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Contagious Employee Wellbeing. Examining Organisational and Team Influences on Employee Wellbeing Through a Multilevel Lens

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Declaration of Originality

CERTIFICATE OF ORIGINAL AUTHORSHIP

I, Aglae Hernandez Grande, declare that this thesis is submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Management Discipline Group, UTS Business School at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program.

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Glossary (Notes on terminology)

- **Co-worker**: A person with whom one works within the same team in an organisation.
- **Emotional contagion**: A form of social contagion that involves "catching" others' emotions and moods.
- **Employee wellbeing**: Workers' mental, physical, financial and psychological wellness at work.
- **Employee**: A person working in an organisation in exchange for a salary.
- **Leader-member exchange**: Organisational resource defined as the employee-manager relationship from the perspective of the employee.
- **Managerial priority**: The employees' perception of how their organisation prioritises their wellbeing above productivity and outputs.
- **Managerial support**: The employees' perception of how managers support and care about their wellbeing and are attentive to employee needs.
- **Professional services industry**: Industry comprised of occupations in the service sector and that require special training and/or a qualification.
- **Psychosocial safety climate**: Organisational resource defined as the perceptions of organisational practices, policies, and procedures designed to maintain employees' psychological health and safety.
- **Team (or work team)**: A group of employees with complementary skills who work together to achieve specific goals and under the same direct manager.

List of abbreviations

- **BCE**: Before Common Era
- **CFA**: Confirmatory Factor Analysis
- **CFI**: Comparative Fit Index
- **CMV**: Common Method Variance
- **EFA**: Exploratory Factor Analysis
- **MAR**: Missing at Random
- **MCAR**: Missing Completely at Random
- **MCFA**: Multilevel Confirmatory Factor Analysis
- **MEFA**: Multilevel Exploratory Factor Analysis
- **MLA**: Multilevel Analysis
- **MNAR**: Missing not at Random
- **MSEM**: Multilevel Structural Equations Modelling

- **PERMA**: Positive Emotion, Engagement, Positive Relationships, Meaning, Accomplishments/Achievements
- **PSC**: Psychosocial Safety Climate
- **RMSEA**: Root Mean Square Error of Approximation
- **SEM**: Structural Equations Modelling
- **SPSS**: Statistical Package for the Social Sciences
- **SRMR**: Standardized Root Mean Square Residual
- **TLI**: Tucker-Lewis Index

Abstract

Employee wellbeing is receiving increasing attention as organisations grapple with increasingly complex workplace issues, including employee mental health. Interest in employee wellbeing has further increased since the beginning of the COVID-19 pandemic, as significant restrictions have impacted people's mental health. To date, workplace wellbeing initiatives and interventions have primarily focussed on a single conception of wellbeing and stress. However, there is no research on the impact team's emotional contagion on employee wellbeing. To explore the multiple dynamics that contribute to collective wellbeing, this thesis formulates hypotheses that draw from a combination of three theories: social exchange theory, conservation of resources theory, and emotional contagion theory. First, social exchange theory explains workplace behaviours. Emotional contagion theory identifies dynamics of the contagion effect of wellbeing between co-workers, while the conservation of resources theory assists in understanding how employees value organisational resources to reduce their levels of stress and support their wellbeing. By applying a pragmatic research philosophy under a multilevel statistical approach, this thesis looks at the cross-level moderating role of emotional contagion in the relationship between work stress and employee wellbeing. The impacts of the organisational resources of managerial priority and support are also explored through a chain mediation model. In this way, the thesis aims to build a more comprehensive model of employee wellbeing. Empirical testing utilises two-level, cross-sectional data drawn from 237 employees nested in 41 work teams from professional services across Australia. Although this thesis is relevant for multiple industries, the team dynamics of the professional services industry and its workers' abilities to work from home during COVID-19 made it a fruitful area to study for this thesis. We identified evidence supporting the hypotheses of the study, including a significant cross-level moderation effect. Managerial support and work stress serve as mediators in the positive relationship between managerial priority and employee wellbeing at both levels of analysis. The significance of this research lies in its study of the contagion effect of wellbeing on other members of the work teams. This study highlights the importance of organisational resources along with the important role of co-workers in maintaining employee wellbeing. The main implication is that organisational interventions to improve the level of employee wellbeing benefit from factoring in team dynamics to mitigate stress levels.

