their day-to-day work tasks.

The first study of this research set out to explore the effects of climate for inclusion and innovation (as job demands and resources) through both independent psychological pathways mentioned in JD-R theory. This was achieved through SEM. The literature suggests that employees who have sufficient resources at work will experience a motivating pathway response to their work (Schaufeli & Bakker, 2004). Therefore, job resources, through their motivational potential, help employees achieve their goals (Hackman & Oldham, 1974). In addition, job resources can lead to organisational commitment and employee engagement (Schaufeli & Bakker, 2004), which in turn promote job satisfaction.

On the other hand, job demands require sustained effort that can deplete an employee's resources and lead to energy depletion and health problems (Bakker & Demerouti, 2017; Caplan et al., 1975). Previous research has claimed that specific job demands, such as workload or emotional demands, have been repeatedly found to predict exhaustion and stress between different occupational groups (Bakker et al., 2003; Bakker et al., 2005). As

a result, job demands in combination with job resources are associated with psychological costs, such as exhaustion or stress at work, which in turn impair job satisfaction.

However, to date, little research has explored climate for innovation or climate for inclusion as job resources. Therefore, the hypothesis investigated the effects of climate for innovation and inclusion on job satisfaction through both the motivational process and the stress–health impairment process. Each direct effect and mediated effect between climate for innovation/inclusion and job satisfaction was linked to a particular hypothesis.

# 5.4.1 Direct Effects (H1a, H1b and H2)

Overall, the hypotheses regarding the direct effects were only partly supported. The following section discusses each hypothesis separately.

H1a: A climate for innovation has a direct positive effect on employee job satisfaction.H1b: A climate for innovation has a direct negative effect on employee job satisfaction.

Considering the results of both sample sizes, H1b was not supported as there was a positive direct effect between climate for innovation and job satisfaction (H1a). However, H1a was supported with a significant (full sample size) positive direct effect of climate for innovation on job satisfaction. In terms of the literature, it is not clear how both constructs relate to each other. Researchers have suggested that a climate for innovation has a positive effect on job satisfaction (Brimhall & Mor Barak, 2018) because employees are able to develop new skills, are able to embody innovative behaviours (Brimhall & Mor Barak, 2018; Hwang & Hopkins, 2012) and experience a greater sense of involvement (Karmeni et al., 2017; Shanker et al., 2017). Conversely, it has been argued that innovation could also have a negative effect on job satisfaction. For example, research has shown that rapid technology change impacts employee wellbeing negatively (González-Romá & Hernández 2016). Therefore, the support for H1a is novel as it shows that climate for innovation has a positive impact on job satisfaction. This demonstrates that employees who are encouraged to have innovative ideas and can show initiative will feel more satisfied with their job.

H2: An inclusive environment will positively influence employee job satisfaction.

It was further hypothesised that an inclusive climate will have a positive relationship with job satisfaction (H2). Considering the results of both sample sizes, this hypothesis was supported by the direct effects of the structural equation model. This finding was expected, as previous research has found that diversity and inclusion leads to higher job satisfaction,

organisational commitment and individual wellbeing (Brimhall et al., 2014; Brimhall & Mor Barak, 2018; Mor Barak et al., 2006; Shore et al., 2011). Similarly, Brimhall et al. (2014) and Brimhall and Mor Barak (2018) showed that perceived level of inclusion appears to be a strong predictor for job satisfaction, explaining that individuals who are different from the corporate mainstream and who feel excluded will experience lower job satisfaction. However, it was surprising that this effect could not be corroborated with an acceptable significant level within the smaller sample size of 400. Overall, these findings support the research of Hwang and Hopkins (2015), who state that more exploration of the relationship between perceived organisational inclusion and job satisfaction is needed. This is in line with very recent studies which suggest that climate for inclusion needs more exploration in order to fully understand the nature of this construct (Brimhall & Mor Barak, 2018; Randel et al., 2017; Shore et al., 2011; Shore et al., 2017). Overall, the current research has shown support for the extant research. However, despite the different regressions and significance level findings with both sample sizes, the positive influence of inclusion on employee job satisfaction was not a confirmed result.

## 5.4.2 Indirect Effects (H1.1, H1.2, H2.1 and H2.2)

Overall, the hypotheses regarding indirect effects were only partly supported. The following section discusses each hypothesis separately.

**H1.1:** Employee engagement will positively mediate the relationship between culture for innovation and job satisfaction.

H1.1 was supported, as the results of both sample sizes found that employee engagement had a significant strong positive mediating effect on the relationship between culture for innovation and job satisfaction. This suggests that employees who are encouraged to have new ideas, who able to show initiative and take risks are more engaged with their work tasks which leads to higher job satisfaction. This finding confirms that climate for innovation can be used as a job resource in JD-R theory and adds to the evidence regarding the impact of job resources on job satisfaction (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Furthermore, the results illustrate that climate for innovation activates the motivational process pathway within JD-R theory as employees with sufficient job resources feel efficacious, important to the organisation, optimistic, engaged and satisfied with their work (as shown by Gawke et al., (2017a); Xanthopoulou et al., (2007). In sum, the strong positive mediating role of employee engagement between climate for innovation and job satisfaction is a novel finding and contributes to existing knowledge regarding the role of innovation as a job resource in JD-R theory.

**H1.2:** Job stress will negatively mediate the relationship between culture for innovation and job satisfaction.

The results did not support H1.2 as the pathways for job stress were not significant (for the smaller sample size). Further, there were weak/low mediation effects of stress on the relationship between climate for innovation and job satisfaction. These findings are unexpected; as other research has found that intrapreneurial behaviours (e.g. innovation) could have a positive impact on job stress which leads to lower job satisfaction (Bakker & Demerouti, 2017; Birkinshaw, 1997; Gawke et al., 2017b). Innovative behaviours often require employees to do additional work and take risks, which can cause them to feel a greater sense of time pressure, anxiety and worry at work (Schaufeli & Bakker, 2004). Previous research has shown different effects of job stress on job satisfaction, but this research cannot confirm the previous findings.

Further, this result confirms that climate for innovation can be seen as a job resource in JD-R theory. According to the theory, job stress can play a mediating role between job demands and job satisfaction (Bakker et al., 2003; Bakker et al., 2014; Demerouti et al., 2001). However, this research did not support the mediating role of job stress between climate for innovation and job satisfaction. Regardless, this is a noteworthy finding as it adds useful information to the existing knowledge concerning the role of innovation as a job resource in JD-R theory.

**H2.1:** Employee engagement will positively mediate the relationship between culture for inclusion and job satisfaction.

The findings partly supported H2.1, as it was found that employee engagement has a significant positive mediating effect on the relationship between climate for inclusion and job satisfaction with the full sample size. However, the standardised regressions were very similar with both sample sizes, which suggests that employees who feel included in their work team are more engaged and therefore more satisfied with their work environment. To date, there has been no previous research that has investigated the mediating role of employee engagement. Nevertheless, it could be assumed that inclusive behaviours, such as team fairness or belonging, could result in positive psychological and organisational outcomes, such as employee engagement. This assertion has now been corroborated, as the findings show that an inclusive climate causes a sense of team solidarity which let employees feel unified, motivated, engaged, and optimistic about the team future and,

consequently, satisfied in their work. This also substantiates that an inclusive climate might be applied as a job resource in JD-R theory.

**H2.2:** Job stress will negatively mediate the relationship between culture for innovation and job satisfaction.

It was further hypothesised that job stress will negatively mediate the relationship between climate for inclusion and job satisfaction (H2.2). This hypothesis was not supported by the findings of the structural equation model. Research has yet to explore the mediating effect of job stress on climate for inclusion and job satisfaction. The current results have shown that job stress does not act as a mediator in the relationship between climate for inclusion and job satisfaction. This result suggests that climate for inclusion could be regarded as a job resource in JD-R theory. As mentioned previously, JD-R theory suggests that job stress in particular can play a mediating role between job demands and job satisfaction (Bakker et al., 2003; Bakker et al., 2014; Demerouti et al., 2001). In sum, the mediating role of job stress between climate for inclusion and job satisfaction was not supported, which is novel and contributes to the existing knowledge regarding the role of inclusion as a job resource in JD-R theory. Table 5.38 provides an overview of the study's proposed hypotheses.

Model	Hypothesis	Path	Direction	Support
H1a	A climate for innovation has a direct positive effect on employee job satisfaction.	Innovation $\rightarrow$ Job Satisfaction	+	S
H1b	A climate for innovation has a direct negative effect on employee job satisfaction.	Innovation $\rightarrow$ Job Satisfaction	-	ns
H2	A climate for inclusion has a direct positive effect on employee job satisfaction.	Inclusion $\rightarrow$ Job Satisfaction	+	s
H1.1	Employee engagement has a positive mediation role in the relationship between climate for innovation and job satisfaction.	Innovation $\rightarrow$ Engagement $\rightarrow$ Job Satisfaction	+	S
H1.2	Job stress has a negative mediation role in the relationship between climate for innovation and job satisfaction.	Innovation $\rightarrow$ Stress $\rightarrow$ Job Satisfaction	-	ns
H2.1	Employee engagement has a positive mediation role in the relationship between climate for inclusion and job satisfaction.	Inclusion $\rightarrow$ Engagement $\rightarrow$ Job Satisfaction	+	S
H2.2	Job stress has a negative mediation role in the relationship between climate for inclusion and job satisfaction.	Inclusion $\rightarrow$ Stress $\rightarrow$ Job Satisfaction	-	ns

*Note*. s = supported; ns = not supported

Source: developed for this research

# 5.5 Study One: Limitations

A number of limitations must be taken into account when evaluating the results and their implications. The following section is a brief discussion on the limitations of this first study. A full review is provided in Chapter 7.

The first limitation that should be mentioned was the dependency of this research on a secondary dataset. Despite the limitation of the available set of questions, the items of the secondary dataset were well matched to suggestions from the literature review (Özpehlivan et al., 2016; Shuck et al., 2017; Stańczyk, 2017). However, the job stress scale was narrowed to just two questions which were focused on time-demanding work stress. For this reason, no emotional stressors could be measured that might have influenced the results (Ganster, 2008). It is possible that the hypotheses regarding the health impairment pathway would have been supported if other forms of stress had been measured, such as emotional stress. In order to address this limitation, the qualitative questions of the second study were extended to include a range of stress types.

Second, the final model two resulted in a very good fit. However, some of the CFA goodness of fit indices for climate for inclusion and job satisfaction could not meet all the

cut-offs. This multivariate statistical method was used to check how well the measured variables represent the specific constructs. Since the goodness of fit indices of the final model showed very good fit and all scales had good internal consistency, this limitation should not influence the results. However, the use of overall goodness of fit measures does not mean that they represent a valid representation of reality. It should be mentioned in general that the beneficial results in any modelling are relative and not definitive (Hair et al., 2009). The model shows a good representation of the relationships between the constructs and tries to signal causality; however, SEM alone cannot detect causality for cross-sectional data (Byrne, 2013). Therefore, the model adequacy in this research is based on theoretical foundations in addition to statistical and practical considerations (Hair et al., 2009).

Third, an additional limitation may be a possible common method variance bias since all the variables were measured with the same instrument. Since this possible measurement issue was known to the researcher, statistical remedies were applied to measure common method variance (Podsakoff et al., 2003). With these methods, a relatively small effect could be measured and the results were below the cut-offs. This possible issue should not have a great influence on the study's results, as the variance was still within an acceptable range and it has already been generally argued that common method variance is not very problematic in organisational research (Lance, Dawson, Birkelbach, & Hoffman, 2010).

However, the limitations described above do not minimise the meaningfulness or significance of the results. Nevertheless, perspectives and factors may exist that go beyond the scope of this study and the limitations are recognised to clarify the results and identify opportunities for future research. The possibilities for future research are provided in Chapter 7.

# 5.6 Conclusion

Chapter 5 reported the methodology and results of the data analysis for the first study of this research. Firstly, it provided a profile of the organisation PharmXO and the survey with all its measures. After the data were available, a preliminary analysis was carried out to ensure that the data were clean. The data were checked for missing data, multicollinearity and normality. A series of linear regression, independent sample *t*-tests and one-way ANOVAs were utilised to identify which control variables should be used within the structural equation model. Correlations and descriptive statistics were then analysed for each item and between aggregated variables. Bartlett's test of sphericity and the KMO measurement of sample adequacy showed good results for each construct. Subsequently, Cronbach's alpha reliability tests were performed on all constructs and the results were satisfactory, with all alpha coefficients greater than 0.70. The critical ratio values of items within each construct in the CFA also demonstrated convergent validity, and most goodness of fit indices indicated model fit for all constructs.

SEM was then used to test the final model developed during the literature review and further confirmed in the exploratory research. Various statistics such as CMIN/df, CFI, RMSEA and SRMR were adopted to evaluate the model fit. These indices indicated that the final model had a good overall model fit. After the finished model was ready, the direct and indirect effects were measured. Furthermore, the results of both model samples were compared.

It was shown that climate for innovation and climate for inclusion had significant effects on job satisfaction, supporting H1a and H2. In addition, the results of the mediator measurements have shown that employee engagement plays a strong mediating role between climate for innovation and job satisfaction. The same could be illustrated for climate for inclusion and job satisfaction but with lower mediating effect strength for employee engagement. These results supported H1.1 and H2.1. Concerning H1.2 and H2.2, no support could be found, suggesting that job stress cannot be seen as a mediator between climate for innovation/climate for inclusion and job satisfaction. Finally, the limitations of the first study were summarised and discussed.

# **CHAPTER 6**

# STUDY TWO

# 6.1 Introduction

Chapter five provided the results of study one and this sixth chapter will now present results of the qualitative study two. This study was designed to explore the findings of study one in more detail and to better understand the reasons behind the relationships. The results are presented and briefly discussed, noting possible limitations of the research. Figure 6.1 provides an overview of the chapter structure.



Figure 6.1: Outline of Chapter 6 Source: Developed for this research

# 6.2 Study Two: Research Questions

The literature review on climate for innovation and climate for inclusion in connection with job satisfaction identified many gaps in our existing knowledge of these important constructs (see Chapters 2 and 3). For this reason, hypotheses were developed in Chapter 3 and were tested in the first research study, with results reported and discussed in Chapter 5. Some of these hypotheses were supported, and thus statistical relationships between the individual constructs (climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction) could be shown. However, the first quantitative research study could not provide any information about the reasons for these relationships. The second research study provides a deeper understanding of the results from study one. Therefore, in this study, qualitative data were used to refine, explore and explain the statistical relationships by further examining participants' views of PharmXO.

The results of study one showed that climate for innovation and climate for inclusion had different significant correlations with employee engagement, job stress and job satisfaction. For this reason, the following research questions were developed for this second study in order to gain more insights into these relationships and to address the overarching research question (see section 1.3).

## **Research Questions for Study Two**

## Focus Area: Climate for Innovation

**RQ1:** Does a climate for innovation influence job satisfaction and, if so, why? **RQ2:** Does a climate for innovation influence employee engagement and, if so, why?

RQ3: Does a climate for innovation influence job stress and, if so, why?

## Focus Area: Climate for Inclusion

**RQ4:** Does a climate for inclusion influence job satisfaction and, if so, why? **RQ5:** Does a climate for inclusion influence employee engagement and, if so, why?

RQ6: Does a climate for inclusion influence job stress and, if so, why?

**RQ7:** Do a climate for innovation and a climate for inclusion influence each other and, if so, why?

# 6.3 Study Two: Analysis

Chapter 4 (see section 4.5) outlined the methodology designed to address the research questions for research study two. This section presents the findings related to each research question. As described in the introduction of this chapter, qualitative expert interviews were utilised to further explain the relationships found in study one. Therefore, the main research questions of study two had to be addressed within interview questionnaire. The link between the research questions RQ1 - 7 and the interview questions is shown in Table 6.1.

Focus Area	RQ	Interview Question				
	RQ1: Does a climate for innovation	Overall, do you think a climate for innovation has an impact on your job satisfaction?				
	why?	Could you give me an example? Why do you think it impacted you in such a way?				
Climate for Innovation	RQ2: Does a climate for innovation	Do you think a climate for innovation has an impact on your engagement/motivation?				
	so, why?	Interview QuestionOverall, do you think a climate for innovation has ar impact on your job satisfaction?Could you give me an example? Why do you think i impacted you in such a way?Do you think a climate for innovation has an impact on your engagement/motivation?Could you give me an example? Why do you think i impacted you in such a way?Do you think a climate for innovation has an impact on your stress levels at work?Could you give me an example? Why do you think i impacted you in such a way?Do you think a climate for innovation has an impact on your stress levels at work?Could you give me an example? Why do you think i impacted you in such a way?Overall, do you think a climate for inclusion has an 				
	RO3: Does a climate for innovation	Do you think a climate for innovation has an impact on your stress levels at work?				
	influence job stress and, if so, why?	Could you give me an example? Why do you think it impacted you in such a way?				
Climate for Inclusion	RQ4: Does a climate for inclusion	Overall, do you think a climate for inclusion has an impact on your job satisfaction?				
	why?	impact on your job satisfaction? Could you give me an example? Why do you think impacted you in such a way?				
	RQ5: Does a climate for inclusion	Do you think a climate for inclusion has an impact on your engagement/motivation?				
	so, why?	Could you give me an example? Why do you think it impacted you in such a way?				
	RO6: Does a climate for inclusion	Do you think a climate for inclusion has an impact on your stress levels at work?				
	influence job stress and, if so, why?	Could you give me an example as well? Why do you think it impacted you in such a way?				
	RQ7: Do a climate for innovation and a	Do you think that innovation and inclusion are linked?				
Link Inclusion and Innovation	climate for inclusion influence each other and, if so, why?	Do you think inclusion has an impact on innovation?				
		Do you think innovation has an impact on inclusion				

Table 6.1: Link between research questions and interview questions

# 6.3.1 Climate for Innovation

This section examines the findings with a focus on the effect of climate for innovation on a number of outcomes. The results are separated according to three different research questions which concentrate on job satisfaction, employee engagement and job stress. As employee engagement and job stress were considered prior to the overall impact on job satisfaction, RQ2 and RQ3 are addressed before RQ1.

# 6.3.1.1 Climate for Innovation and Employee Engagement

As mentioned in the introduction of this chapter, the research questions build on the previous research study. The results of study one showed that climate for innovation has a strong significant correlation with employee engagement. For this reason, the following research question (RQ2) aims to find out more about the reasons for this strong relationship:

# RQ2: Does a climate for innovation influence employee engagement and, if so, why?

Overwhelmingly, all participants believed that the existence of a climate for innovation has a positive effect on employee engagement, reinforcing the results of study one. The thematic analysis identified three main themes that emerged from the discussions. Figure 6.2 shows an overview of the results, which will be discussed in more detail.



Figure 6.2: Factors for the influence of climate for innovation on employee engagement

# Freedom to innovate

The first overarching theme identifying why an innovation climate has an impact on employee engagement is the freedom to try out something new: the freedom to innovate. This freedom motivated employees to choose their own path and try out novel approaches. They did not want anyone in authority dictating what to do and preferred not to be stifled by rules telling them how to develop a new product or process. They identified that having goals is useful for guiding them, but they want to determine for themselves how they achieve these goals. This feeling of freedom and self-determination in turn led to a higher motivation for their work. Three key subthemes combined to contribute to this sense of freedom: *feeling trusted, able to speak up* and *feeling empowered*.

*Feeling trusted.* The trust shown by participants' managers or colleagues was important to them, particularly when they worked in an environment with a lot of freedom. This trust gave them support for the upcoming innovative challenges and also reassurance that they were able to handle the situation their way. This endorsement provided them with the motivation to face uncertainties. This theme is evident in the following quotes:

"[I am more engaged] since I have a lot of things which I am responsible for and where I have full freedom to do them." (01)

"Yes [I feel more engaged], because I do not really like when managers tell me what to do. So if I can be autonomous and if I have ideas that I think are good to try, to be open to try it and take risks, I think that motivates me." (04)

"Well, because basically you are trusted to do what needs to be done and you are not being dictated [to], in terms of what you need to do and things like that." (02)

"Because at some point it is nice to feel that you are listened [to] and that people have trust in you." (04)

Able to speak up. Another point related to trust is being able to speak up. Especially in difficult times, it was important to participants that they have confidence in their manager and colleagues to address problems and to give feedback. They explained that especially in large companies, employees are often afraid to raise negative issues because they do not want to endanger their career within the company. However, in a constantly changing, innovative working environment, the chance to try something new and to be permitted to fail without fear of negative outcomes was important for the participants. They felt that problems must be addressed openly in order to learn from mistakes. This requires a high level of trust and is valued by the employees, who reported a positive effect on their motivation; for example:

"So when you bring in new ideas, and even if you do not know it will work, if you can try it out and maybe, okay, maybe you will fail and the idea is not a good one, but if you have trust from your colleagues and managers and, also, you have feedback from them because they are interested in what you are saying, then that is motivating." (04)

*Feeling empowered.* Another influencing factor was empowerment, which is closely linked to trust. The participants explained that feeling empowered by their manager, so that they are able to be innovative independently, was important for them. They claimed that the possibility to make their own decisions to drive new ideas forward was essential. However, this requires not only strong trust in the employee but also a certain amount of relinquishing control by the managers. Traditionally, managers have been responsible for decision-making and directing their employees as a result of their position of power and control. However, the interviewees identified that the process of passing on responsibility was an important behaviour in order to engage employees in their work. They explained

that they wanted this responsibility and that they felt valued and motivated to take the accountability:

"It is very nice to show that you are empowering people to come out with an idea and then being able to work on that idea and implement that idea. So it is very engaging and very motivating." (03)

"I would say the main trigger was maybe kind of empowerment, which I felt. So I did not feel that somebody over my level decided how we would go. There was a goal at the end and I really liked that [the] goal was fixed. So we knew the direction ... But still, how we would reach this goal was very, very open and there were all levels and people from different departments involved ... I really like it. Maybe that was the main thing that engaged me the most." (11)

# Exploring, creating and implementing something new

The second overarching theme was exploring, creating and implementing something new. All of the participants saw this subtheme as another key factor of employee engagement. The fact that they had the opportunity to think of something completely new and to explore their ideas in different ways gave them the motivation to use their own initiative to develop and implement innovative ideas, processes and relationships. The following two subthemes contribute to this innovative process: *creativity* and *part of something new*.

*Creativity*. The participants said that creating something new by drawing on their creativity had a positive influence on their engagement with their work. They have been able to challenge the status quo and to move out of their comfort zone. They have been able to think on their own, to search and to look for something new. This promoted the participants' creativity and led to ideas about which they were passionate. The work task became their hobby—their personal work of art. Using their own creativity turned the work into something personal and had a very strong influence on engagement. The participants were then more willing to dedicate time because they enjoyed working on their innovative ideas, for example:

"It is really exciting to think, 'Okay, we have a new idea. We want to work on it; and we can start it." (06)

"So, obviously, when you are able to use yourself, to determine what you can do, the scope that you can finish a certain thing, and then obviously you will feel more engaged." (02)

Thinking up something new is already a process that was exciting for the employees and fostered their *creativity*, but turning the innovative idea into reality awakened enormous intrinsic motivation. The employees wanted to see whether their idea worked and were willing to invest time and effort to see their new ideas become reality, as illustrated in the following quotes:

"...something that I can touch and make it tangible and that I influenced that idea. I guess that is where the engagement part comes. I do not know, that is just me. I get engaged by that." (03)

"...almost like an artist creates a bowl out of clay ... and you paint it, and you put it in the kiln, and then you put it out and it is there. I think there is a reward to see that it is complete." (05)

*Part of something new.* In today's work environment, usually employees do not work completely alone. For this reason, new processes or products are mainly developed in teams. Thus, an innovative climate also has a strong social component. Employees have a new idea and try to champion it as a team. The participants explained that this group constellation and the common goal create strong cohesion and team engagement:

"You can see how engaged they were, how empowered they felt, how motivated they felt, that they were part of that team; and coming out and developing ideas with all of us, and then at the end of the day, seeing it implemented." (03)

The participants highlighted that employees, alone or as part of a team, were more engaged when they were part of the whole innovation process to come up with something new, and then to develop and implement the idea into the everyday work environment. The participants felt that they could be a part of something new and watch how their own creation developed; they enjoyed bringing something new to life.

# Value creation

In addition to the fact that it is important for employees to have the freedom to develop and implement something new, is that they also cared about whether the innovation had value for them, the team or the company. It contributed to their motivation if the innovation also brought added value. This focus on value is a noteworthy finding; it shows that innovation is not just about developing something but is also about social significance. Participants received esteem and recognition from their working environment for their innovative projects. They were pleased that they could create value for others. This feedback had a decisive effect on the engagement, for example:

"Personally, I am also kind of getting motivation by seeing others being impacted by that idea." (07)

"I am engaged because I can bring in my own ideas into the company's success." (12)

In summary, it can be said that the participants had a clear idea of why a climate of innovation had a positive effect on their work engagement. The three key themes are shown in Table 6.2, together with an overview of how often these answers occurred.

	r												
Themes						Partic	cipant	s					
	01	02	03	04	05	06	07	08	09	10	11	12	13
Freedom to innovate	~	√	✓	√	√	√	√	√		√	√	√	✓
Exploring, creating, implementing	~	~	✓	✓	✓	√	✓	✓	✓	✓	√	√	$\checkmark$
Value creation		~					✓			✓		✓	✓

Table 6.2: Factors for the impact of climate for innovation on employee engagement

It is apparent that employees are primarily looking for the freedom, self-determination and creativity that will enable them to implement new ideas. This enables them to identify with their task and see their own personal contribution. This not only enhances their self-esteem throughout the company's social structure, but also gives them intrinsic engagement to continually work hard for the company. This finding fits very well with the results of study one and provides insight into the strong statistical relationship between climate for innovation and employee engagement.

# 6.3.1.2 Climate for Innovation and Job Stress

Even though a climate for innovation contributed to work engagement, the results of study one also showed that climate for innovation has a positive significant correlation with job stress. For this reason, the following research question (RQ3) aimed to find out more about the reasons for this relationship:

# *RQ3:* Does a climate for innovation influence job stress and, if so, why?

Figure 6.3 illustrates the key themes and subthemes associated with this research question.



Figure 6.3: Factors for the influence of climate for innovation on job stress

Most of the participants believed that the existence of a climate for innovation could increase job stress. This does not fit with the results of study one, in which it was shown that a climate of innovation had a negative significant correlation with job stress. However, as already described in the limitations of study one, only time management was queried within the job stress scale and other types of stress were not measured. For this reason, a broader interpretation of stress was explored in study two. The thematic analysis showed that there were two main themes that emerged from the discussions. First, time strains and, second, emotional strains had an effect on job stress.

## Time Strain

The first overarching theme which was found was time strain, which has three contributing subthemes: *innovation takes time, no guidelines and time plan,* and *on top of the daily work.* 

*Innovation takes time*. Many participants who worked in an innovative climate enjoyed working on these new topics, but they also explained that innovation often takes a lot of time:

"If you really want to continuously improve and innovate, it takes time. So we are not forced to do it; we are more encouraged and sometimes it is good to take time to do something and then during the following year, you will save one month. But for punctual tasks, it might increase the stress level ... It is on the top [of daily work]." (04)

*No guidelines and time plan.* Because everything is new and employees do not know exactly how the new process or product works, they take longer and have to try out different ways of doing things. The participants explained that working in an innovative climate often means leaving their comfort zone and embarking on new experiences. As a result, they often had to learn something new, which cost them extra time, for example:

"...when you are in an area of innovation and when you are innovating things, it is more stressful than when you are, compared to a routine working area, when you are in your comfort zone". (01)

"Innovation has always to do something without getting out of your comfort zone ... when I come to a new area, it is always, uhm, a bit stressful; because you have to find your new way. You have to understand a lot of new things. You have to engage, and this is more timeconsuming." (13)

In addition, participants explained that projects must always be set with certain time targets but, especially in an innovative new environment, milestones are difficult to define. It is often unclear how long the project will last. This uncertainty makes innovative projects difficult to plan, which carries the danger that employees will quickly come under time pressure when the milestones are miscalculated. Therefore, innovative projects are often associated with uncertainty and risk, which could have an effect on the time strains experienced by employees. For example:

"I feel stressed when things are not, uhm, when I do not have a clear target; when I have pressure from upper management, without a clear path." (09)

*On the top of daily work.* Beyond the time pressure associated with uncertainty of duration, time pressure is also created because these innovative activities often have to be undertaken parallel to day-to-day business. Participants explained that these projects are enjoyable and they are motivated to work on them, but often there were no resources available and the participants developed the innovation on top of their usual workload. This situation was reported to increase the time strain felt by the participants. Innovative projects could be exhausting for the employees because, although they were intrinsically motivated, they felt they had no time to do the project. The result was that they tweaked the additional work into their daily business and tried to do everything in parallel. This could work well over a

certain period of time, but this overloading is not healthy for the employees in the long term, as explained by the following participants:

"I think we have the right people capable of executing but I do not think that we necessarily create an environment where they have time to execute. They usually are added on top of their current plate. And it makes it hard and stressful for the employee to have to deal with; you know, being passionate and trying to execute their ideas but at the same time trying to complete the same tasks that they have to do. So making time is problematic." (09)

"So I already had this feeling that sometimes you have to, in your mind, to decide, 'Do I want to be innovative and spend my time on doing great things and have the opportunity to do it?' ... there is still the daily business that you have to deal with. Sometimes it is a little bit hard for me to combining both thoughts." (11)

"How can I work on a very good idea if my work plate is so full, that I live from day-today to complete all the tasks that I have?" (12)

Even though innovative projects can be stressful in terms of time pressures, some participants said that this stress serves as an additional motivation for them. They explained that they need some stress to perform. Some of the participants said it does not do them any good if they have too little to do; for example:

"I need to be stressed a bit to be motivated [laughs]. I mean, if I am not stressed and I do not have too much work to do, then yeah, I am not motivated. So if I am a bit stressed, it is okay ... a bit of stress is good motivator, for me." (04)

# Emotional Strain

In addition to time stress, some participants reported that an innovative climate can have an effect on their emotional stress level. Four subthemes were identified which contribute to participants' emotional stress reactions: *overwhelming, uncertainty, no management support* and *forced innovation*.

*Overwhelming*. As already described, there is no exact path to follow within innovative projects. The participants had to find their own way and develop their own approach to the innovation being undertaken. This could be overwhelming at the beginning and lead to increased emotional stress, as illustrated in the following two quotes:
"It can be overwhelming if you do not work in a team that thinks similarly and helps you out with it." (07)

"That is maybe a little bit of a mixture; because, of course, yeah, I feel engaged; but [it] could also be overwhelming." (11)

*Uncertainty.* The emotional stress has a lot to do with the fact that those involved were worried about the uncertainty. It is often not easy to move out of a comfort zone and into a new, insecure and unfamiliar environment. This uncertainty made the participants very cautious and it was difficult for them to switch off because they had to think about this innovative project constantly:

"You are stressed because it is so much to handle; that your brain is constantly working, sometimes even at night." (08)

Uncertainty also means the possibility of failure. However, failure is not necessarily negative because new knowledge has been gained about why certain things do not work. However, the participants explained that, within a company, fear often plays a part and it is felt that failure endangers one's career and damages one's reputation. For this reason, employees often think that failure has negative implications for them, which could have an effect on their emotional strain level. The participants claimed that when they went into an area with a lot of uncertainty, they were afraid they might fail, as illustrated in the following quotes:

"I think it is time-connected in terms of how much time you have to execute. It could have [an] emotional impact on your own reputation, that you did not achieve this and you failed." (06)

"We are getting pressure from our senior management that 'this needs to happen', but they do not necessarily tell us how. And then they put a deadline in front of us and that creates a lot of stress that you might not be able to reach that deadline." (09)

*No management sponsorship.* As reported earlier, a new innovative project can be very engaging and intrinsically motivating. Participants reported that they often had new ideas, but that they were prevented from implementing these by their manager. Manager pushback was reported to put a strain on employees; they not only become demotivated but also lose their appreciation of themselves, which could have a strong effect on their emotional stress level. Some participants explained that they were frustrated and angry that their new ideas were always stopped and that they were not allowed to try them out:

"We tried to kind of come up with new ways of working again and again and new ideas; and we were oftentimes just not heard, and we had sponsors that had a pre-primed or precalibrated kind of way ... we have two/three weeks reprieve to come [up] with something new and then present it to the sponsors—get shut down, reset." (07)

"[I was frustrated because they said] 'No, you do not have the bandwidth. I know you are interested but you cannot be considered for this opportunity. '" (07)

*Forced innovation.* Finally, innovation has a strong impact on employee engagement because employees can take the initiative and build a personal connection to their work tasks. However, forced innovation can have a negative impact on stress levels. Some participants reported that they had been frustrated by undertaking innovative projects in which they saw no added value, for example:

"When I am told to do things that I do not see [as] value-adding. Of course, I do not have to add each and everything but, for me, this is also part of our company structure, to question things that I do not see that make sense for me. And to be forced to do things that does not make sense for me, also has maybe [an] impact on my emotional stress level." (11)

The subtheme forced innovation can even lead to innovation itself being forced. Participants reported that sometimes the company had goals that every employee must have a new innovative idea. This forced innovation put pressure on the employees, which makes it even more difficult to be inspired with innovative ideas. As one participant explained:

"Some years ago, we had a goal where 'each employee needs to have a cost saving idea'. To me, it is absolutely nonsense; does not make sense to give this pressure to everyone. This has an impact on the stress level and it has nothing to do with innovation." (12)

In sum, it can be said that some participants felt that a climate of innovation could create some stress in the form of time and emotional stress. A summary of the key overarching themes are shown in Table 6.3 together with an indication of the distribution of answers.

Thomas	Participants												
	01	02	03	04	05	06	07	08	09	10	11	12	13
Time strain	•			✓	✓	✓	✓		✓		✓	✓	
Emotional strain			√			√	✓		✓	✓	✓	√	√

 Table 6.3: Factors for the impact of climate for innovation on job stress

The interviews showed that despite the statistical relationships in study one, innovation can increase employees' time and emotional strain level through, for example, uncertainty, parallel work on the top of other roles or no management support. However, the answers were mixed and the impact on the stress level seemed very individual for each participant—some even stated that, for them, there is no connection between climate for innovation and job stress.

# 6.3.1.3 Climate for Innovation and Job Satisfaction

The results of study one showed that climate for innovation has a positive correlation with job satisfaction. For this reason, the following research question (RQ1) aims to check and to find out more about the reasons for this weak relationship:

# RQ1: Does a climate for innovation influence job satisfaction and, if so, why?

The results from study two indicated that the link between innovation and job satisfaction could be grouped in two overarching themes, as shown in Figure 6.4. The results for job satisfaction were similar to the results for employee engagement. Therefore, some of the themes are identical (discussed in more detail in section 6.4).



Figure 6.4: Factors for the influence of climate for innovation on job satisfaction

The participants believed that the existence of a climate for innovation has a positive effect on job satisfaction; indeed, all of them believed this to be the case. Even though they felt this link existed, it was much harder for them to articulate reasons for this link. This complements the results of study one, in which it was shown that a climate of innovation influences job satisfaction through the mediating effect of employee engagement. However, analysis shows that there were two main themes that emerged from the discussions explaining why climate for innovation influences job satisfaction. First, the chance to explore, to create and to implement something new in the workplace gave participants a feeling of satisfaction and, second, creating value for the business also led to feelings of satisfaction. These themes are discussed in more detail below.

## Exploring, creating and implementing something new

For half of the participants, exploring, creating and implementing something new was seen as a key reason for job satisfaction. It is particularly important to mention that involvement in the entire process from their own idea to the final implementation ensured higher satisfaction. Four subthemes contribute to the main theme of exploring, creating and implementing something new: *own creativity, being part of something new, allowing variety in the job* and *personal development*. *Own creativity*. The process starts with the fact that they had the opportunity to think of something completely new and to explore their tasks in different ways. They explained that the opportunity to discover makes them feel satisfied:

"[I feel satisfied], because ... I am free to work the way I want and I am free to design things the way I want." (01)

"...the fact that I can do whatever I think is good to try, it is really something bringing satisfaction". (06)

The participants were more satisfied when they had control over creating something that was their conception. In this process, the act of creating played a crucial role. They said that creating something new using their own creativity had a positive influence on their feelings about their work. Therefore, they felt a positive energy from seeing their own ideas become reality.

*Being part of something new.* On an overall level, being involved in the entire innovative process, from identifying something new, then developing it and implementing it into the everyday work environment satisfies them; for example:

"I think it is a good satisfaction and makes people feel good because they were part of that initial idea and seeing that idea. I see a lot of happy faces [laughs]." (03)

*Allow variety in the job.* The third subtheme showed that a climate for innovation not only promoted participants' creative development but also gave them variation in their working environment. They described that always trying something new and having variety in their work activities was important to them, otherwise they lost the joy of working; for example:

"Personally, I get bored if I keep doing the same thing, over and over again. So, for me, innovating, trying new things is a must. For me, it is a job requirement that I am doing something different and making things better, trying new things." (10)

*Personal development*. When participants had the chance to proactively go into a new area of work that they have not encountered before, they were excited and found new personal development opportunities to broaden their perspective, as illustrated in the following comment:

"I think innovation helps people think out of the box; develop yourself a little bit better, so that you are not constantly in the same cycle of doing the same thing all the time." (13)

# Improving something

For nearly half of the participants the opportunity to create value by improving something was one key element contributing to their job satisfaction. The chance to contribute to improving technologies, processes, or relationships gave them more satisfaction with their job. When they had the chance to look back and to see what they had achieved and improved they felt a sense of satisfaction; for example:

"I mean, if you see that something is not working well and you bring the idea to fix it and it is working; yeah, of course, it is a nice satisfaction to see that you bring an improvement to the process." (04)

The participants enjoyed analysing their work environment and trying to find ways to improve it. The chance to improve something was valuable for them and it brought them joy to look back afterwards and see the actual result. This aligns very closely together with the aforementioned themes; the combination of having innovative new ideas, developing them, implementing them and thus improving areas of work brought participants' satisfaction. The participants were pleased to see how products or work processes were improved. They claimed that happiness comes through a study of improvement and this improvement process makes them even more satisfied than earning a lot of money. Not only was the achievement at the end important, so too was the challenge to take the path of improvement. They felt satisfaction during the progression and the execution process. Seeing this improvement gave them some kind of confirmation of success and appreciation of colleagues and leaders, which naturally led to a higher overall job satisfaction, as explained in the following quote:

"...I really like to think how I can improve things and make it better and it's really for me something exciting ... It is really something bringing, like, satisfaction in the morning, when I see I can make a difference". (06)

In sum, it can be said that most of the participants believed that a climate of innovation could have a positive effect on their job satisfaction. The overarching themes are shown in Table 6.4 together with an overview of the distribution of answers.