Chapter 1. Introduction

This thesis aims to understand organisational and team influences on employee wellbeing focusing on the Australian context. This chapter offers an overview of the thesis, beginning with a presentation of the context of the study and the research gap it addresses. Over the past decades, employee wellbeing has received increasing attention from researchers, public administrators, and organisations. In this thesis, employee wellbeing focuses on workers' physical, social, and psychological wellness at work. The interest in supporting employee wellbeing increased during the COVID-19 pandemic as we were facing lockdowns, curfews and restrictions that severely impacted our mental health. Most research has not considered the fact that employees work in teams and instead, have studied employees as isolated units. Little or no research currently appears to exist on the collectivist conceptualisation of employee wellbeing. Without studying the team influence on employee wellbeing, current interventions, policies, and practices may not be supporting the wellbeing of employees to the full extent possible. The chapter goes on to introduce the theoretical framework by outlining the three theories that guide this research study: *social exchange theory*, *emotional contagion theory*, and *conservation of resources theory*. To understand if employees influence each other's wellbeing when working together, this study also studies how managerial resources support employee wellbeing. Both *managerial support* and *managerial priority* have been considered the most important organisational resources to support employees' wellbeing. Chapter 1 also includes the research rationale, research aims, and research questions that guide this study. The chapter concludes with the significance of this project, its contribution to practice, and a general outline of the structure of the presented thesis.

1.1. Context and research gap

The labour market and the employment landscape have significantly changed over the past few years. The world is moving towards a more automated workflow, where the design, execution, and validation of many tasks previously done by humans can now be undertaken by machines or robots (Sestino & De Mauro, 2022). Alongside this development, employees are undertaking other tasks outside of these automated processes, where human interactions are critical. Moreover, the employment landscape is being altered by demographic forces and the working population is aging significantly (Roscigno et al., 2022). Notwithstanding impact that "the Great Resignation", the current skills shortage, and the so-called "War for Talent" have on the economy and the society overall (Serenko, 2022). These changes, along with the gig economy, globalisation, and the impact of COVID-19, are increasing the complexity of business operations (Näswall et al., 2021; Suter et al., 2020). This complexity brings with it other important demands that must also be included and embedded in organisational policies, practices, aims, and goals. One of these

demands is the need to pay extra attention to the wellbeing of employees and find ways to reduce job stress and the impact of psychosocial hazards.

In July 2022, Safe Work Australia published a code of practice on how to manage psychosocial hazards at work. Safe Work Australia is Australia's leading agency in developing policy on health and safety. The code of practice, published under the section 274 of the Work Health and Safety Act 2022 (Comm), implies that organisations must identify and eliminate or, if not possible, minimise all hazards that could pose a psychosocial risk (Safe Work Australia, 2022). As such, addressing the impact of workplaces on wellbeing is no longer an option but by law, organisations are now required to provide measures that eliminate or reduce psychosocial risks and support employee wellbeing.

Wellbeing is a dynamic concept that goes beyond the state of being happy or healthy. Wellbeing is challenging to define, and there is little or no agreement on how organisations and policy makers can support employees' wellbeing. According to Seligman (2012), wellbeing has five important pillars that are encapsulated in his PERMA model. PERMA includes five building blocks: (1) *Positive emotions* or feeling good, (2) *Engagement* or being absorbed in your daily activities, (3) positive *Relationships* and the ability to be authentically connected to those who surround you, (4) finding *Meaning* and having a purposeful existence, and (5) a sense of *Accomplishment* and success in life. Seligman's definition of wellbeing merges two different approaches that have been traditionally used to define wellbeing. On the one hand, *hedonism* defines wellbeing as satisfaction, happiness, pleasure, and positive affect. On the other hand, *eudaimonia* encapsulates the fulfilment of finding meaning and personal success.

Employee wellbeing is receiving increasing attention as organisations grapple with ever-more complex workforce issues. There is a general belief that employee wellbeing is a key consideration for managers, organisations, and workers themselves. This importance is because wellbeing has a perceived connection to a number of positive individual and workplace outcomes. Yet, a large gap remains between perceived importance of employee wellbeing and readiness to support it with organisational resources (e.g., policies and practices that support wellbeing). Higher levels of employee wellbeing have been linked with higher levels of employee performance (Brunetto et al., 2014), and with better organisational outputs (Krekel et al., 2019). In contrast, poor employee wellbeing has been associated with higher levels of psychological distress (de Jonge & Schaufeli, 1998), increased turnover, absenteeism, and presenteeism (Baptiste, 2008).