Table 6.4: Factors for the impact of climate for innovation on job satisfaction

Themes	Participants												
	01	02	03	04	05	06	07	08	09	10	11	12	13
Exploring, creating, implementing	~		√		✓	✓	√			✓			
Improving something		✓		✓		✓		✓	✓		✓	✓	$\checkmark$

The interviews showed that participants who have the chance to explore, to create and to implement something new were more satisfied with their job. In particular, having control over creating something fostered their creativity and had a positive influence on the feelings about their work. In combination with the process of creating and implementing something new, the chance to improve something was another factor which gave them joy. The opportunity to improve their daily work gave them confirmation of success and appreciation of colleagues and leaders, which in turn led to a higher overall job satisfaction. As mentioned at the beginning of this section, the results for job satisfaction were similar to the results for employee engagement. This link is discussed in more detail in section 6.4 (Study Two: Discussion).

## 6.3.2 Climate for Inclusion

This section examines the findings with a focus on the effect of climate for inclusion. The results are split into the three different research questions which concentrate separately on job satisfaction, employee engagement and job stress.

### 6.3.2.1 Climate for Inclusion and Employee Engagement

As mentioned in the introduction of this chapter, the research questions in study two build on the previous research study. The results of study one showed that climate for inclusion has a significant positive correlation with employee engagement. For this reason, the following research question (RQ5) aims to find out more information about this relationship:

RQ5: Does a climate for inclusion influence employee engagement and, if so, why?

Figure 6.5 provides an overview of the themes and subthemes identified in relation to RQ5.



Figure 6.5: Factors for the influence of climate for inclusion on employee engagement

Overall, most of the participants believed that an inclusive climate could increase employee engagement. The thematic analysis showed that there were two main themes that emerged from the discussions: first, an inclusive team spirit; and, second, equality and esteem. These two overarching themes are described in more detail in the next sections.

## Inclusive team spirit

Most participants explained that an inclusive team spirit is important for them to be more engaged with their work. They explained that it is essential that employees respect and trust each other and should feel included and safe. This increases the sense of togetherness and engagement with work. The thematic analysis identified three subthemes which contribute to an inclusive team spirit: *feeling included and respected, trust* and *feeling safe*.

*Feeling included and respected.* A good team spirit was reported to result when everyone felt included in the team and respected each other. This group behaviour had a positive effect on employee engagement. The participants said that they were more motivated when everyone around them was motivated, for example:

"Going to work is more than just to work on my tasks. I really like to have an environment where I feel that people are taking care of each other. For me, it's very important to feel included; but I would also say that for me it is important to have people around me that feel engaged and included." (11)

"I would say that I feel more motivated when I am included. When I am excluded, I would say, 'Why should I engage? Why should I put all my effort here? Why should I put my energy here, in the work, when it is not considered or not respected or when no-one cares about it?" (13)

*Trust.* It was important for the participants to have a welcoming place that offered them a sense of trust and security. In particular, when problems arose and changes were imminent, to have colleagues in whom they could trust was important. In addition, the positive trusting team spirit helped more introverted people to get fully involved and to connect in their work. The trust theme is illustrated in the quotes below:

"You feel included if you are able to create trust in your team." (08)

"I think, for me, it is really important to have a good team spirit. I am quite shy when I do not know people. So if I am not included from the beginning, then it is really hard for me to speak up, for example." (04)

*Feeling safe.* The participants also explained that feeling safe in the team is important for good team spirit; they need their team as a safe haven and a place of retreat. Even when it came to decision-making, it was important for participants to have their team as backup. The chance to rely on their team and to survive even harder times together motivated them. This cohesion and the positive team environment had a positive effect on their engagement:

"For example, you made a decision that at the end maybe was not the best decision. They still help you to do the best for the group. And I think this having—maybe again it is a safety thing—but having this in mind, of course, helps you to do your best." (11)

In regards to a safe and inclusive team spirit, managers play a major role as they implement, control and secure a work spirit. They act as role models and should demonstrate inclusive behaviours. The participants explained that a manager with inclusive behaviours helps them to connect more with their team and work tasks. They were able to create an inclusive team spirit which fostered their engaged:

"If the leader does not take [the] time to include you, then I do not take interest into the topic. So then it is hard to work on it, to be engaged." (04)

# Equality and esteem

A further decisive point for employee motivation in combination with an inclusive climate was equality and esteem. This means that employees are able to express their opinions openly within the team with equal and valued feeling. The following two subthemes show further interacting factors towards equality and esteem: *able to speak up* and *voices are heard*.

Able to speak up. If all colleagues feel the same respect and trust, the impression will be given that topics can be addressed more openly which leads to employees being more motivated to participate. In particular, when employees felt equal and respected, they felt they could offer suggestions for improvement or feedback. Otherwise employees were frightened and would not raise or address issues. The participants indicated that the opportunity to speak up had a positive effect on their engagement, as illustrated in the following quote:

"I think 'speak up' also has a very direct relationship to engagement; so people will feel more motivated and more engaged." (08)

*Voices are heard.* An inclusive environment helped the participants to express their personal opinions and to address topics in a targeted manner, but particularly important to them was that they were also heard—by management as well as colleagues. Participants explained that esteem and equality in listening to their opinions was important for them. The chance to participate in decision-making—regardless of whether the decision is in line with their opinion—was essential. By being involved they felt they understood why the decision was made and they could provide more support afterwards:

"For me, inclusion is 'hearing the different voices/opinion', before you make the decision and explain why. But that is not the same as driving towards a consensus in the decision." (10)

At a time when significant change is taking place within a company, many decisions are made that are expected to be accepted and followed by employees. Some participants reported that they could commit much more to the decision if the decision-making process had been transparent and open to different perspectives. This showed that, especially in times of change, employees could become more engaged when they were involved and their voices were heard:

"I think making sure that your voice is heard, making sure that you are respected, making sure that you have equal access to resources, will be a clear indicator [...] that it will lead

to better engagement from the people. If I am heard and if my voice matters if I am treated fairly, obviously I would feel definitely more engaged in my job." (02)

In summary, it can be said that the participants had strong opinions about why a climate of inclusion had a positive effect on their work engagement. The two overarching themes are shown again in Table 6.5, together with an overview of the distribution of answers.

Themes	Participants													
	01	02	03	04	05	06	07	08	09	10	11	12	13	
Inclusive team spirit	~		✓	√	~		√	✓	√		✓	✓		
Equality and esteem	~	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	

Table 6.5: Factors for the impact of climate for inclusion on job satisfaction

Study two identified that participants want to feel safe, trusted and included in their teams with a good team spirit; they want to be able to offer their opinions, which should then also be heard. This enables them to identify with their teams and work tasks. An inclusive climate enables them to feel as though they are an equal and esteemed constituent of the company's overall structure and gives them an intrinsic motivation to continue to work for the company. This finding fits with the results of study one, and provides new information on the background of the moderate statistical relationship between climate for inclusion and employee engagement.

# 6.3.2.2 Climate for Inclusion and Job Stress

The results of study one showed that climate for inclusion has a significant negative correlation with job stress. For this reason, the following research question (RQ6) aims to find out more about the reasons for this relationship:

## RQ6: Does a climate for inclusion influence job stress and, if so, why?

Figure 6.6 outlines the themes and subthemes associated with RQ6.



Figure 6.6: Factors for the influence of climate for inclusion on job stress

Participant interviews highlighted that a non-existent climate for inclusion can lead to increased job stress. This is consistent with the results of study one, where it was shown that inclusion had a negative effect on job stress. All participants reported that inclusion had an effect on their job stress level, driven particularly by emotional stains; however, they described different reasons for feeling these strains. They explained that emotional strains were mainly related to *frustration* and *anger*.

## Emotional strains (frustration and anger)

All participants reported that they experience feelings of emotional stress if they are not included in their workplace. These emotional strains show themselves through frustration and anger, and result in questioning one's own value to the company. Four subthemes help to explain these emotional strains in more detail: *exclusion, not being heard, no collaboration,* and *lack of respect and fairness.* 

*Exclusion.* When participants were not properly included in work teams, work processes or decisions, they asked themselves the question, "Am I actually important to this company?" This self-doubt led to disinterest and frustration; for example:

"I think when you are excluded, you really can feel that you are not part of a community. And I think you feel somehow lonely. You feel like an outsider. Your opinion is not important. I think that this is influencing your self-conscious. And maybe you do not feel that your personality/expertise has no/little value for the company. And it means that you, yourself, feel not valuable for the company and maybe also personally." (13)

This self-doubt can even lead to a situation where those involved feel so uncomfortable that they look for another job or change companies. This factor is a noteworthy insight for companies—that exclusion could lead not only to movement within the organisation but also to the loss of valuable knowledge:

"[Yes inclusion has an impact on my emotional stress level] ... I want to be included. I want to bring ideas. I want to be included in the group and I want to feel that I am important for the company, as tiny as my impact is on the whole organisation. I think everyone is important. For me, personally, if I were excluded, I would look for another job." (13)

Some participants also said that they had not only suffered from self-doubt but had become so angry that they could no longer carry out their work properly, for example:

[A non-inclusive climate] makes me furious, first of all, and having to do some anger management on the spot ... because then you wonder why you are working so hard if people are not including you ... I was coming here, over there to help them, and 'if they do not want my help, if they do not include me, because either I am a woman or I have a global function' ... So it does create a stress because—particularly if you are not included—I guess, my personality will automatically fall back to, 'Why am I not included? Why do not they think that I am important for that decision or that work? Am I not important?' And then you start self-doubting yourself. So I think that creates a lot of emotional stress." (09)

*Not being heard*. Another situation that caused emotional strain was the feeling that their opinions were not heard and they felt unfairly treated, which caused frustration. Participants wanted to be heard in their work environment, as illustrated in the following comment:

"A huge amount of frustration that people face at work and that increases people's stress level is that their voices do not matter; they are not heard, or they feel that they do not have, you know, they are not fairly treated." (02)

*No collaboration*. Furthermore, it was important to participants that colleagues communicate well with each other and collaborate. Taking the time to establish and maintain connections to other employees and to work together on tasks or projects was important to the participants. They want to be fully included and valued in the social fabric of the company. If this is not the case, they said that exclusion induces frustration:

"A reason why you are stressed, because you are not included; you cannot find the connection to people. You are, you know, people blocking and there is no really collaboration." (08)

"If I do not have a collaborative and inclusive environment, I cannot do my job. And wrapping all that stuff together is very frustrating." (09)

*Lack of respect and fairness*. In order to make this collaborative environment possible, the participants explained that an environment in which colleagues respect each other and treat each other fairly was important to them. They all pointed out that a lack of respect and fairness led to strong emotional stress. This was mainly due to the fact that this type of behaviour is taken personally within the work environment, and therefore has an even greater impact on emotional stress, for example:

... I am taking it [being excluded] personal because I am not being included. I am not being respected." (03)

"That would be the stress ... hanging around with people you do not really want to hang around with because they are ignorant [laughs]." (01)

The following two examples show that non-inclusive behaviour within projects can lead to strong emotional stress:

"I hate when things are unfair. My feeling was, 'We are excluded because now we have less resources' ... So you feel excluded; it is always them getting new projects ... It is really mental stress and keeping my mind busy on things and I cannot focus on my work because I am always thinking ... it is keeping your mind busy all day, so you are not delivering because of this feeling. So, yeah, it is purely stress from the mind." (06) "We worked on this project and we wanted to implement two changes to the process, to the new site. And there was the technical product team in the US [United States] where they discussed our proposals, and at one point it was decided by the technical project lead that the meeting to discuss this should be set up for Friday 10 pm European time, and this was increasing my stress level because they cannot do this—that is not fair. So this was an exclusion of complete European colleagues. It was an exclusion of all the SMEs [small and medium-sized enterprises] working on this project and, yes, this increased my stress level. I was very angry." (12)

In sum, the participants had a clear opinion on why a non-existent climate of inclusion increased their emotional job stress. Table 6.6 shows an overview of the distribution of answers for this theme.

Themes Emotional Strain Frustration &	Participants													
	01	02	03	04	05	06	07	08	09	10	11	12	13	
Emotional Strain														
Frustration &	$\checkmark$													
Anger														

Table 6.6: Factors for the impact of climate for inclusion on job satisfaction

Study two found that being included, heard and valued in the team were important to the participants. A lack of an inclusive climate can lead to emotional job strains in the form of frustration and anger. Participants explained that their self-esteem decreased, which led to self-doubt and insecurity. They lost trust in themselves, became frustrated and no longer performed at their best. Furthermore, the results indicated that working in a respectful and fair environment, where employees collaborate and are free to express their opinions and are heard, was also important. When this environment was absent, employees tended to become frustrated and angry. Furthermore, participants explained that open communication and collaboration are important to them. They want to be fully included and valued within their organisation. If this is not the case, they said that exclusion induces frustration and anger.

# 6.3.2.3 Climate for Inclusion and Job Satisfaction

The results of study one showed that climate for inclusion has a negative correlation with job satisfaction. For this reason, the following research question (RQ4) aims to explore the reasons for this relationship:

Figure 6.7 illustrates the key theme associated with this research question.



Figure 6.7: Factor for the influence of climate for inclusion on job satisfaction

In comparison to engagement and stress, only a few participants reported that an inclusive climate had a direct impact on their work satisfaction. This fits well with the results of study one, where only a very weak statistical link could be found. Nevertheless, some participants suggested that they felt an inclusive environment affected their job satisfaction. They reported that the opportunity to be authentic was essential for their job satisfaction in combination with an inclusive climate.

The participants who did see a link between climate for inclusion and job satisfaction explained that the opportunity to be authentic gives them a positive feeling and makes them feel positive about going to work every day. They said that they enjoy being accepted as they are being respected as individuals. For example:

"[I am more satisfied because] I am able to be in an environment where I can be my authentic self; like, I can be who I am because I am included. Do not have to pretend to be something else that I cannot be or the ideal version of what a leader should be ... This is where I want to go—I can be my best." (02) "I would rather say that having an inclusive environment is more important for me, personally, because I feel that this helps me much more to feel satisfied because I feel like having an environment where people let my opinion be first, that I have the opportunity to tell what I think, and people care about it." (11)

In sum, just a few participants felt that a climate of inclusion could have a positive effect on their job satisfaction. Table 6.7 provides an overview of the distribution of answers for this theme.

Table 6.7: Factor for the impact of climate for inclusion on job satisfaction

Themes		Participants												
	01	02	03	04	05	06	07	08	09	10	11	12	13	
Allows being authentic		✓		~							✓	✓		

Study two showed that some employees who felt there was a climate for inclusion, and therefore had the chance to be natural and authentic, were more satisfied with their job. They explained that if they did not have to pretend and were accepted as they are, they felt fulfilled in their job.

# 6.3.3 Link Between Climate for Inclusion and Climate for Innovation

Since both climates and their effects on engagement, stress and satisfaction were explored with this study, it is important to bring both topics together. This section examines the findings with a focus on the possible link between climate for innovation and climate for inclusion.

Therefore, the following research question (RQ7) aims to find out more about the relationship between climate for innovation and climate for inclusion:

*RQ7:* Do a climate for innovation and a climate for inclusion influence each other and, if so, why?

This question was not tested specifically in study one but was pursued in study two to shed more light on these two important concepts in combination. Figure 6.8 outlines the key themes impacting this research question.



Figure 6.8: Factors for the link between climate for innovation and climate for inclusion

All participants agreed that an inclusive climate has a positive influence on innovation. The main reasons were that different perspectives and a safe environment with a culture allowing them to speak up led to a culture of innovation. For some, the relationship was two-way. They said that an innovation climate promotes collaboration between teams, and the search for different perspectives was a strong factor for inclusive working environments. Each of these relationships is explored in more detail below.

# Effect of inclusion on innovation

*Different perspectives*. The participants explained that an inclusive working environment brings different perspectives together. They further stated that different perspectives play an important role in promoting innovation, and increase the probability that new ideas will emerge and that processes and products can be further developed:

"So 'innovation' is a very broad thing, but it is linked for me, in terms that different people have different ideas. And if you get different people together and you are able to hear them and respect them, and learn from them, then you are at the same time creating [an] innovative environment." (01)

*Speak up with new ideas*. Furthermore, the participants mentioned that a climate for inclusion promotes not only different people working together, bringing different perspectives, but also that they are free to express their own opinions. This so-called "speak-up culture" was a strong factor for an innovative climate, as illustrated in the following comment:

"I think innovation and inclusion are linked; because you need everybody available in order to contribute to the idea. And I need everyone to speak up, what is on their mind. It might not be leading to an immediate outcome but it will influence the others, and then might also lead the idea into another direction." (07)

*Feeling safe and free to innovate.* The participants felt safe in their teams due to an inclusive working atmosphere and they could try out new ideas without fear of failure. They explained that it is precisely this feeling of freedom that frees the mind and allows new innovative ideas to emerge; for example:

"So giving the freedom, giving the latitude and giving the environment where different people can say different things. So innovation is a space where you feel safe to do things and to experiment with different things, without the fear [of] the repercussions." (02) "... if you feel included, if you feel trust, again, speak up and feel free to bring new ideas, you are free to develop new ideas; so this will lead to innovation". (08)

Some even went so far as to say that an inclusive working environment is the basis for an innovation climate. They made it clear that companies need inclusion to innovate:

"So if you have inclusion, innovation is going to come naturally. So that is the way I see it. Inclusion is the foundation for innovation." (03)

"I think inclusion is a basis in order to get more innovation happening." (07)

# Effect of innovation on inclusion

With regard to the effect of innovation on inclusion, the point was made that innovation rarely comes from one person alone. In order to develop and implement new ideas, different perspectives are necessary. As a result, some participants were convinced that innovation can also have a strong positive effect on inclusion.

*Reaching out for different perspectives.* Innovative working groups are looking for new perspectives and involve other colleagues. This promotes a collaborative, inclusive work climate, as indicated in the following quotes:

"I think a climate for innovation requires different perspectives; just requires this crossfunctional fuel. You are not able to decide that on your own and just from your experience and your functional perspective. To a certain extent, it will force the inclusion because you are forced to go to other people; you are forced to look for different ways ..." (08)

"If you want new ideas, go to another field or try to include other people in the conversation; share your problem statement and then the ideas are going to come up." (09)

*Foster collaboration.* This search for new perspectives strengthens the general collaboration between teams, departments and even different companies. Since good collaboration is a big part of an inclusive work culture, an innovative climate could facilitate this inclusion:

"The first step is being inclusive; because you reach out to different opinions; you reach out to different point of views ... If you do not do it, then your innovation will be realised maybe in one part but others will not accept it." (11) Overall, it was felt that innovation and inclusion can influence each other in different directions. Some participants explained that both climates have positive effects in both directions; for example:

"I think it is going both ways because of this reason; if you build a team with different areas of expertise, different culture, you will be more innovative because you have different point of views." (06)

In sum, all participants had an opinion on why a climate of inclusion and a climate for innovation are linked. Table 6.8 shows an overview of the distribution of answers regarding the link between the two climates.