Christakis and Fowler (2009) explain the power of social networks and how wellbeing is contagious in social circles. They argue that when someone is happy and positive, individuals

who are connected to that person tend to become happy and positive. This contagious effect does not stay in this first-degree connection; instead, it can impact up to third-degree connections (Christakis & Fowler, 2009). First-degree connections are considered direct connections, while third-degree connections are contacts of your contact's contact. Negative feelings and low levels of wellbeing can also be contagious (Steinert, 2020) and can occur in the workplace between co-workers and those with whom employees interact on a daily basis. This theoretical development assumes an influence of the team on wellbeing. Yet, this team influence on employee wellbeing has not been empirically tested.

Not only is wellbeing a challenging concept to define but this is also the case with employee wellbeing. According to Ryan and Deci, wellbeing "is a complex construct that concerns optimal experience and functioning" (2001, p. 141). There is little agreement on a definition, which blurs its utility. In this thesis, employee wellbeing focuses on workers' physical, social, and psychological wellness at work. Some scholars suggest that employee wellbeing also includes the hedonic and eudaimonic approaches, as mentioned above, but focuses on these experiences at work (Näswall et al., 2021).

The lack of agreement on a definition of employee wellbeing has decreased the chances of having a proper measure to be able to develop further research (Salmee et al., 2020). Indeed, over the past 50 years, some 30 measures of wellbeing have been developed and tested in an organisational context. Nonetheless, it is important to consider that the validation of both individual and collective antecedents of employee wellbeing may be limited due to the application of consistently applied but undeveloped measures. While there have been valuable contributions from reviews and meta-analyses involving wellbeing indicators (see for example, Kuoppala,et al., 2008), further research is needed to comprehensively validate these antecedents. Most of the developed and employed scales do not include a full definition of employee wellbeing, and instead most scales are a composite of factors of wellbeing (Bayhan Karapinar et al., 2020; Butler & Kern, 2016).

The lack of an agreement on a definition of employee wellbeing and its measurement poses ongoing theoretical and practical problems. These problems impact the development of robust theory and practice concerning the role of organisations in supporting employee wellbeing and the relative cost-benefit of such actions for organisations, notwithstanding ethical considerations. For many companies, incorporating policies and practices to support employees' wellbeing has not been an easy journey. Some researchers, practitioners and employees feel that there is much more to be done and that in many instances, companies do not have the necessary tools to support their employees' wellbeing (Volini et al., 2020). The 2020 Deloitte report on Global Human

Capital Trends, “Designing work for well-being: Living and performing at your best” found that 80% of American organisations affirm that employee wellbeing is important or very important for their success (Volini et al., 2020). Employee wellbeing is not only important for organisational success, but for the society as a whole (Jaiswala et al., 2022). However, only 12% of these companies were actively working on including employee wellbeing within their programs. Deloitte calls this phenomenon “the readiness gap” (Volini et al., 2020, p. 35).

> Wellbeing had the largest gap between importance and readiness across this year’s trends, with 80 percent of organizations saying worker well-being is important or very important for their success over the next 12-18 months, but only 12 percent saying they are very ready to address this issue. (Volini et al., 2020, p. 35)

The COVID-19 pandemic has further increased the interest in employee wellbeing. In November 2019, several occurrences of people infected with the coronavirus were discovered in Wuhan, China. The virus rapidly travelled around the world, and on the 11th March 2020, the World Health Organisation declared the outbreak a pandemic (World Health Organisation, 2020). This caused a sudden change for society, and individuals were forced to stay at home, with lockdowns, curfews, and other restrictions put in place. Amongst these changes, many employees were asked to work from home to reduce close contact with non-family members and prevent the spread of the virus. Before COVID-19, flexible work arrangements were seen as a luxury, but since the pandemic was declared, provision of these arrangements shifted from a discretionary policy to a mandatory requirement, also known as “forced flexibility” (Franken et al., 2021, p. 1131). Since many employees were forced to work remotely, their wellbeing was impacted due to an increasing demand of care obligations at home and having to balance work and personal life while working from home (Franken et al., 2021). Therefore, since the beginning of the pandemic, the interest in employee wellbeing, along with the gap between importance and readiness, has grown.