Themes	Participants												
	01	02	03	04	05	06	07	08	09	10	11	12	13
Inclusion has an impact on Innovation	~	✓	~	~	~	~	√	~	√	~	~	√	✓
Innovation has an impact on Inclusion				✓		✓		~	√	~	~		

Table 6.8: Link between climate for innovation and climate for inclusion

The results of study two showed that there are different reasons why innovative and inclusive environments influence each other. All participants were of the opinion that inclusion can be a main factor for innovation. Nevertheless, some participants reported that innovation can also have a positive impact on inclusion. This relationship provided employees with the opportunity to work together in a safe, free and trust-filled working environment, enabling them to openly communicate their different perspectives and opinions.

# 6.4 Study Two: Discussion

The second research study built on the first study, which set out to explore the effects of climate for inclusion and innovation (as job demands and resources) through both the independent psychological pathways identified in JD-R theory. The overall results of study two provided new insights into the reasons for the statistical relationships found in study one. The qualitative approach provided a deeper understanding of key factors in relationships between the constructs. This helped to refine and explain the statistical results. The results from both studies in combination are discussed in Chapter 7. The next section presents an overview of the results from study two, discussing them in more detail and linking them to the literature.

### 6.4.1 Climate for Innovation

The next sections discuss the results related to climate for innovation. Figure 6.9 gives an overview of the findings from study two regarding climate for innovation. In general, most of the participants had a good understanding of how an innovative climate affects their engagement, stress and satisfaction at work.



Figure 6.9: Overview of the key factors associated with climate for innovation

As the second study was based directly on study one, the interviews focused on the possible effects of an innovative climate on employee engagement, job stress and job satisfaction. Each link between these constructs was explored, and themes were identified that help to explain the reasons for the statistical relationship identified in study one (see Figure 6.9). In general, it can be said that the relationship between climate for innovation and employee engagement had the strongest resonance compared to job stress and job satisfaction. This shows that an innovative culture has a strong engaging effect on those involved, which is closely aligned with the results of study one. The next sections discuss each pathway in regards to climate for innovation separately.

### 6.4.1.1 Climate for Innovation and Employee Engagement

One part of the qualitative study was to find out more about the background of the relationship between climate for innovation and employee engagement, and therefore to address the research question RQ2:

# RQ2: Does a climate for innovation influence employee engagement and, if so, why?

The results showed that climate for innovation positively influences employee engagement, identifying three key themes which are key factors involving more employee engagement. The topics included: *freedom to innovate*; *chance to explore, to create and to implement something new* in the workplace; and the chance of *value creation*. Since the effects of an innovation culture on employees are still relatively unclear, these results could offer answers to the question RQ2.

The first overarching theme for more employee engagement in combination with a climate for innovation was the *freedom to innovate*. This result indicates that employees want the freedom to decide about work activities within a certain framework. This finding supports the work of Bakker et al. (2014), which also shows that self-initiated effort contributes to achieving goals and leads to increased positive affect on work engagement; employees do not want everything to be prescribed but want to decide for themselves which path is best for them. In particular, when employees are involved with innovative projects, the path is often not clear and freedom motivates employees to find their own solutions. The results show that managers can build this sense of freedom for an innovative environment through trust and empowerment. A qualitative study by Marvel et al. (2007) also showed that the opportunity to participate in innovative, challenging projects results in more motivation and enthusiasm. The results of this research support Marvel et al.'s (2007) findings, but they also indicate that just the opportunity to participate is not enough.

Employees want the freedom to be innovative. Therefore, in order to use this freedom, they need trust and empowerment to make their own decisions. Judge et al. (1997) describe successful innovation as chaos within guidelines; in other words, top management prescribes a set of strategic goals but allows employees freedom within the context of these goals. Management should also believe in employees and encourage them to be more innovative by allowing them freedom—by empowering them instead of controlling them (Judge et al., 1997). The participants reported that when their managers allowed them the freedom to make decisions within their innovative projects, they were more engaged and motivated. Bhatnagar (2012) showed that employee empowerment is a powerful predictor for work engagement and this research shows that climate for innovation can be seen as fundamental for more empowerment. In sum, these findings illustrate that leaders within an innovative culture should give their employees responsibility and trust to strengthen their motivation and engagement for their work.

The second overarching theme shows that the sense of accomplishment from *exploring*, creating and implementing something new by exercising creativity has a positive influence on employee engagement. Bakker et al. (2014), and very recently Gawke et al. (2017a), have shown that organisational climate for innovation promotes commitment and vigour because it contributes to the personal achievement of goals. The results of the current study extend the findings of Bakker et al. and Gawke et al., showing that employees feel a strong engagement working in an innovative climate because they are proud of their innovative achievements. The participants created these innovations with their own knowledge and expertise, which made their work personal and something about which to be passionate. This personal connection led participants to dedicate more time to their work because they enjoyed working on their own innovative ideas. Sundaray (2011) notes the desire for employees to be flexible, innovative and willing to contribute beyond their normal tasks. This also implies that engaged employees are enthusiastic about their work and will often be fully immersed in their job. In sum, it can be said that employees find it exciting to develop new products or processes with their own knowledge and creativity. The resulting personal connection gives them more intrinsic motivation for their task. Therefore, this research indicates that exploring, creating and implementing something new by exercising creativity is an additional influence in creating an innovative climate that positively influences employee engagement.

The third and last overarching theme—*value creation*—identified that employees were motivated when they could see the benefits of their innovation. This finding shows that it is not just about developing something new but also about the impact and value it has for the employees or company. The value of the innovative projects gave employees esteem and recognition in their working environment. They were pleased that they could create

value for others. This feedback had a decisive effect on their employee engagement. A very recent study by Rai et al. (2018) suggests that esteem and recognition positively influence employee engagement. Furthermore, Bakker and Demerouti (2007) state that job resources, such as reward and recognition, positively influence work engagement, and appreciation for work done and efforts increase employees' engagement levels. Armstrong and Murlis (2004) have asserted that recognition is one of the most powerful ways to reward people. Recognition not only reinforces good performance but also evokes the feeling in employees that the organisation values their time, efforts and ingenuity; this feeling enhances their level of engagement (Brown & Katz, 2011). Therefore, previous research has shown that esteem and recognition have a positive effect on employee engagement. Deeper understanding was gained through the current study about why an innovative climate has a positive effect on employees or company brought the employees recognition, which resulted in higher employee engagement.

In conclusion, only a few studies have explored the direct impact of an innovation climate on employee engagement (Bakker et al., 2014; Gawke et al., 2017b). Research is lacking in regards to if and why an innovative corporate climate affects employee engagement. Therefore, the results show that a climate for innovation has a positive influence on employee engagement, and three key themes emerged that contributed to this relationship: *freedom to innovate; chance to explore, to create and to implement something new*; and recognition for *value creation* for the employees or the company.

### 6.4.1.2 Climate for Innovation and Job Stress

The results of study one have shown that an innovation climate has a negative impact on job stress. The aim of the qualitative study was to find out more about the relationship between climate for innovation and job stress, and therefore to address the third research question:

### RQ3: Does a climate for innovation influence job stress and, if so, why?

The results show that climate for innovation influences job stress in different ways, identifying two themes which might have an impact on job stress. In general, it can be said that the results of study two do not directly support study one (discussed in more detail in Chapter 7). However, the results do provide further information about the relationship between a climate for innovation and job stress. With the help of the qualitative research, two themes—*time strain* and *emotional strain*—with subcategories were identified.

The first theme, *time strain*, showed that the time-consuming nature of innovation, few guidelines and limiting resources can increase job stress. Similar topics have been discussed in previous research; for example, it has been argued that innovation and rapid technological change in organisations can have a negative impact on employee wellbeing, such as inducing job stress (González-Romá & Hernández, 2016). As research on innovative cultures is still in its infancy, this research offers new views on the impact of innovation on job stress. The results indicate that innovation in particular takes a lot of time, but employees often do not get the resources they need. The development of innovative products and processes takes a lot of time due to the fact that it is not clear how and whether the innovation works. Especially in the case of improving old processes with incremental innovation (Wojan, Crown, & Rupasingha, 2018), at the beginning employees have to invest time to try out different ways of doing things in order to see a profit afterwards. Every small improvement also means change for employees, for which they need a certain amount of time to get accustomed to the new processes-especially in the early stages. Therefore, this research provides new insights about time strains connected with innovative projects which can contribute to incremental innovation research (Oduro & Nyarku, 2018; Rupietta & Backes-Gellner, 2019).

In addition, time strains will rise even more when employees have to do all this in parallel to their daily business. This might quickly lead to overload and exhaustion. This can negatively influence their wellbeing and performance (Bakker et al., 2014), as exhausted employees may no longer be able to perform core tasks well. Gawke et al. (2017a) explain that employees' intrapreneurial behaviour requires additional energy, time and resources

that do not directly contribute to formal work goals. Innovative behaviours often require employees to go the extra mile to meet job requirements and the additional challenges associated with innovative tasks (Birkinshaw, 1997) which leads to more time pressure (Schaufeli & Bakker, 2004). The research by Bakker et al. (2014) and Gawke et al. was primarily statistical in scope, and the findings of this qualitative study were able to provide deeper insights into the background of these relationships. It can be seen that employees can quickly feel *time strains* because they often have to perform innovation activities on the top of their job. Therefore, companies that focus on implementing an innovative culture should take care about employee time and resource management to help employees reduce time strains.

In contrast to feeling more negative job stress in the form of time strains, some participants reported that they need a certain amount of time pressure to successfully perform in their projects. They don't experience the time stress as negative, especially with innovative projects, because they enjoy the chance to be innovative and to push this innovation forward. Similar to this finding, King et al. (2007) reported that organisational climate for innovation alleviated the negative effects of work demands on organisational performance in health-care organisations. They showed that employees who work in an innovative climate feel less time stress. The current research provides possible reasons for why innovation climates can have differing effects on employees in combination with stress. It seems that employees feel stress differently-some even need "eustress" to work efficiently (Branson, Turnbull, Dry, & Palmer, 2018). This could be related to the person's personality; some can handle or even desire time pressure more than others. The term "eustress" is used for a positive cognitive response to stress that is healthy (Ganster, 2009). As described by Rizwan et al. (2014), employees can feel overloaded or underloaded in their job role, but how strongly they feel time strain in their innovative projects might depend on where their personal midline is between both workloads. This phenomenon was taken up with the help of the Yerkes-Dodson Law. This law describes that depending on a certain work task, a certain degree of stress leads employees to a better work result and motivation (Diamond, Campbell, Park, Halonen, & Zoladz, 2007). However, if this optimum stress level is exceeded, it can lead to demotivation and worse performance (Diamond et al., 2007). Therefore, it can be said that an innovative climate can have a negative as well as positive impact on job stress because the felt time strains might be different from person to person and from task to task.

The second theme states that employees can feel *emotional strains* in an innovative climate. These *emotional strains* are manifested in excessive demands, feelings of insecurity, fear of failure and forced innovation without management support. This study showed that employees felt emotional stress because they did not know exactly how the innovation would develop and whether it would be successful. This can cause anxiety, especially for people who attach great importance to security and consistency. Clancy and Stone (2005) showed that entrepreneurial projects often have to be discontinued because they miss their targets, and this causes negative reactions among employees (Shepherd et al., 2011). As a result, employees feel a greater sense of anxiety and worry at work (Schaufeli & Bakker, 2004). The results of study two support the findings of Schaufeli and Bakker (2004) with qualitative findings, and add additional factors such as the specific impact of forced innovation. The results show that sometimes innovation is forced by certain initiatives without supporting employees to undertake such innovation. Since innovative projects are often voluntary, employees can usually judge for themselves whether they wish to pursue these projects. However, if employees who would not normally choose to undertake innovation projects are forced to be innovative, they reported feeling substantial emotional strains. Therefore, the results extend the literature, showing that climate for innovation can have a negative impact on employees in the form of emotional job stress because forced innovation without management support could lead to pressure, anxiety and worry at work.

In sum, the qualitative research study (study two) shows that a climate for innovation can have an impact on employees' stress levels. However, the findings were mixed and the impact on stress levels seems very individual for each participant. This was underlined by the fact that some participants also mentioned that they need an amount of eustress in their work life. Therefore, exploring the research question RQ3 identified a variety of responses that indicate that different factors influence the relationship between climate for innovation and job stress. It seems that innovation can have an effect on job stress because of *time strains* and *emotional strains*, but the effect may differ from person to person.

### 6.4.1.3 Climate for Innovation and Job Satisfaction

The results of study two showed that the existence of a climate for innovation has a positive effect on job satisfaction. Two main themes were found with the help of the qualitative research. First, the *chance to explore, to create and to implement something new* in the workplace and, second, *improving something* for the business led to feelings of satisfaction. Therefore, insights to address the research question RQ1 could be found, which are discussed in more detail below.

### *RQ1:* Does a climate for innovation influence job satisfaction and, if so, why?

The study findings show that employees who have the *chance to explore, to create and to implement something new* were more satisfied with their job. In general, Johnson and

McIntye (1998) showed that an innovative and creative climate positively correlates with employees' job satisfaction. Very recently, Brimhall and Mor Barak (2018) showed that a climate for innovation positively influences job satisfaction. They further state that qualitative research is needed to better understand the reasons for this relationship. This research addressed that gap, showing that control over the creation of something new that has come out of the employee's mind fosters their creativity and has a positive impact on their feelings about their work. It was further outlined that involvement in the entire process from the initial idea to the final implementation ensured higher satisfaction; employees built up a strong personal connection to the project and were motivated to be part of the whole innovative process. In addition, a climate for innovation gives employees variety in their working environment. Hwang and Hopkins (2012) explain that the ability to develop new workplace skills and to embody innovative behaviours could be central for employees' job satisfaction. The results of this study confirm the results of Hwang and Hopkins, highlighting that the opportunity to proactively enter into new areas of work which had never been encountered previously helped employees to find new personal development opportunities.

In combination with the process of creating and implementing something new, the chance to *improve something* was the second main theme which gave participants satisfaction. It was seen as a great achievement when employees were able to implement something new that created value for the company. The opportunity to improve something led to confirmation of success and appreciation of colleagues and leaders, which caused job satisfaction. This fits with the research of Herzberg (2008), which showed that achievement and recognition are factors for higher job satisfaction. As described in the literature review (section 2.6), people who feel valued and recognised are more positive about themselves and feel more satisfaction (Daniels, 1999; Gostick & Elton, 2009; Nelson & Cooper, 2005; Tessema et al., 2014). With the help of this research, it can be seen that an innovative climate can lead to recognition and appreciation because of value creation.

In sum, the results brought a decisive gain in new insights in exploring innovative cultures in combination with job satisfaction. The qualitative study ties in with the recent statistical results of Brimhall and Mor Barak (2018), showing that the *chance to explore, to create, to implement and improve something new,* which fosters creativity, personal development and job task variety, had a positive influence on job satisfaction. Therefore, companies can use an innovative climate not only to increase performance (García-Buades et al., 2015; Hwang & Hopkins, 2015; Karmeni et al., 2017) but also to positively influence satisfaction when employees have the opportunity to go through the entire innovation process, to be creative and to gain recognition by generating a contribution for the company.

If the results of study two are considered as a whole, it becomes apparent that exploring, creating and implementing something new overlaps very strongly with the main theme for employee engagement. This suggests that this theme could influence engagement and job satisfaction together. Research claims that it can be assumed that employee engagement is connected with job satisfaction because employees who are highly engaged are likely also to be more satisfied (Tejpal, 2015). In fact, an optimistic emotional attitude towards work can increase the sense of importance and fascination about the workplace (Tejpal, 2015). Both employee engagement and job satisfaction have an optimistic emotional and cognitive association with the work environment (Schaufeli & Bakker, 2004; Spector, 1998). According to Saks (2006), employee engagement significantly predicts job satisfaction. Further, recently Vorina et al. (2017) and Tejpal (2015) found in their studies that employee engagement is positively related to job satisfaction. In this study, participants often mentioned engagement and satisfaction synonymously, which is another indication that these topics could be very closely linked in employees' minds. Furthermore, it was noticeable that it was more difficult for participants to accurately describe the topics for job satisfaction. It seems that employees believe engagement and satisfaction are very similar; they felt strongly that they are highly motivated in an innovative environment, but it was much more difficult for them to describe the exact reasons for their satisfaction. However, they were aware that working in an innovative culture leads to more satisfaction, suggesting that motivation seems to be the cause. This insight is a new result in scientific research for innovative cultures and gives companies a better understanding of how employees react in intrapreneurial work environments. This result in regards to the findings of study one is discussed in more detail in Chapter 7.

### 6.4.2 Climate for Inclusion

The next sections discuss the results related to climate for inclusion. Figure 6.10 gives an overview of the key findings from study two regarding climate for inclusion. In general, most of the participants had a good understanding of how an innovative climate affects their engagement, stress and satisfaction with their work.



Figure 6.10: Overview of the key factors associated with climate for inclusion

As the second study was based directly on study one, the interviews focused on the possible effects of an inclusive climate on employee engagement, job stress and job satisfaction, and therefore addressed the research questions RQ4–RQ6. Different themes were found that might explain the reasons for the statistical relationship identified in study one (see Figure 6.10). In general, it was noticeable that it was more difficult for participants to talk about the influences of an inclusive work culture in comparison to a climate for innovation. Nevertheless, some key themes were found which are discussed separately in the following sections.

### 6.4.2.1 Climate for Inclusion and Employee Engagement

One aim of the qualitative study was to find out more about the background of the relationship between climate for inclusion and employee engagement, and therefore to address the research question RQ5:

RQ5: Does a climate for inclusion influence employee engagement and, if so, why?

The results show that climate for inclusion positively influences employee engagement, identifying two key themes which can be seen as reasons for more employee engagement. The first theme was *inclusive team spirit* and the second was *equality and esteem*. As already described in Chapter 3, to date, very little research has been conducted on climate for inclusion and its influence on other constructs. Some researchers have started to explore the effects of inclusion on employee engagement and found positive relationships (Chen & Tang, 2018; Downey et al., 2015; Goswami & Kishor, 2018; Mor Barak et al., 2016). However, little has been reported about the reasons for the positive influence on employee engagement. Therefore, the results of this study can offer new insights into the impact of inclusive cultures on employee engagement.

Goswami and Kishor (2018) found that workplace inclusion has a significant positive relationship with employee engagement, but they further state that future research should be conducted to gain more understanding of this relationship. This research helps address this gap with qualitative research, finding reasons for the impact of climate for inclusion on employee engagement. Participants explained that it is important to feel included and safe in a team, with a respectful and trusting culture, which was aggregated in the theme inclusive team spirit. This allowed employees to honestly report their opinions and know that they will be heard by their team or leader. This inclusive work environment gave them a higher engagement with their work activities. Downey et al. (2015) explain that a trustworthy workplace with good working relationships can promote employee engagement. The results of this study are in line with this, showing that support and trust between employees increased the sense of togetherness and engagement with their work. Participants reported needing a place to work that offered them a sense of safety and security. Research by Chen and Tang (2018) also indicates that inclusive behaviours could promote employee engagement. Study two can substantiate this argument, showing that employees want to be heard and valued and to be able to contribute their opinions. This feeling of *equality and esteem* enables them to better identify with their teams and work tasks, which leads to higher engagement. Therefore, this research provides new knowledge of the reasons why an inclusive environment fosters employee engagement. The two identified themes—*inclusive team spirit* and *equality and esteem*—with their subcategories showed possible reasons why an inclusive work culture can have a positive influence on employee engagement and brought further insights to address the research question RQ5.

### 6.4.2.2 Climate for Inclusion and Job Stress

The next focus in this second research study was to find out more about the background of the relationship between climate for inclusion and job stress, and therefore to address the sixth research question:

#### RQ6: Does a climate for inclusion influence job stress and, if so, why?

Since the effects of an inclusive culture on job stress were measured in study one with a focus on time-related stress, this qualitative research study explores the relationship between both constructs from a broader perspective. Therefore, it is a noteworthy result that climate for inclusion did influence job stress, mainly with *emotional strains* in the form of frustration and anger. Participants reported that exclusion, not being heard, no collaboration, no respect and unfairness influenced their stress levels.

In regards to previous research, there is little information available about the direct effects of inclusion on job stress. It can be assumed that an inclusive climate has an effect on job stress because some researchers have stated that inclusion contributes to positive relationships with co-workers, which could help to reduce job stress (Cullen et al., 1985; Drory & Shamir, 1988; Paoline et al., 2006). If an inclusive climate is considered within the JD-R model, the effects on job stress can be argued with the help of the health impairment pathway (Bakker & Demerouti, 2014, 2017). This qualitative study shows that the lack of an inclusive environment might have a direct influence in the form of emotional strains on job stress. As a climate for inclusion was assumed to be a job resource in this research, this is a noteworthy finding because JD-R theory shows that job stress serves especially as a mediator for job demands. The results could indicate that an inclusive climate could take the role of a job demand as well as a job resource in the JD-R model. Bakker et al. (2005) explain that job demands can be emotional demands, such as exclusion or not being valued within different occupational groups, which predict exhaustion and stress.

In general, the study's findings expand our knowledge about the relationship between climate for inclusion and employee engagement, and show that being excluded, not heard and valued in the team can lead to emotional strains in the form of frustration and anger; participants explained that their self-esteem decreased, which led to self-doubt and insecurity. The employees lost trust in themselves, became frustrated and no longer performed as they could. In addition, employees often work in teams to achieve a common goal. A work environment that is not inclusive can lead to employees being biased, hindering each other through disrespect, unreliable behaviour and exclusion. As a result, employees cannot concentrate on their main tasks, are frustrated/angry and feel increased emotional job stress. Since this study has shown that, above all, a non-existent inclusive behaviour induces strong emotional strains, the question arises of whether an intact inclusive climate reduces job stress just as much as a non-existent inclusive environment causes emotional strains. It can be assumed that this is not the case. It seems that employees

react very strongly to behaviours that are not inclusive, but they do not notice them when they are present. The discussion of the effect of inclusion on job satisfaction (section 6.4.2.3) discusses this finding in more detail.

In summary, previous research provides little information about the direct effect of inclusion on job stress which makes the finding of this research an important extension to inclusive climate research. The results of this study show that a climate for inclusion has a positive effect on emotional job stress in the form of frustration and anger because of exclusion, not being heard and respected. In regards to JD-R theory, these findings broaden the view that inclusive cultures can be seen as job resources or job demands. This is further discussed in Chapter 7.

### 6.4.2.3 Climate for Inclusion and Job Satisfaction

Another part of the qualitative study was to find out more about the background of the relationship between climate for inclusion and job satisfaction, therefore addressing research question RQ4:

### RQ4: Does a climate for inclusion influence job satisfaction and, if so, why?

In comparison to employee engagement and job stress, only a few results could be found, indicating that an inclusive climate has a direct impact on job satisfaction. It was shown that participants of study two could not see a direct influence of an inclusive climate on job satisfaction. Previous research suggests that a climate for inclusion might directly positive influence job satisfaction (Brimhall et al., 2016; Nishii, 2013; Shore et al., 2011). Very recently, Brimhall and Mor Barak (2018) showed that increased feelings of work group inclusion are associated directly with increased job satisfaction among individual employees. These results could not be supported with this qualitative research. The limited ability of participants to see job satisfaction as an outcome of an inclusive climate is an additional indication that employee engagement mediates the link between job satisfaction and an inclusive climate. However, some participants were able to describe why an innovative environment affects their job satisfaction; it was all about the possibility of *being authentic* and not having to pretend to be someone else. This result shows that the opportunity to be authentic gives employees a positive feeling and means that they find it more enjoyable to go to work every day.

This result could also be seen from a different perspective. It was difficult for the employees of PharmXO to explain a direct influence of inclusion on satisfaction because an inclusive climate might be seen as hygiene factor. This assumption can be explained by Herzberg's

Motivation–Hygiene Theory (Herzberg, 1998; Herzberg, 2008), which might suggest that a non-inclusive working climate leads to dissatisfaction. So, if inclusive behaviour is not evident amongst employees they feel strong dissatisfaction, but its presence does not necessarily drive satisfaction. Therefore, an intact inclusive climate is an expectation and has no direct positive influence on satisfaction. It can be assumed that many of the employees work in an inclusive work culture in PharmIO and they are therefore not aware of the possible effect that this culture has on job satisfaction. This assumption was intensified in combination with job stress, when the participants deliberately thought about situations where they did not feel inclusive behaviours; they felt strong emotional strains which could lead to dissatisfaction. In sum, study two shows that participants could not see a direct influence of an inclusive climate on job satisfaction. Only one theme, *being authentic*, could be found, which influences employees' job satisfaction in connection with an inclusive climate. The results indicate that a climate for inclusion can be seen as hygiene factor, which is a noteworthy finding. Overall, these results align with study one and are discussed in more detail in Chapter 7.

### 6.4.3 Link of Climate for Innovation and Climate for Inclusion

The second research study was also used to link the two climates to each other and to address research question RQ7. For this reason, the focus was on gaining more insight about a possible relationship between innovative and inclusive climates.

## RQ7: How do a climate for innovation and a climate for inclusion influence each other?

The results show that climate for innovation and climate for inclusion influence each other and all participants could explain reasons for this relationship. The results extend research from Brimhall and Mor Barak (2018), which raised the need for more qualitative research on the combination of innovative and inclusive climates. In particular, the results show that favourable perceptions of work group inclusion are associated with increased team innovation. Nishii (2013) explains that individuals feel more comfortable in sharing their ideas because they feel valued and appreciated for being their true selves in an inclusive environment. Study two found that different perspectives and a safe environment with a strong speak-up culture leads to an improved culture of innovation; it starts with the fact that an inclusive working environment brings different perspectives together. This diversity plays an important role for employees to promote innovation. Different perspectives increase the probability that new ideas will emerge and that processes and products can be further developed. Therefore, this research shows reasons as to why an inclusive culture could promote innovation, leading to higher employee engagement and job satisfaction. The results further add to existing literature (Brimhall & Mor Barak, 2018) that the relationship between the two climates might be bidirectional. Participants stated that an innovation climate promotes collaboration between teams and the search for different perspectives, which could be strong factors for inclusive working environments. Innovation often arises within a diverse team and is then driven forward together. If problems arise in this way, these team members are forced to look for further perspectives to solve the problems. This promotes inclusive behaviour in the form of trust, collaboration and appreciation. Therefore, an innovative climate also helps to build an inclusive culture.

In sum, all participants were of the opinion that inclusion is the main factor for innovation. Nevertheless, some reported that innovation can also have a positive impact on inclusion. Above all, the main factors in the relationship are: the possibility for employees to work together in a safe, free and trustworthy working environment, thus enabling them to openly communicate their different perspectives and opinions.

# 6.5 Study Two: Limitations

Although the second study contributes insights regarding relationships between climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction, the research design contains inherent limitations.

The first limitation of this research study is the single case organisation approach. For the purposes of this research, employees for in-depth interviews were selected from a single division within the pharmaceutical company PharmXO, which presented the opportunity to access employees who work in an innovative and diverse environment. The health-care industry has been recognised as a conservative, highly regulated industry; therefore, the results of this research may be not applicable to other types of organisations. Different organisations with different work practices, environments and cultures may prove to be useful for future comparative research.

The second limitation was that the study did not include all members of the chosen organisation PharmXO-I. It focused on experts in global positions because they were working in an English-speaking, highly diverse environment. Therefore, people who work at the production sites within PharmXO-I were excluded. These employees were not included because it was important for this research to have a diverse work environment foundation. In addition, as employees in production speak French and German on the different sites in Europe, the interviews could not have been conducted in English.
Finally, it is important to reiterate that due to the nature of the qualitative research study, these findings may not be generalisable to other contexts. The findings of study two are relevant to the specific context of this case organisation and the time at which interview data were collected. This does, however, provide a unique insight of a single case of how climate for innovation and climate for inclusion influence employee engagement, job stress and job satisfaction. The results of study two therefore provide important additional information to the current research in the areas of innovation, inclusion and JD-R theory.

#### 6.6 Conclusion

This second research study built on the results of study one, which tested different hypotheses (as reported in Chapter 5). Some of the findings supported the hypotheses, and thus statistical relationships between the individual topics (climate for innovation, climate for inclusion, employee engagement, job stress and job satisfaction) could be shown. However, the first quantitative research study could not provide any information about the reasons for these relationships. For this reason, the aim of this second research study was to fill this gap of knowledge and to answer research questions 1–7.

The results show that employees are more engaged and satisfied with their work tasks when they work in a climate for innovation because it gives them: freedom to innovate; feelings of being trusted and empowered; and the chance to explore, create, implement and improve something (RQ1 and RQ2). In addition, the results show that a climate for innovation can have an impact on employees' stress levels in the form of time and emotional strains. However, the impact on stress levels seems very individualised, which was underlined by the fact that some participants also mentioned that they need an amount of eustress in their work life (RQ3).

The results in terms of an inclusive climate identified that employees want to feel safe, trusted and included in their teams with a good spirit; they want to be able to offer their opinions and want them to be heard. An inclusive climate enables them to feel as though they are equals as well as esteemed constituents of the company, intrinsically motivating them (RQ5). Similar results but in the opposite direction could be found when a climate for inclusion is lacking. Participants explained that a lack of inclusion fosters emotional stress, mainly related to frustration and anger, because of exclusion, no collaboration and unfairness (RQ6). In comparison to employee engagement and job stress, only a few results could be found that an inclusive climate had a direct impact on job satisfaction. Only some participants described that the opportunity to be authentic positively influenced their job satisfaction (RQ4). Finally, it was shown that innovative and inclusive climates influence each other. All participants were of the opinion that inclusion is the main factor for innovation because of the possibility for employees to work together in a safe, free and trustworthy working environment, thus enabling them to openly communicate their different perspectives and opinions (RQ7). The next chapter 7 discusses the results of study one and study two together.

### **CHAPTER 7**

## DISCUSSION AND CONCLUSION

#### 7.1 Introduction

In the previous two chapters, the results of studies one and two were analysed and discussed. This chapter draws the overall findings of both studies together and discusses them in relation to the existing literature. Finally, implications and contributions to theory and practice with future research directions are identified. Figure 7.1 provides an overview of the chapter structure.



Figure 7.1: Outline of Chapter 7 Source: Developed for this research

#### 7.2 Overall Discussion

This section focuses on the key questions to be answered by the research and the contribution this study has made by drawing together employee engagement, job stress, job satisfaction, inclusion and innovation. This research is one of the first studies to investigate all five variables in one study. Therefore, it was able to generate valuable information to extend knowledge about the interrelationships of these different research areas. The next sections discuss the holistic results for each core area (climate for innovation and climate for inclusion) to address the main research question.

#### 7.2.1 Impact of Climate for Innovation on Job Satisfaction

When the research question is considered as a whole, both studies provided informative results.

#### Overarching research question:

## How does a climate for innovation impact job satisfaction though employee engagement and job stress?

Study one showed that climate for innovation has a weak positive direct effect on job satisfaction. This statistical effect was supported by the results of study two, which found that when employees have the *chance to explore*, to create, to implement and to improve something new in the workplace their job satisfaction is increased. In particular, having control over creating something new fostered their creativity and had a positive influence on employees' feelings about their work. In terms of the literature, it was not previously clear how the constructs of innovation, job satisfaction, employee engagement and job stress relate to each other. It has been argued that innovation could have a negative effect on job satisfaction. For example, research has shown that rapid technology change impacts employee wellbeing negatively (González-Romá & Hernández, 2016). Conversely, researchers have suggested that a climate for innovation might have a positive effect on job satisfaction because employees are able to develop new skills, are able to embody innovative behaviours (Hwang & Hopkins, 2012) and experience a greater sense of involvement (Karmeni et al., 2017; Shanker et al., 2017). Shanker et al. (2017) have shown that dynamic opportunities for employees to challenge prior assumptions, reframe problem areas and pursue new ways of doing things can improve overall organisational performance. The recent study by Brimhall and Mor Barak (2018) showed a direct positive relationship between climate for innovation and job satisfaction. This current research cannot directly support this previous research (Brimhall & Mor Barak, 2018; Karmeni et al., 2017; Shanker et al., 2017) as it found only a weak positive direct effect of climate for innovation on job satisfaction. However, the findings by Brimhall and Mor Barak (2018) can be extended with qualitative findings from the current research about the reasons for this relationship.

In study one it was noticeable that the effect of climate for innovation on job satisfaction was weak in comparison to employee engagement and job stress. This fits well with the results of study two, which showed that the employees were less certain about the effects of innovation on job satisfaction, compared to the effect of innovation on employee engagement and job stress. Therefore, the results reinforce that the direct effect of climate for innovation on job satisfaction is limited and that other pathways may more directly impact job satisfaction. This assumption is also reinforced by the motivational pathway (see Chapter 3) of JD-R theory (Bakker & Demerouti, 2017; Xanthopoulou et al., 2007), which indicates that job resources have an impact on job satisfaction through employee engagement as a mediator. In addition, this indication of the motivational pathway is supported by study two, which identified the influencing themes of an innovative climate on employee engagement and job satisfaction overlap. The employees in this study found it difficult to explain the reasons for higher job satisfaction and often described it in connection with higher motivation. Therefore, some similarities could be identified, showing that employee engagement and job satisfaction were closely linked in employees' minds.

These findings corroborate a recent study by Pham-Thai et al. (2018), who found that climate for innovation has a positive effect on job engagement. In addition, Battistelli et al. (2014) note that if employees perceive that their work environment values their creative and innovative efforts and their ideas are sincerely appreciated and accepted, they will be more engaged. Burcharth et al. (2017) maintains that employees are more likely to engage when they have freedom and autonomy because it fosters the perception that they are able to improve and control their work circumstances. The results of this research support these findings and further add that employees are more engaged and satisfied when they work in an innovative climate because it gives them freedom to innovate, a chance to explore, to create and to implement something new, and recognition for value creation. The outcomes from study one fit very well with these results. The statistical analyses showed that climate for innovation has a strong direct positive impact on employee engagement and a low direct impact on job satisfaction. This suggests that employees have a high level of job satisfaction due to an innovative climate, but this is achieved through employee engagement. This assumption can be underlined with the results of study one, which showed that employee engagement acts as a strong mediator between climate for innovation and job satisfaction. Thus, both studies came to the same conclusion,

demonstrating that employees are engaged by innovative projects and therefore are more satisfied with their jobs.

The findings generate valuable information to expand knowledge about the interrelationships between climate for innovation, employee engagement and job satisfaction. The strong role of employee engagement as a mediator between climate of innovation and job satisfaction offers an extension of Brimhall and Mor Barak's (2018) and JD-R theory research (Bakker & Demerouti, 2017). It corroborates the positive effect of an innovative climate on job satisfaction but clearly shows that this is primarily achieved through employees' high motivation. Furthermore, Brimhall and Mor Barak (2018) called for future qualitative studies to help identify the reasons for this relationship. Study two addressed this call, showing that *freedom to innovate*, the *chance to explore, to create, and to implement something new* that *creates value* are major themes which have a positive influence on employee engagement and job satisfaction. Therefore, this research has addressed gaps in the literature, helping to gain more valuable insights into the relationship between climate for innovation, employee engagement and job satisfaction.

The sections above have shown that the effect of a climate for innovation on job satisfaction is mainly through the mediating effect of employee engagement. This research has also dealt with another possible pathway and measured the effect of climate for innovation on job stress based on the health impairment pathway of JD-R theory (Bakker & Demerouti, 2017). The results of study one found no mediation effects of job stress on the relationship between climate for innovation and job satisfaction. Furthermore, study one found a negative direct effect of climate for innovation on job stress, which indicates that employees who work in an innovative climate feel less stress. The results could be explained by the fact that employees have more motivation and enjoyment at work as a result of personal engagement with their innovative task. They are willing to invest a lot of time in this self-driven project. This finding also explains the statistical relationship that employees feel less time stress due to high motivation and engagement. This can be compared to a hobby, where hobbies can be stressful and strenuous but are often not perceived as negative, as hobbies also create a level of enjoyment (Milanesi, 2018). These findings are in direct contrast to other research that has found that intrapreneurial behaviours could increase job stress and lead to lower job satisfaction (Bakker & Demerouti, 2017; Birkinshaw, 1997; Gawke et al., 2017b).

Controversially, the decreasing effect of an innovative climate on job stress was not supported by study two, which found that innovation might increase employees' stress levels due to time stress. However, the impact on stress levels was very individual. Some of the participants explained that an innovative climate increases their job stress because of time strains; others stated that innovation has no effect on their stress level. Some participants even mentioned that they need a certain level of positive stress (eustress) to work efficiently, which further implies that employees feel stress differently. Branson et al. (2018) explain that people experience stress in different ways and that the effect depends heavily on their state of mind. For example, when employees have a positive outlook in regards to an innovative project, it is more likely that they feel eustress in combination with time pressure (Branson et al., 2018). In sum, it seems that a climate for innovation could have an effect on time stress in general, but this may depend on the individual employee and how stress is experienced in an innovative task.

The previous section explained that climate for innovation may have a negative effect on job stress, particularly on time stress. Study two, however, showed that job stress can also be viewed from another perspective—focusing on emotional stress and thus leading to different effects. It was found in study two that a climate for innovation can have a positive effect on emotional stress. This does not fit with the results of study one, but it may be explained by the fact that in the statistical analysis in study one, job stress was only measured with two items. These two items focused on time stress and questioned whether the respondents were able to manage their time due to job demands. For this reason, the emotional perspective of job stress was not considered in study one (see section 5.5). Study two found that employees are worried about uncertainty and are often afraid of failure. Their emotional stress increased, especially when they were forced by management to be innovative with little support. Therefore, it was shown that a climate for innovation can increase emotional stress at work—even when employees feel less time stress. Therefore, when emotional strains are taken into account, the findings show that an innovative climate can increase job stress which supports previous research (Bakker & Demerouti, 2017; Birkinshaw, 1997; Gawke et al., 2017b). Schaufeli et al. (2006) have shown that innovative behaviours often require employees to perform additional work and take risks, which can cause employees to feel a greater sense of anxiety at work.