Undeniably, employee wellbeing has an important impact on mental and physical health (Platts et al., 2022). The Australian Department of Health has planned a budget for 2022 and 2023 to prioritise mental health, preventive health, and sport (Department of Health, 2022). The budget has five different pillars: (1) prevention and early intervention, (2) suicide prevention, (3) treatment, (4) supporting vulnerable people, and (5) workforce and governance. Focusing on pillar five, which is concerned with prioritising mental health and suicide prevention in the workforce, the Department of Health has invested AUD$89.2 million to increase the workforce specialised in mental health, and along with other mental health programs, they have budgeted AUD$3 billion for 2022-2023 (Department of Health, 2022). The Australian Productivity Commission estimates the cost of poor mental health to be between AUD$200 and AUD$220 billion a year (King, 2021).

As with general wellbeing, social relationships impact employees' wellbeing. More specifically, psychologists argue that workplace relationships and behaviours have an important impact on employees' wellbeing (Finkel et al., 2017). But still today, most organisational programs that try to offer interventions to support employees' wellbeing offer individual managerial resources. Some examples of wellbeing initiatives for workplaces include employee assistance programs, counselling services, gym memberships, or mindfulness sessions (Goldstone et al., 2021). The literature highlights that for the success of these wellbeing initiatives, there are two important contributors. First, it is important to have a workplace safety climate (Bailey et al., 2015), and second, a supportive manager (Brunetto et al., 2011). However, these programs cannot cover the entire workforce. Some employees may still feel distressed or suffer high levels of anxiety and/or depression regardless of the organisational resources available to support them (Bamberger et al., 2015). Any distressed employees are likely to interact with co-workers and could potentially have a negative impact on the wellbeing of colleagues (Xerri et al., 2022). Moreover, according to Christakis and Fowler (2009), these distraught employees could even have a broader negative influence on the contacts of their co-workers. Yet, to the researcher's best knowledge, the extent of the influence of these distraught employees has not been accounted for or studied.

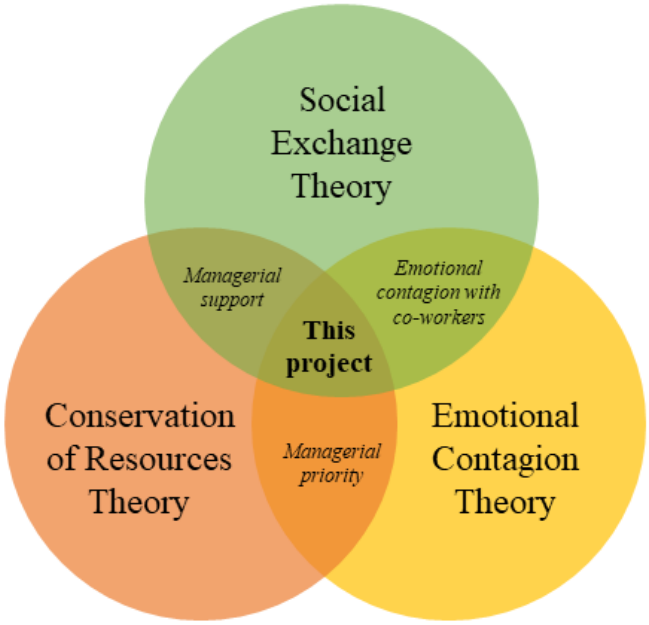
The antecedents and outcomes of employee wellbeing have been widely acknowledged and explored within the scholarly literature. However, there appear to be very few studies analysing different aspects of employee wellbeing incorporating the idea that employees are nested within groups and that as such, the group must have an impact on the individuals (e.g., Bakker, 2015; Benitez et al., 2019; Farr-Wharton et al., 2021; Salmee et al., 2020). While several studies have examined the impact of team-level variables such as climate, conflict, and cohesion on various wellbeing indicators (González-Romá et al., 2002; Gamero et al., 2008), a gap remains in understanding the specific role of team emotional contagion and its effects on employee wellbeing. The work team refers to those employees that work together and that interact with each other frequently, whether it is online or face-to-face (Xerri et al., 2022). To be able to establish how organisations and managers can positively contribute to improve the levels of employee wellbeing, there is an urgent need to understand a collectivist conceptualisation of employee wellbeing. Employee wellbeing is the central construct under investigation in this thesis with the aim of contributing to the development of healthier workplaces.