In summary, the results show that a climate for innovation has a positive effect on employee engagement and job satisfaction. This is supported by the qualitative research, which shows that *freedom to innovate*, the *chance to explore, to create and to implement something new* in the workplace, and the chance of *value creation* have a positive influence on employee engagement. An innovative climate enables employees to be creative, to identify with their task and to see their own personal contribution. This increases employees' self-esteem and enables engagement to work intensively for the company. In addition, it was noticeable that the qualitative answers for employee engagement and job satisfaction are very similar and closely related. This was supported by statistics showing that employee engagement has a strong impact on job satisfaction and serves as a mediator between climate for innovation

and job satisfaction. Therefore, it can be assumed that an innovative climate has a strong motivating and engaging effect on employees, which in turn has a positive effect on job satisfaction.

The effects of climate for innovation on job satisfaction through job stress were mixed, and no correlation between job stress and job satisfaction could be identified; job stress does not appear to play a mediating role between climate for innovation and job satisfaction. The results related mainly to the direct effects of climate for innovation on job stress. It was shown that an innovative climate can, on the one hand, raise *time strains* because of high time consumption with fewer resources, but on the other hand can lower employees' sense of time pressure because of high motivation and engagement which fosters a healthy amount of eustress. It emerged that an innovative climate has an impact on *emotional strains* in the form of frustration, anger and anxieties because of overload, uncertainty and lack of management support.

Finally, this research has shown that an innovative climate has a strong influence on employee engagement, which increases job satisfaction, and a mixed influence on time and emotional job stress, which in turn has only a minor effect on employees' satisfaction.

#### 7.2.2 Impact of Climate for Inclusion on Job Satisfaction

The next sections focus on the core area of climate for inclusion and discuss the results of both research studies, with additional literature to address the main research question:

#### Overarching research question:

# How does a climate for inclusion impact job satisfaction through employee engagement and job stress?

Study one showed that an inclusive climate has a positive but weak direct effect on job satisfaction. Previous research has found that diversity and inclusion leads to higher job satisfaction, organisational commitment and individual wellbeing (Brimhall et al., 2014; Brimhall & Mor Barak, 2018; Mor Barak et al., 2006; Shore et al., 2011). Similarly, Brimhall et al. (2014) and Brimhall and Mor Barak (2018) showed that perceived level of inclusion appears to be a predictor for job satisfaction, and explain that individuals who are different from the majority and who feel excluded will experience lower job satisfaction. Barak and Levin (2002) showed that people who are a minority are more likely to feel excluded, and found that high levels of perceived inclusion were positively related to work outcomes, of which job satisfaction was the most important.

Nevertheless, the current study found that a relationship between climate for inclusion and job satisfaction has mixed results, as only a few instances could be found in study two to indicate that an inclusive climate has a direct impact on job satisfaction. The reason for this could be that employees are already working in an inclusive environment and therefore its existence has no effect on their satisfaction. This assumption would indicate that climate for inclusion might be seen as hygiene factor (Herzberg, 2008), and only causes dissatisfaction when the inclusive environment is lacking. This indicates that an existing inclusive environment has no direct effect on satisfaction. However, some participants were able to describe why an inclusive environment affects their job satisfaction, focusing most of all on the opportunity to be authentic and not having to pretend to be someone else. Overall, these results answered the call of very recent studies that suggest that climate for inclusion needs more exploration in order to fully understand the nature of this construct (Brimhall & Mor Barak, 2018; Randel et al., 2017; Shore et al., 2011; Shore et al., 2017). Therefore, study one and study two support previous research and add information about the relationship between climate for inclusion and job satisfaction.

Since the results indicated that climate for inclusion has a weak direct effect on job satisfaction, it can be assumed that other pathways may lead to job satisfaction. In line with

that assumption, study one found that climate for inclusion has a direct positive effect on employee engagement, and employee engagement has a significant positive mediating effect (for the larger sample size) on the relationship between climate for inclusion and job satisfaction. However, the standardised regressions were very similar for both sample sizes, which suggests that employees who feel included in their work team are more engaged and therefore more satisfied with their work environment. This is supported by the results of study two, which found that employees want to feel safe, trusted and included in their teams. This gives them a feeling of being a valued part of the company for which they want to continuously work. Therefore, both studies came to the same conclusion and demonstrated that employee engagement serves as a positive mediator between climate for inclusion and job satisfaction. This indicates that employees who work in an inclusive climate feel more engagement with their job tasks and are therefore more satisfied.

In regard to previous research, there is less knowledge concerning climate for inclusion and its influence on other constructs. Some researchers have started to explore the effects of inclusion on employee engagement, finding positive relationships (Chen & Tang, 2018; Downey et al., 2015; Goswami & Kishor, 2018; Mor Barak et al., 2016). However, very little has been reported concerning the reasons for the positive influence on employee engagement. Therefore, the findings of this study have generated novel and valuable information to extend knowledge of the inter-relationships between climate for inclusion, employee engagement and job satisfaction. The role of employee engagement as a mediator between climate of innovation and job satisfaction offers an extension of the results of Brimhall and Mor Barak (2018) and JD-R theory research (Bakker & Demerouti, 2017).

Previous discussion gave more insight into the effect of a climate for inclusion on job satisfaction, showing that employee engagement might act as a mediator between both constructs. This research has also dealt with another possible pathway, measuring the effect of climate for inclusion on job stress on the basis of the health impairment pathway of JD-R theory (Bakker & Demerouti, 2017). This indicated that job stress is acting as a mediator between job demands and job satisfaction. It could not be demonstrated in study one that job stress serves as mediator between climate for inclusion and job satisfaction. In addition, the direct effects of study one indicated that an inclusive climate reduces time stress, which indicates that climate for inclusion acts as a job resource. However, study two found that a lack of an inclusion climate for study on the being heard or respected, and perceived unfairness which might be a sign that climate for inclusion acts as a job demand. Furthermore, study one showed that employee engagement has no significant mediation effect on the relationship between climate for inclusion and job satisfaction with the smaller sample size, which also indicates that inclusion acts as a job demand. Since study two has shown that

inclusion above all has an effect on emotional stress, it can be assumed that job stress might play a greater role between inclusion and job satisfaction as it was measured in study one. It could be that this relationship was not found in study one because the job stress items focused only on *time strains* (see section 5.5). Therefore, as described in the discussion of Chapter 6, the results could indicate that an inclusive climate could take the role of a job demand as well as a job resource in the JD-R model. In regards to previous research, little has been conducted on climate for inclusion and its influence on other constructs. Research to date has not explored the mediating effect of job stress on climate for inclusion and job satisfaction. Therefore, the results of this research generate valuable knowledge, and both studies indicate that employees who work in an inclusive climate feel less time and emotional stress which could lead to higher job satisfaction.

In summary, the results showed that a climate for inclusion has a weak positive effect on job satisfaction, indicating that climate for inclusion might be seen as a hygiene factor (Herzberg, 2008). However, it was found that a climate for inclusion had a positive correlation with employee engagement. This was supported by study two, which showed that a climate for inclusion has a positive effect on employee engagement because individuals feel safe, trusted and valued, giving them a sense of equality and high selfesteem. An inclusive climate gives employees the feeling of being a valued part of the company, and gives them a sense of inner motivation. Therefore, both studies showed that climate for inclusion has a positive influence on employee engagement which might lead to higher job satisfaction.

The effects of climate for innovation on job stress were mixed, and no correlation between job stress and job satisfaction could be identified, suggesting that job stress does not play a mediating role between climate for inclusion and job satisfaction. The results related mainly to the direct effects of climate for inclusion on job stress. The qualitative research showed that a climate for inclusion mainly influences emotional job stress in the form of frustration and anger. The main reasons given for this were exclusion, not being heard, no collaboration, no respect and unfairness. Finally, this research showed that an inclusive climate has an influence on employee engagement, which increases job satisfaction, and an influence on emotional job stress which in turn has only a minor effect on job satisfaction.

#### 7.2.3 Link Between Climate for Innovation and Inclusion

Now that both main research questions on each main topic (climate for innovation and climate for inclusion) have been addressed, this section discusses both areas in combination and how these are linked. When the results for climate for innovation and climate for inclusion are compared, it is noticeable that they differ greatly in strength. If the results of study one are considered, then it is apparent that climate for innovation has stronger effects, with both direct and mediating effects on employee engagement, job stress and job satisfaction. The results showed that effects for climate for inclusion could certainly be identified, but were much weaker. The same could be observed in study two, as the participants were able to describe effects of climate for inclusion but were much less unanimous and certain when compared to the answers for climate for innovation; it was more difficult for participants to describe the relationships and the reasons for them. Thus, the results of both studies fit together well and show that a climate for inclusion can have an effect on employee engagement, job stress and job satisfaction, but this is weaker when compared to climate for innovation. This supports the findings of Brimhall and Mor Barak (2018) and offers new insights into how corporate cultures influence employee satisfaction.

In addition, in study two both climates were brought together and further exploration was undertaken to identify if and, if so, how and why these two areas influence each other. The results indicate that an inclusive climate can be a strong factor for innovation because of the possibility for employees to work together in a safe, unrestricted and trustworthy working environment and thus are able to openly communicate their different perspectives and opinions. The results of this research support the very recent findings from Brimhall and Mor Barak (2018), which show that favourable perceptions of work group inclusion are associated with increased work group innovation. The results of this research are in line with this and show that an inclusive culture can promote innovation, leading to higher employee engagement and job satisfaction. This research further contributes to existing knowledge because it has identified reasons for the relationship between climate for innovation and climate for inclusion, such as different perspectives, fostered collaboration or speak-up culture. In addition, it was shown that the relationship between the two climates might be interrelated.

#### 7.3 Implications and Contributions

This thesis conducted two main studies to address the main research question. The results of both studies made a significant contribution to theory and practice, which are discussed in more detail below.

#### 7.3.1 Implications for Theory

In general, this thesis contributes to the current literature by providing insights into how a climate for innovation or inclusion relates to employee engagement, job stress and job satisfaction. In addition, this research contributes to the theoretical development of JD-R theory in two ways. First this research extends previous studies that utilise and explore climate of innovation and inclusion as job resources. Second, this research tested the generalisability of the motivational process and the health impairment process in the context of climates of innovation and inclusion relating to job satisfaction (Bakker & Demerouti, 2014, 2017). Both contributions are discussed in more detail in the next sections.

First, the findings of study one confirm that climate for innovation can be used as a job resource in JD-R theory and add to the evidence regarding the impact of job resources on job satisfaction (Bakker et al., 2004; Bakker & Demerouti, 2007). Furthermore, the results illustrate that climate for innovation and climate for inclusion activate the motivational process pathway within JD-R theory, as employees with sufficient job resources feel efficacious, important to the organisation, optimistic, engaged and satisfied with their work, as shown by Gawke et al. (2017a) and Xanthopoulou et al. (2007). The literature regarding JD-R theory states that resources are psychological, physical, social or organisational factors that: are functional in achieving work goals; buffer job demands; or stimulate personal growth, learning and development (Bakker, 2011; Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Therefore, the strong positive mediating role of employee engagement between climate for innovation and job satisfaction identified by this research is a novel finding and contributes to existing knowledge regarding the role of innovation as a job resource in JD-R theory.

Further, this study tested the health impairment pathway of JD-R theory, which states that job stress can be a mediator between job demands and job satisfaction (Bakker et al., 2003; Bakker et al., 2014; Demerouti et al., 2001). However, this research did not support the mediating role of job stress between climate for innovation and job satisfaction. The qualitative research showed that for employees the health impairment process is individual, and some even appreciate an acceptable level of stress (i.e. eustress) in their work environment. This is a noteworthy finding, as it adds useful information to existing knowledge concerning the role of innovation and inclusion as a job resource or job demand in JD-R theory. Since for both climates job stress did not act as a mediator for job satisfaction, this is another indicator that climates for innovation and inclusion could be seen as job resources within the JD-R model.

It can be stated that climate for inclusion showed mixed results in regards to which role (job demand or job resource) it takes within JD-R theory. JD-R theory shows that job stress serves as a mediator especially for job demands. Study two showed that a lack of climate for inclusion has a direct effect on job stress in the form of emotional strains, which indicates that inclusive climates could also be seen as job demands. This assumption can be underlined by the fact that the mediation effect of climate for inclusion towards job satisfaction in study one was not significant within the smaller sample size, indicating

inclusion might not follow the motivational pathway and instead acts as a job demand. As Bakker et al. (2005) explained, job demands can be emotional demands within different occupational groups which could be induced by a non-inclusive environment, predicting exhaustion and stress. Therefore, this research shows that climate for inclusion could act as a job resource as well as a job demand, and the qualitative research added useful information in regards to the health impairment process of JD-R theory and climate for inclusion, which is a contribution to the development of JD-R theory. In addition, the quantitative and qualitative mixed results generated more rich outcomes compared to the only quantitative JD-R studies carried out to date.

Second, this research tested the core principles of JD-R theory that categories of work characteristics, such as job resources, evoke two relatively independent psychological processes in JD-R theory. Further, the qualitative research provided deeper knowledge about the reasons for the psychological processes in JD-R theory. The results of this research show that employees who have sufficient resources, such as an inclusion or innovation climate, will experience motivation towards their work which leads to employee engagement (Schaufeli & Bakker, 2004). This could be characterised by themes in regards to innovation, such as freedom to innovate, and in regards to inclusion, such as equality and esteem. This research confirms this motivational pathway within JD-R theory and expands previous research results.

#### 7.3.2 Implications for Practice

Typically, government and investors measure corporate success based on financial results (Carter et al., 2011). This research extends earlier findings by highlighting the importance of alternative outcomes, such as job satisfaction (Chung, Jung, & Sohn, 2017; Hauff et al., 2015; Mashi, 2017). This is especially important for companies that have no interest in growth or financial results and that need non-financial criteria upon which to judge their own success. The research findings highlight that job satisfaction could be utilised to measure success. Furthermore, the findings have important implications for managers and business owners, as they show the importance of job resources on outcomes, such as job satisfaction. For example, the chance for employees to work in an innovative and inclusive climate will lead to increases in employee engagement and job satisfaction. Furthermore, managers should be aware that these climates will also have an effect on time stress, which leads to increases/decreases in job satisfaction depending on the individual. Therefore, the results of this research are an important reminder for managers and business owners to be aware of how job resources—in this case a climate that supports innovation and inclusion—can affect employees' workforce motivation, job satisfaction and wellbeing over time. The contributions of both climates are discussed in more below.

In regard to climate for innovation, the results give companies a better understanding of the importance of an innovative climate for their employees. The results demonstrate the influence an innovative climate can have on the workforce in terms of motivation and satisfaction. This highlights to managers that an innovation climate is not only important to increase internal innovation to strengthen their company for future change but also to intrinsically motivate and retain employees. As demonstrated by the findings of study two, managers can gain insight into what is important for their employees' motivation, stress and satisfaction. They can use these insights to strengthen their internal innovative corporate culture.

The results are important particularly for large international companies, as they have sites around the world, with employees from different cultures and who have different mindsets. Therefore, it is important for work teams to have an inclusive culture to develop a positive work climate (Chen & Tang, 2018). This research gives several insights for management and human resource departments to further understand the effect inclusion has on employee engagement, job stress and job satisfaction. The results of this study have shown that an inclusive climate can have a positive effect on employee engagement and job satisfaction, and that a lack of inclusion can lead to job stress. These results show that companies should concentrate on maintaining an inclusive work culture, as a non-inclusive culture could increase employees' emotional stress levels and lead to physical and mental health issues (Fisk & Neville, 2011). Furthermore, lack of an inclusive climate can lead to employees leaving the company because they no longer feel comfortable in their teams and work areas.

Study two of this research showed that an inclusive culture can be exemplified and strengthened by managers in particular. First, managers often decide which people to include in their team. In making this decision, it is important to ensure team members share the team's values and attitudes, including demonstrating an inclusive work culture. Second, the manager of an existing team should exemplify and require inclusive behaviours and act as role model. The manager should ensure that employees in the work environment treat each other with respect, trust and openness, and should ensure that everyone has the same opportunities and is treated fairly. The results of both studies confirm that inclusive management practices help to relieve emotional and time stress, and increase employee engagement and job satisfaction. Therefore, this research gives managers insights into the effects of an inclusive climate and emphasises the importance of strengthening and maintaining an inclusive corporate culture in the future.

Furthermore, this research has shown that a climate for inclusion can have a positive impact on innovation. This result shows that an inclusive environment can not only increase job satisfaction through high employee engagement and low job stress, but it can also lead to more innovation within the company. The results show that the possibility for employees to work together in a safe, free and trustworthy working environment and thus be able to openly communicate their different perspectives and opinions, leads to a higher potential for innovation. This insight illustrates a way that companies can strengthen their internal innovation pipeline from the inside out, as the effects of inclusion and innovation are recursive.

#### 7.4 Limitations and Future Directions

Although the methodology attempted to ensure the findings are reliable, valid and trustworthy, a number of limitations have been identified for both studies (see sections 5.5 and 6.5). Since each limitation also offers an opportunity for further research, the following sections will build on the previously identified limitations to recommend five future research directions.

The first proposed research direction is related to the dependency of this research on a secondary dataset and the job stress scale—comprising two questions, focusing only on time demanding work stress. Reliance on this secondary dataset meant that no emotional stressors could be measured and this omission might have influenced the results (Ganster, 2008). It is possible that the hypotheses regarding the health impairment pathway would have been supported if other forms of stress, such as emotional stress, had been measured. In order to address this limitation, future research could measure the health impairment pathway within JD-R theory with a range of job stress items which cover emotional stressors. Therefore, researchers can focus on examining the effects of other stressors in the workplace that are affected by job resources.

The second future research direction follows on from the first recommendation. In regards to climate for inclusion, study two found that emotional and time-related strains influence employees' stress levels. However, this is only true if climate is perceived as not inclusive, and therefore the conclusion was reached that inclusion acts as a hygiene factor (Herzberg, 2008). Future research could explore to what extent an inclusive climate differs in its strength of influence from a non-inclusive climate. A mixed-method approach would be of particular interest, as the quantitative as well as qualitative results could provide decisive insights into this assumption.

The third proposed research direction relates to the limitation that this research was conducted in one single international health-care organisation with a cross-cultural and cross-functional perspective. Multiple samples from different kinds of organisations from different countries or cultures would provide valuable insights into how other industries and/or cultures perceive these relationships. Previous research has shown that, for example, national cultures can have a strong influence on corporate cultures (Hofstede, 2001; Hofstede, Hofstede, & Minkov, 2010; Trompenaars & Hampden-Turner, 2012), which in turn could influence the effect on the pathways of JD-R theory. Similar points can be made with the organisational culture, as industries such as the health-care industry have been recognised as a conservative, highly regulated industry (Petrova, 2014). Therefore, the results of this research may not be applicable to other types of organisations. Studies of different organisations with different work practices and environments may prove to be useful for future comparative research. In sum, it would be useful to investigate the effects of climate for innovation and climate for inclusion on employee engagement, job stress and job satisfaction in other industries, countries and cultures.

The fourth recommendation is based on the fact that innovation can be divided into two main categories; incremental and radical (Shahin et al., 2017). This research has looked at innovation at a higher level and has not addressed deeper dimensionalisation of the innovation construct. One reason for this was the dependence on the existing data set. However, as described in Chapter 2.2 innovation can be divided into two different areas, and employees could adopt innovative behaviours in the area of incremental as well as radical innovation (Shahin et al., 2017). Future research could focus on whether the type of innovation has an impact on employee engagement, job stress, or job satisfaction. Especially with radical innovation, as the risk factor is much higher, which may lead to employees being under greater emotional stress. However, the potential success is also higher, which could have a positive influence on motivation. Therefore, future research could further dimensionalise innovation and test whether incremental or radical innovation has different effects on the constructs examined in this thesis.

The fifth and last recommendation focuses on the combination of an inclusive and innovative culture and their mutual influence. The second study of this research identified that both corporate cultures for innovation and inclusion can influence each other. This finding gives some preliminary insights into a new potential research area. Since research on inclusive cultures is still in its infancy, the combination of innovation and inclusion offers ample opportunities for further research (Brimhall & Mor Barak, 2018). This last recommendation returns to the original argument in this thesis: that companies are facing a changing world because of global economics, financial crises and climate change (Friedli et al., 2013). This dynamic and turbulent business environment has challenged companies to even survive (Battistelli et al., 2014; Chowhan et al., 2017; Javed et al., 2017; Lauser, 2010) and indicates that companies have to be innovative, diverse and inclusive to be able to offer new products or services in the future (Cassell et al., 2015; Javed et al., 2017; Wan

et al., 2015). Therefore, it is critical to promote innovative and inclusive climates within companies. This research explored the effects of these climates on job satisfaction, but future research could investigate in a broader context how both climates influence each other and how this could be used to increase success indicators, such as performance.

#### 7.5 Conclusion

The overall findings of this research study have been explained and discussed in this chapter. The aim was to discuss the main research questions in combination with existing literature to highlight the areas of convergence and to identify unique contributions.

The results have shown that an innovative climate has a strong influence on employee engagement, which increases job satisfaction. An innovative climate enables employees to be creative, identify with their task and see their own personal contribution. This increases their self-esteem and motivates them to continue working for the company. The effects of climate for innovation on job stress were mixed, and it was shown that an innovative climate can, on the one hand, raise time stress because of high time consumption with fewer resources, but on the other can lower the sense of time pressure because of high motivation and engagement. It emerged that an innovative climate has a unique impact on emotional strains in the form of frustration, anger and anxieties due to overload, uncertainty and no management support. This research has shown that an innovative climate has a strong influence on employee engagement which increases job satisfaction and a mixed influence on time and emotional job stress which in turn has only a minor effect on job satisfaction.

It has been further shown that climate for inclusion has a positive effect on employee engagement due to inclusive behaviours that lead employees to feel safe and valued. An inclusive climate enables employees to identify with their teams, which in turn makes them feel as though they are a valued constituent of the company. It was shown that employee engagement has a strong impact on job satisfaction and serves as mediator between climate for inclusion and job satisfaction. The effects of climate for innovation on job stress were mixed, as a climate for inclusion mainly influences emotional strains in the form of frustration and anger because of exclusion, not being heard, no respect and unfairness. Therefore, this research shows that an inclusive climate has an influence on employee engagement which increases job satisfaction, and an influence on emotional job stress which in turn has only a minor effect on job satisfaction.

At the end of this chapter, implications and contributions showed that this research contributes to the theoretical development of JD-R theory, with deep new insights into innovative and inclusive corporate cultures and their effects on employee engagement, job stress and job satisfaction. These observations can help companies and their managers to sustainably promote and maintain employee wellbeing, motivation and satisfaction, with the help of innovative and inclusive corporate cultures in the future.

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# Appendices

# Appendix A – Study One

Scale	Items	Measurement Scale	
	I can try new things even if they lead to occasional mistakes.	6-point scale ranging from "strongly disagree" to "strongly agree"	
Climate for Innovation	This organisation embraces great ideas no matter where they come from.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	Our work environment supports calculated risks in order to be innovative.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	I am encouraged to seek out innovative and creative solutions to help improve the organisation's performance.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	My co-workers respect my thoughts and feelings.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	It is safe for me to speak up and express my views to my team.	6-point scale ranging from "strongly disagree" to "strongly agree"	
Climate for Inclusion	We have a work environment that is open and accepts individual differences.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	My manager treats people fairly.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	My manager involves me in decisions that affect me.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	It would take a lot to get me to leave this organisation.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	I would recommend this organisation to a friend seeking employment.	-point scale ranging from "strongly disagree" to "strongly agree"	
Employee	This organisation inspires me to do my best work.	6-point scale ranging from "strongly disagree" to "strongly agree"	
Engagement	I rarely think about leaving this organisation to work somewhere ales.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	Given the opportunity, I tell other great things about working here.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	This organisation motivates me to contribute more than is normally required to complete my work.	6-point scale ranging from "strongly disagree" to "strongly agree"	
Job Stress	The intensity of my work is manageable over the longer therm.	6-point scale ranging from "strongly agree" to "strongly disagree"	
	My work-related stress is manageable for me.	6-point scale ranging from "strongly agree" to "strongly disagree"	
	I get a sense of accomplishment from my work.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	I truly enjoy my day-to-day work tasks.	6-point scale ranging from "strongly disagree" to "strongly agree"	
Job Satisfaction	I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments.	6-point scale ranging from "strongly disagree" to "strongly agree"	
	My future career opportunities here look good.	6-point scale ranging from "strongly disagree" to "strongly agree"	

Table A1: Overview of all items used for study one.

# **Results stage one for full sample size**

# **Descriptive statistics for main variables**

Before structural equation modelling can be conducted the scales and items must be investigated for normality and outliers to avoid any biases or error from sampling. As a first step a Kolmogorov-Smirnov Test was conducted and showed a significant p-value for all of the items. However, this test is very sensitive to large sample sizes and can then be significant even with small deviations to normality (Field, 2009). Therefore, the skewness and kurtosis were used as indicator for normality. The indices for acceptable limits were  $\pm 2$  for kurtosis and skewness (Field, 2009; Gravetter & Wallnau, 2014; Trochim & Donnelly, 2008). There were not any major breaches observed for the aggregated variables (see Table A2) and items. Some items exceeded the limits and indicated that the items are not fully normal distributed. In general, it can be said that most items have a negative skew. So the answers are more on the positive direction towards 4 which means "agree". It can be noted that the missing neutral point on a 6-point scale can force more skewness (Leung, 2011). Hair et al. (2009) states that large sample sizes (>200) are sensitive to deviations from normality and no further corrections had to be implemented.

In the next step outliers were investigated. For this research serious outliers were not possible because each item and control variable was collected with a 6-point Likert scale. However, each main variable showed similar means and the same max and min ranges (see Table A2). The highest mean had Inclusion (M = 5.00) followed by Job Satisfaction (M = 4.89) and Engagement (M = 4.84). Each main variable had a minimum value of 1.00 and a maximum value of 6.00, except innovation with lowest variable of 2.00.

Variable label		Range		050/ 01	Skewness		
	M (SD)	Min	Max	95% CL	(SE)	Kuttosis (SE)	
Innovation	4.52 (0.96)	1.00	6.00	[4.52, 4.53]	-0.873 (0.009)	0.965 (0.019)	
Inclusion	4.90 (0.91)	1.00	6.00	[4.89, 4.91]	-1.330 (0.009)	2.195 (0.019)	
Engagement	4.78 (1.00)	1.00	6.00	[4.77, 4.79]	-1.134 (0.009)	1.256 (0.019)	
Job Stress	2.51 (1.18)	1.00	6.00	[2.51, 2.52]	1.005 (0.009)	0.923 (0.019)	
Satisfaction	4.65 (0.88)	1.00	6.00	[4.64, 4.65]	-0.904 (0.009)	0.923 (0.019)	

Table A2: Means, Standard Deviations, Minimum and Maximum Ranges, 95% Confidence Intervals, Skews and Kurtosis for the final variables

*Note*. M = Mean, SD = standard deviation, CI = Confidence Interval

## Multicollinearity

The final items were all correlated to each other and none of the items were found to correlate higher above the cut-off of r = .90. The variables or items should be reasonably correlated to each other but not to the point of extreme multicollinearity or correlations that are greater than .90 (Tabachnick & Fidell 1996). If items do correlate above the cut-off they may be measuring the same construct and therefore can impact on specific analyses, such as factor analysis and structural equation modelling (Coakes & Steed 2003; Kline 1998). The highest correlation measured between the items in this study was .766. With correlations ranging between r = 0.35 and r = 0.6.

Table A3: Pearson Correlation between all used items

Note. All Correlations are significant at the 0.01 level (2-tailed).

	Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	It would take a lot to get me to leave this organisation.																				
2	I would recommend this organisation to a friend seeking employment.	.68																			
3	This organisation inspires me to do my best work.	.63	.68																		
4	I rarely think about leaving this organisation to work somewhere else.	.76	.64	.61																	
5	Given the opportunity, I tell others great things about working here.	.64	.76	.70	.61																
6	This organisation motivates me to contribute more than is normally required to complete my work	.58	.63	.75	.57	.67															
7	My co-workers respect my thoughts and feelings.	.37	.42	.45	.34	.43	.41														
8	It is safe for me to speak up and express my views in my team.	.45	.51	.54	.45	.50	.49	.57													
9	We have a work environment that is open and accepts individual differences.	.46	.53	.55	.43	.52	.50	.65	.62												
10	My manager treats people fairly.	.41	.46	.49	.42	.47	.47	.46	.58	.52											
11	My manager involves me in decisions that affect me.	.43	.46	.50	.43	.50	.48	.43	.57	.50	.71										
12	I get a sense of accomplishment from my work.	.54	.54	.63	.50	.56	.59	.44	.47	.48	.43	.45									
13	I truly enjoy my day-to-day work tasks.	.55	.55	.63	.54	.57	.59	.42	.46	.46	.41	.43	.70								
14	I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments.	.52	.55	.61	.51	.56	.59	.45	.53	.53	.54	.55	.52	.49							
15	My future career opportunities here look good.	.59	.59	.60	.56	.57	.57	.41	.48	.50	.45	.47	.54	.51	.58						
16	The intensity of my work is manageable over the longer term.	41	43	47	43	45	44	31	37	36	35	36	37	44	43	38					
17	My work-related stress is manageable for me.	43	47	50	45	48	46	38	44	43	40	40	42	49	46	40	.71				
18	I can try new things even if they lead to occasional mistakes.	.41	.45	.52	.42	.51	.52	.40	.50	.49	.45	.48	.46	.44	.51	.47	40	43			
19	This organisation embraces great ideas no matter where they come from.	.51	.57	.63	.49	.57	.59	.42	.52	.54	.43	.47	.48	.48	.55	.53	41	43	. 53		
20	Our work environment supports calculated risks in order to be innovative.	.46	.50	.57	.46	.53	.57	.35	.45	.46	.38	.42	.44	.45	.48	.47	42	42	.56	.61	
21	I am encouraged to seek out innovative and creative solutions to help improve the organisation's performance.	.47	.53	.63	.46	.58	.64	.42	.51	.50	.48	.51	.52	.50	.54	.51	40	42	.58	.62	.62

Additionally, a test for collinearity was conducted with using multiple regression analysis. As shown in Table A4 no abnormalities which indicate multicollinearity could be found in the tolerance and VIF statistics (Hair et al., 2009).

	Collinearity Statistics		
	Tolerance	VIF	
On Job Satisfaction			
Innovation	.394	2.537	
Inclusion	.477	2.099	
Engagement	.389	2.571	
Job Stress	.626	1.597	

Table A4: Collinearity Check of the Independent Variables on Dependent Variable Job Satisfaction

# **Exploratory Factor Analysis**

For the following scales an EFA was conducted: innovation (4 items), inclusion (5 items), engagement (6 items), job stress (2 items) and job satisfaction (4 items).

# **Innovation Scale**

A factor analysis was conducted to explore the items for climate of innovation. The four items come from the GEOS 2017 survey. For the EFA a principle-axis factoring (PAF) with oblique rotation (direct oblimin) was used. For the full sample size, the KMO measure was .821 which can be interpreted as a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi^2$  (6) = 114'381.179, *p* <.0001, showing that the correlations between the related items were large enough for PAF.

One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 68.887%. As stated by Hair et al. (2009) a rule of thumb is to retain factors which cumulatively explain 60% of the variance. For this reason, just one factor was extracted. Another indicator for one factor was the Cattell's scree plot (reference) and it showed a clear elbow after the first factor.

The reliability of the scale was then tested. The result  $\alpha = .850$  can be seen as a good internal consistency (Tavakol & Dennick, 2011). The results for the smaller sample sizes are shown in the following Table A5:

		N= 69'549
Labels	Items	Factor Loadings
INNOV1	I can try new things even if they lead to occasional mistakes.	0.712
INNOV2	This organisation embraces great ideas no matter where they come from.	0.764
INNOV3	Our work environment supports calculated risks in order to be innovative.	0.779
INNOV4	I am encouraged to seek out innovative and creative solutions to help improve the organisation's performance.	0.805
	Kaiser-Meyer-Olkin (KMO)	.821
	Bartlett's test of sphericity	χ2 (6) = 114'381.179, p <.0001
	Explained variance	66.887%
	Cronbach's Alpha	$\alpha = .850$

# **Inclusion Scale**

A factor analysis was conducted to explore the items for climate of innovation. The five items come from the GEOS 2017 survey. For the EFA a principle-axis factoring with oblique rotation (direct oblimin) was used. For the full sample size, the KMO measure was .821 which can be interpreted as a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi^2$  (10) = 165'848.578, *p* <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 64.835%. As stated by Hair et al. (2009) a rule of thumb is to retain factors which cumulatively explain 60% of the variance. In combination with the Cattell's scree plot there was a clear elbow after the first factor.

The reliability of the scale was then tested and  $\alpha = .862$  which is good internal consistency (Tavakol & Dennick, 2011). The results for the smaller sample sizes are shown in the following Table A6:

		N= 69'549
Labels	Items	Factor Loadings
INCL1	My co-workers respect my thoughts and feelings.	0.693
INCL2	It is safe for me to speak up and express my views in my team.	0.791
INCL3	We have a work environment that is open and accepts individual differences.	0.763
INCL4	My manager treats people fairly.	0.760
INCL5	My manager involves me in decisions that affect me.	0.736
	Kaiser-Meyer-Olkin (KMO)	.821
	Bartlett's test of sphericity	χ2 (10) = 165'848.578, p <.0001
	Explained variance	64.835%
	Cronbach's Alpha	$\alpha = .862$

#### **Engagement Scale**

A factor analysis was conducted to explore the items for climate of innovation. The six items come from the GEOS 2017 survey. For the EFA a principle-axis factoring with oblique rotation (direct oblimin) was used. For the full sample size, the KMO measure was .884 which can be interpreted as a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi 2$  (15) = 300'198.442, p <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 71.721%. As stated by Hair et al. (2009) a rule of thumb is to retain factors which cumulatively explain 60% of the variance. For this reason, just one factor was extracted and Cattell's scree plot also showed a clear elbow after the first factor.

The reliability of the scale was then tested and  $\alpha = .917$  which is excellent internal consistency (Tavakol & Dennick, 2011). The results for the smaller sample sizes are shown in the following Table A7:

		N= 69'549
Labels	Items	Factor Loadings
ENG1	It would take a lot to get me to leave this organisation.	0.809
ENG2	I would recommend this organisation to a friend seeking employment.	0.838
ENG3	This organisation inspires me to do my best work.	0.831
ENG4	I rarely think about leaving this organisation to work somewhere else.	0.778
ENG5	Given the opportunity, I tell others great things about working here.	0.837
ENG6	This organisation motivates me to contribute more than is normally required to complete my work.	0.783
	Kaiser-Meyer-Olkin (KMO)	.884
	Bartlett's test of sphericity	χ2 (15) = 300'198.442, p <.0001
	Explained variance	71.721%
	Cronbach's Alpha	$\alpha = .917$

Table A7: Results of engagement EFA for full sample size

#### Job Stress Scale

The two items for the job stress scale come from the GEOS 2017 survey. The reliability of the scale for sample size 68,549 was tested and  $\alpha = .827$  which is good internal consistency (Tavakol & Dennick, 2011).

#### **Job Satisfaction**

A factor analysis was conducted to explore the items for climate of innovation. The four items come from the GEOS 2017 survey. For the EFA a principle-axis factoring with oblique rotation (direct oblimin) was used. For the full sample size, the KMO measure was .834 which can be interpreted as a great amount of sampling adequacy (Field, 2005). Bartlett's test of sphericity was found to be significant,  $\chi^2$  (6) = 110'735.969, *p* <.0001, showing that the correlations between the related items were large enough for PAF. One factor was extracted with eigenvalues over 1, explaining a cumulative variance of 66.785%. As stated by Hair et al. (2009) a rule of thumb is to retain factors which cumulatively explain 60% of the variance. Cattell's scree plot showed a clear elbow after the first factor and so one factor was retained.

The reliability of the scale was then tested and  $\alpha = .827$  which can be seen as a good internal consistency (Tavakol & Dennick, 2011). The results for the smaller sample sizes are shown in the following Table A8:

		N=69'549
Labels	Items	Factor Loadings
SATIS1	I get a sense of accomplishment from my work.	0.814
SATIS2	I truly enjoy my day-to-day work tasks.	0.777
SATIS3	I receive appropriate recognition (beyond my pay and benefits) for my contributions and accomplishments.	0.690
SATIS4	My future career opportunities here look good.	0.704
	Kaiser-Meyer-Olkin (KMO)	.769
	Bartlett's test of sphericity	χ2 (6) = 110'735.969, p <.0001
	Explained variance	66.785%
	Cronbach's Alpha	$\alpha = .827$

Table A8: Results of job satisfaction EFA for full sample size

In summary, an exploratory factor analysis was used to confirm the association of the items to each variable. All items for each scale were subjected to principle-axis factoring with oblique rotation (direct oblimin). Each scale and their items had good factor loadings and showed one factor with Eigenvalue greater than one. The reliability of the scales were assessed with the Cronbach's alpha method and showed good reliability for each scale.

# **Confirmatory Factor Analysis**

# **Innovation Scale**

The newest version of SPSS AMOS (version 21) was used to perform a confirmatory factor analysis (CFA) to substantiate the items of the climate for innovation scale (Figure A1).



Figure A1: Climate for Innovation Model One

The standardised path estimates, as shown in Table A9, were above the recommended cutoff of .5 and these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A9 shows the squared multiple correlations and all of these were in the acceptable range.

	N= 68,549				
Items	Standardised estimates	SMC's			
INNO1	.71	.50			
INNO2	.77	.58			
INNO3	.78	.60			
INNO4	.80	.65			

Table A9:	Structure	for the	e innovation	scale
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Note: SMC = squared multiple correlation

Overall the goodness of fit indices, as shown in Table A10, indicated that the data fit the model well with the obtained indices indicating a good model fit (Hair et al., 2009). The value of CMIN/DF was higher as the cut-off which can be ignored because of the very large sample size.

Table A10: Goodness of Fit Indices for innovation scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	114.565	
Comparative Fit Index (CFI)	.998	>.95
Root Mean Square Error of Approximation (RMSEA)	0.040	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.0022	<.05

# **Inclusion Scale**

A confirmatory factor analysis was conducted to substantiate the items of the Climate for Inclusion scale (Figure A2).



Figure A2: Climate for Inclusion Model One

The standardised path estimates, as shown in Table A11, were above the recommended cut-off of .5 and these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A11 shows the squared multiple correlations and all of these were in an acceptable range.

Iterre	N= 68,549				
Tems	Standardised estimates	SMC's			
INCL1	.694	.48			
INCL2	.790	.62			
INCL3	.756	.57			
INCL4	.761	.58			
INCL5	.742	.55			

Note: SMC = squared multiple correlation

Overall the goodness of fit indices, as shown in Table A12, indicated that the data did not fit the model well because none of the obtained goodness of fit indices meeting the cut-off parameters (Hair et al., 2009).

Table A12: Goodness of Fit Indices for inclusion scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	3549.158	
Comparative Fit Index (CFI)	.893	>.95
Root Mean Square Error of Approximation (RMSEA)	.226	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.0621	<.05

As seen in Table A13 a few model issues were identified with modification indices suggesting that the fit of the model could be improved by changing the appropriate path (Hair et al., 2009).

Table A13: Modification Indices for Climate for Inclusion Scale Model One

Modification Indices				
e4	<>	e5	11127.122	.307
e3	<>	e5	2171.796	125
e3	<>	e4	1796.274	110
e1	<>	e5	2580.302	121
e1	<>	e4	2274.229	110
e1	<>	e3	6328.748	.169
e2	<>	e4	238.814	042
e2	<>	e3	331.888	045

Based on the modification indices Incl5 was removed (see Figure A3). The model was run again and the fit indices, as shown in Table A14, indicated that removing the item improved model fit greatly. Table 5.22



Figure A3: Climate for Inclusion Model Two

The standardised path estimates, as shown in Table A14, were above the recommended cut-off of .5 and these loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A14 shows the squared multiple correlations and all of these were in an acceptable range.

Table A14: Structure for the inclusion scale

	N= 68,549	
Items	Standardised estimates	SMC's
INCL1	.75	.57
INCL2	.78	.61
INCL3	.81	.66
INCL5	.66	.44

Note: SMC = squared multiple correlation

The goodness of fit indices CFI and SRMR, as shown in Table A15, indicated that the data fit the model better with the obtained indices indicating a good model fit (Hair et al., 2009). The other two could not meet the cut-offs. It was shown that deleting the item improved the model and any further attempts to reduce the items made no difference to the model or made the model collapse. For this reason, it was decided to take this item set up for the inclusion scale.

Table A15: Goodness of Fit Indices for inclusion scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	1307.585	
Comparative Fit Index (CFI)	.976	>.95
Root Mean Square Error of Approximation (RMSEA)	.137	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.0280	<.05

# **Employee Engagement Scale**

A confirmatory factor analysis was conducted to substantiate the items of the employee engagement scale (Figure A4).



Figure A4: Employee Engagement Scale Model One

The standardised path estimates, as shown in Table A16, were above the recommended cut-off of .5 these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A16 shows the squared multiple correlations and all of these were in an acceptable range.

T.	N= 68,549		
	Standardised estimates	SMC's	
ENG1	.80	.64	
ENG2	.84	.71	
ENG3	.83	.69	
ENG4	.77	.60	
ENG5	.84	.71	
ENG6	.79	.62	

Table A16: Structure for the employee engagement scale

Note: SMC = squared multiple correlation

Overall the goodness of fit indices, as shown in Table A17, indicated that the data did not fit the model well because none of the obtained goodness of fit indices meeting the cut-off parameters (Hair et al., 2009).

Table A17: Goodness of Fit Indices for employee engagement scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	2643.428	
Comparative Fit Index (CFI)	.921	>.95
Root Mean Square Error of Approximation (RMSEA)	.195	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.0679	<.05

As seen in Table A18 a few model issues were identified with modification indices suggesting that the fit of the model could be improved by changing the appropriate path (Hair et al., 2009).

Mod	lification	Indices		
e4	<>	e6	830.260	079
e4	<>	e5	1219.204	081
e3	<>	еб	8043.685	.175
e3	<>	e4	816.941	070
e1	<>	e4	1491.651	090
e1	<>	e5	1119.770	066
e1	<>	e4	13114.433	.334
e1	<>	e3	1102.770	069

Table A18: Modification Indices for Employee Engagement Scale Model One

Based on the modification indices Eng1 and Eng6 were removed (see Figure A5). The model was run again and the fit indices, as shown in Table A20, indicated that removing the item improved model fit greatly.



Figure A5: Employee Engagement Scale Model Two

The standardised path estimates, as shown in Table A19, were above the recommended cut-off of .5 these higher loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A19 shows the squared multiple correlations and all of these were in an acceptable range.

 Table A19: Structure for Employee Engagement Scale

T4	N= 68,549		
Items	Standardised estimates	SMC's	
ENG2	.87	.75	
ENG3	.80	.64	
ENG4	.73	.53	
ENG5	.87	.76	

Note: SMC = squared multiple correlation

All goodness of fit indices, as shown in Table A20, indicated that the data fit the model well with the obtained indices indicating a good model fit (Hair et al., 2009). It was shown that deleting the item improved the model towards good fit. The value of CMIN/DF was higher as the cut-off which can be ignored because of the very large sample size. For this reason, it was decided to take this item set up for the employee engagement scale.

Table A20: Goodness of Fit Indices for Employee Engagement Scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	396.470	
Comparative Fit Index (CFI)	.995	>.95
Root Mean Square Error of Approximation (RMSEA)	.075	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.0118	<.05

#### Stress Scale

The stress scale has just two items. For this reason, the alpha scores were used.

## Job Satisfaction Scale

A confirmatory factor analysis was conducted to substantiate the items of the Job Satisfaction scale (Figure A6).



Figure A6: Job Satisfaction Scale Model

The standardised path estimates (see Table A21) were above the recommended cut-off of .5 and these loadings confirm that the items have good convergent validity (Hair et al., 2009). Additionally, Table A21 shows the squared multiple correlations and all of these were in an acceptable range.

Table A21: Confirmatory Factor Analysis for the Job Satisfaction Scale

Items	Standardised estimates	SMC's
STAIS1	.84	.70
SATIS2	.80	.64
SATIS3	.66	.43
SATIS4	.67	.44

Note: SMC = squared multiple correlation

The goodness of fit indices CFI and SRMR, as shown in Table A22, indicated that the data fit the model with the obtained indices indicating a good model fit (Hair et al., 2009). The other two could not meet the cut-offs. Any further attempts to reduce the items made the model collapse. For this reason, it was decided to take this item set up for the inclusion scale. The generally good model fit of the final path model and the good alpha score of .830 has further strengthened this decision.

 Table A22: Goodness of Fit Indices for Job Satisfaction Scale

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	2971.347	
Comparative Fit Index (CFI)	.956	>.95
Root Mean Square Error of Approximation (RMSEA)	.207	<.0608
Standardised Root Mean Residual Covariance (SRMR)	.048	<.07

# **Common Method Variance**

As shown in Table A23, the Harman's single-factor test showed a probability of common variance with 49% variance but was still below of the cut-off of 50%. In addition, the CLF technique was conducted and showed a common variance of 47% (see Table A24).

Table A23: Harman's Single-Factor Test

Method	variance	Cut-off
Harman's single-factor test	49%	50%
Table A24: Common Latent Factor Technique		
Method	Unstandardised estimates	Common variance
Common latent factor	.69	47%

### **Correlations between scales**

Correlation is a measure of the degree of relatedness of aggregated scales and is checked before the actual path model. It gives an overview of how the variables stand in relation with each other. The correlation analysis was run in SPSS and results are shown in Table A25.

Table A25: Pearson Correlation between aggregates variables

	Method	Innovation	Inclusion	Engagement	Job Stress	Job Satisfaction
Innovation		$\alpha = .850$				
Inclusion	Pearson Correlation	.674 (**)	α = .862			
Engagement	Pearson Correlation	.727 (**)	.661 (**)	$\alpha = .884$		
Job Stress	Pearson Correlation	543 (**)	501 (**)	575 (**)	$\alpha = .852$	
Job Satisfaction	Pearson Correlation	.728 (**)	.802 (**)	.802 (**)	560 (**)	$\alpha = .834$

\*\* = Correlation is significant at the 0.01 level (2-tailed).

 $\alpha = Cronbach's Alpha Score$ 

The results showed that most aggregated variables had a reasonable correlation to each other. This may be due to the fact that the items are not fully normal distributed. In general, it can be said that most items have a negative skew. So the answers are more on the positive direction towards 4 which means "agree". It can be noted that the missing neutral point on a 6-point scale can force more skewness (Leung, 2011). The strongest correlation had innovation and employee engagement with .707 which suggests that the more employees have the opportunity to work in an innovative climate the more engagement and job satisfaction which implies that the more engaged employees are the more satisfaction they will experience. The same can be assumed for inclusion and engagement (correlation of .640).

## Structural Model – Path Model

Structural equation modelling (SEM) is a multivariate statistical analysis technique used to analyse structural relationships. This technique is the combination of factor analysis and multiple regression analysis and serves to analyse the structural relationship between measured variables and latent constructs (Hair et al., 2009). This method is often used because it estimates multiple and interrelated dependencies in a single analysis. The final model (see Figure A7) was built with all variables and two control variables. Climate for innovation (=Inno) and climate for inclusion (=Incl) as independent variables, employee engagement (=Enga) and job stress (=Stres) as mediator variables and job satisfaction (=Satis) as dependent variable. Based on the existing hypotheses, the different variables were connected with directed paths. Additionally, both control variables people responsibility and years of service were included in the model and both were connected two all mediator and dependent variables.



Figure A7: Final path model one

Overall the goodness of fit indices, as shown in Table A26, indicated that the data did not fit the final path model well because none of the obtained goodness of fit indices meeting the cut-off parameters (Hair et al., 2009).

Table A26: Goodness of Fit Indices for overall research model

Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	282.870	
Comparative Fit Index (CFI)	.947	>.95
Root Mean Square Error of Approximation (RMSEA)	.064	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0288	<.07

Therefore, it was decided to delete non-significant paths between control variables and mediator or dependent variables to free up some degree of freedom. As shown in Table A27 the paths between years of service and employee engagement, years of service and job satisfaction, people responsibility and employee engagement were deleted.

Table A27: Standardised regression weights of path model one

Predictor	Outcome	Std. Beta	р	Label
Climate for Innovation	Job Satisfaction	.122	**	
Climate for Inclusion	Job Satisfaction	.217	**	
Climate for Innovation	Employee Engagement	.675	**	
Employee Engagement	Job Satisfaction	.612	**	
Climate for Innovation	Job Stress	490	**	
Job Stress	Job Satisfaction	070	**	
Climate for Inclusion	Employee Engagement	.236	**	
Climate for Inclusion	Job Stress	219	**	
Years of Service	Employee Engagement	.005	ns	Path deleted
Years of Service	Job Stress	.062	**	
Years of Service	Job Satisfaction	.015	**	Path deleted
People Responsibility	Employee Engagement	.002	ns	Path deleted
People Responsibility	Job Stress	049	**	
People Responsibility	Job Satisfaction	021	**	

*Note.* \*\* = p < .001; \* = p < .05; *ns* = not significant

Further on, as seen in Table A28 the modification indices suggested creating an additional path between job stress and employee engagement. For this reason, an additional path between these both variables was created.

Predictor	Outcome			
Employee Engagement	Job Stress	257.751	062	
Job Stress	Employee Engagement	780.963	066	Path was created

The final path model two was adjusted as described above (see Figure A8). The model was run again and the fit indices, as shown in Table 5.32, indicated that deleting non-significant paths and creating one additional path between job stress and employee engagement improved model fit greatly.



Figure A8: Final path model two

All goodness of fit indices, as shown in Table A29, indicated that the data fit the final path model two well with the obtained indices indicating a good model fit (Hair et al., 2009).
Table A29: Goodness of Fit Indices for final path model two

	N= 68,549	
Goodness of Fit Statistics	Value	Cut-off
Chi-Square Minimum (CMIN/DF)	267.070	
Comparative Fit Index (CFI)	.949	>.92
Root Mean Square Error of Approximation (RMSEA)	.062	<.08
Standardised Root Mean Residual Covariance (SRMR)	.0264	<.07

The following figure shows all found significant standardised pathway as an overview. All direct and indirect effects will be explained in the next section in more detail.



Figure A9: Final model significant with standardised pathways Note. \*\* = p <.001

#### **Direct Effects**

Table A30 shows that there were several direct effects between the main variables. Climate for innovation had a significant strong direct effect on employee engagement ( $\beta$  .574, p <.001) this suggests that a climate for innovation increases intrinsic motivation for the work tasks. Employee engagement had a direct significant effect on job satisfaction ( $\beta$  .620, p <.001) indicating that the more a person is motivated for their work the higher their job satisfaction is. Climate for innovation were also found to directly strong positive impact job stress ( $\beta$  -.490, p <.001) indicating that it's better for employees to manage their work stress when they work in an innovative climate. Job stress had no significant direct effect on job satisfaction ( $\beta$  -.042, p <.212). Overall, climate for innovation had a significant direct negative effect on job satisfaction ( $\beta$  -.156, p = <.001). Climate for inclusion had a direct effect on employee engagement ( $\beta$ .156, p <.001) implying that a climate for inclusion leads to more employee engagement. Climate for Inclusion had a weak significant direct effect on job satisfaction ( $\beta$  -.085, p <.007). There was also effects with control variables. People responsible was found to have a direct effect on job stress ( $\beta$  -.168, p <.001), suggesting that that the higher the employees work in the hierarchy the better they can manage their stress level. Further on, it was found that people responsibility has a significant direct effect on job satisfaction ( $\beta$  -.105, p <.001), implying that employee which work higher in the hierarchy feeling less satisfied with their job.

Predictor	Outcome	Std. Beta	р	
Climate for Innovation	Job Satisfaction	.127	**	
Climate for Inclusion	Job Satisfaction	.220	**	
Climate for Innovation	Employee Engagement	.574	**	
Employee Engagement	Job Satisfaction	.620	**	
Climate for Innovation	Job Stress	490	**	
Job Stress	Job Satisfaction	048	**	
Climate for Inclusion	Employee Engagement	.207	**	
Climate for Inclusion	Job Stress	254	**	
Job Stress	Employee Engagement	175	**	
Years of Service	Job Stress	.065	**	
People Responsibility	Job Stress	050	**	
People Responsibility	Job Satisfaction	015	**	

*Note.* \*\* = p < .001; \* = p < .05; *ns* = *not significant* 

### **Indirect Effects**

Table A31 shows that there were several indirect effects with the moderator variables. The variable employee engagement had a strong effect on the relationship between climate for innovation and job satisfaction ( $\beta$  .313, p <.001). Employee engagement showed also a moderator effect for climate for inclusion and job satisfaction ( $\beta$  .109, p <.001). The moderator variable job stress had no significant moderator effect on the relationship between climate for inclusion and job satisfaction ( $\beta$  .018, p <.001) and between climate for inclusion and job satisfaction ( $\beta$  .013, p <.001).

Table A31: Mediation effects of Model Two

*Note.* \*\* = p < .001; *ns* = *not significant*; *Bootstrapping* = 2000; *Bias-corrected confidence intervals* = 90

Parameter	Beta	Lower	Upper	p-Value
Mediator: Employee Engagement				
Climate for Innovation - > Job satisfaction	.313	.302	.325	**
Climate for Inclusion - > Job satisfaction	.109	.101	.116	**
Mediator: Job Stress				
Climate for Innovation - > Job satisfaction	.018	.015	.022	**
Climate for Inclusion - > Job satisfaction	.013	.011	.015	**

# Appendix B – Study Two

# **B 1 Interview Questions**

Thanks for taking time -I am looking forward to talk with you about this topic now. Today is the DD.MM.YY - Interview Nr. X.

#### Introductions

Have you seen the information sheet? Do you have any questions about it? Could you please sign the consent form?

My research is about climate for innovation and inclusion insight organisations. Therefore, this interview has two different parts – The first one is focusing on Innovation and the second one on Inclusion.

But before we start with the actual topic, I would be glad to learn more about your current job.

- 1. Can you please describe your job and role at PharmXO?
- 2. Can you tell me a little bit about the environment in which you work? Is your team for example very diverse with different backgrounds, gender, age or nationality?

### Innovation

Okay, to start with the topic "Innovation"- I would like to give you some background to what I mean when I use the term "Climate for Innovation". It is defined by an environment where employees are encouraged to have innovative ideas, are able to show initiative, and take risks.

3. Have you seen such a climate for innovation in action recently at PharmXO? Could you give me some examples (either demonstrating innovation climate or a lack of it)?

The next questions will focus on how you feel about your job/tasks in combination with an innovative climate.

4. Do you think a climate for innovation has an impact on your engagement/motivation?

Could you give me an example? Why do you think it impacted you?

- Do you think a climate for innovation has an impact on your stress levels at work?
  Could you give me an example as well? Why do you think it impacted you in such a way?
- 6. Overall, do you think a climate for innovation has an impact on your job satisfaction? Could you give me an example? Why do you think it impacted you in such a way?

Is there anything you would like to add before we conclude the first part?

We talked about how an innovative climate impacts your feelings about your work regarding engagement, stress or satisfaction.

#### Inclusion

Now I would like to focus on inclusion. In organisations we talk about diversity and inclusion. The term "Diversity" refers to the mix of people who have different backgrounds, gender, age or nationality. And now, when I talk about an inclusive climate I mean that all employees are actively included, treated fairly and respectfully in their work teams and have equal access to opportunities and resources.

7. Do you see this climate here in PharmXO?

Could you give me some recent examples (either demonstrating inclusion climate or a lack of it)?

The next questions will focus on how you feel about your job/tasks in combination with an inclusive climate.

- 8. Do you think a climate for inclusion has an impact on your engagement/motivation?Could you give me an example? Why do you think it impacted you in such a way?
- 9. Do you think a climate for inclusion has an impact on your stress levels at work? Could you give me an example as well? Why do you think it impacted you in such a way?

Overall, do you think a climate for inclusion has an impact on your job satisfaction?
 Could you give me an example? Why do you think it impacted you in such a way?

Is there anything you would like to add before I move on?

In the second part we talked about how an inclusive climate impacts your feelings about your work regarding engagement, stress or satisfaction.

# Innovation & Inclusion

Thanks for sharing your perspectives. Okay I have one last question. We have talked about innovation and we talked about inclusion.

- 11. Do you think that innovation and inclusion are linked?
  - Do you think inclusion has an impact on innovation?
  - Do you think innovation has an impact on inclusion?

It was great talking with you about this topic. I am really pleased to hear your opinion about it.

Thank you for being involved in my research.

# **B 2** Invitation Email for Study 2 Interviews

Dear [Name],

I am currently undertaking research for my PhD focusing on the effect of innovation and inclusion climate on job satisfaction. As part of my research, I am doing face-to-face interviews to learn more about these effects within PharmXO. As you are part of the new PharmXO-I organisation which has the purpose of driving innovative technology across PharmXO, I was wondering if I can win you as an interview-partner?

Of course the interview is entirely voluntary. PharmXO will not know who participated nor have access to individual interview data.

Please find all details in the information sheet attached.

I would be very pleased to have the opportunity to talk with you about this topic. Thanks,

Ben Hahnewald



# Consent to Participate in Research

# Exploring the impact of an Innovation and Inclusion Climate on Job Satisfaction

### Ethics approval number: **S181207**

I have read, understood and kept a copy of the Research Project Information Sheet for the above research project.

I realise that this research project will be carried out as described in the Research Project Information Sheet.

Any questions I have about this research project and my participation in it have been answered to my satisfaction.

I agree to participate in the above research project.

I give consent for data to be used in a confidential manner as described in the Research Project Information Sheet.

# Participant

Name

Signature

Date