1.2. Theoretical framework

To study how team members and organisational resources contribute to employee wellbeing, it is necessary to understand workplace social relationships. This thesis is guided by a theoretical framework that comprises multiple theoretical underpinnings (see Figure 1). The process of using multiple theoretical lenses is understood as theoretical blending (Cornelissen & Durand, 2012).

The overarching framework is social exchange theory, which can be drawn on to better understand workplace relationships and behaviours (Porter, 2018). However, social exchange theory has been referred to as a broad conceptual paradigm, which can explain any interaction, at least post hoc (Cropanzano et al., 2016). As such, social exchange theory poses some important limitations in explaining how team members influence each other when working together as part of a group. For this study, it is essential to understand if employees influence each other when working together, and therefore, this study also draws upon two other theories: emotional contagion theory and conservation of resources theory. Overall, the intersection between these theories represents the theoretical framework of this study to understand how the team and organisational resources influence employee wellbeing.

Figure 1. Theoretical and conceptual frameworks of this thesis



Note. The theoretical and conceptual frameworks of this study using the theoretical blending of social exchange theory, emotional contagion theory, and conservation of resources theory.

1.2.1. Social exchange theory

Social exchange theory explains human relationships and interactions. According to this theory, there is a reciprocal dynamic between two or more parties where one gives and the other receives and gives back (Blau, 1964; Gouldner, 1960). Moreover, when the action from the giver is positive, it is also expected that the receiver would respond in a more positive way (Eisenberger et al., 1987; Gouldner, 1960). Similarly, when the actions are negative or perceived as such, the receivers tend to react more negatively. In a workplace setting, these social interactions occur with managers, colleagues, clients, and other potential stakeholders who are involved with the organisation. However, social exchange theory does not explain how the dynamic of these workplace interactions contribute to employee wellbeing. To understand how workplace

relationships and interactions contribute to employee wellbeing, it is necessary to create a body of knowledge that supports the wellbeing of staff.

1.2.2. Emotional contagion theory

Emotional contagion theory was developed under the umbrella of social exchange theory. This theory explains how people tend to "catch" others' emotions and converge emotionally with them (Hatfield et al., 1993). This emotional conversion also occurs during workplace interactions. Employees are not isolated elements of a company or organisation; instead, they normally work in teams and interact with others on a daily basis (Petitta et al., 2019). A work team is a group of employees that work together to achieve specific goals and under the same direct manager (Costa, 2003). These interactions between team members can be face-to-face or online, and according to emotional contagion theory, they have an influence on employee wellbeing. Catching colleagues' emotions has important implications for workplaces (Xerri et al., 2022). Some argue that employees who have high levels of emotional contagion and work with colleagues who experience lower levels of wellbeing tend to have a decreased level of employee wellbeing (Xerri et al., 2022). In contrast, employees who have high levels of emotional contagion and belong in a group with high levels of wellbeing tend to experience even higher levels of wellbeing. To understand how the team influences employee wellbeing, it is necessary to understand the synergy between team members and to what extent this emotional contagion impacts the level of wellbeing. Chapter 2 further explores the dynamics and propositions of emotional contagion theory.

1.2.3. Conservation of resources theory

Conservation of resources theory is a resource-oriented theory that explains how people protect and build resources that reduce their levels of stress and, therefore, increase their levels of wellbeing. A stressful situation is understood as a threat of loss to someone's resources, and according to conservation of resources theory, people tend to protect their current resources. While in a positive and nurturing situation, people tend to try to acquire new resources that can reduce their stress levels and improve their wellbeing. In a workplace, the literature argues that the resources that have a higher impact on stress reduction and employee wellbeing are those provided by the organisation and their direct managers (Bookwala & Fekete, 2009). These resources include managerial priority (Hall et al., 2010), and managerial support (Shi & Gordon, 2020). By studying the resources that employees strive to retain, protect, and build, it should be possible to identify the antecedents of work stress and employee wellbeing. Researchers have focused on conservation of resources theory to explain the individual antecedents of employee wellbeing and further develop organisational interventions to support wellbeing. However, there is a clear gap regarding how emotional contagion between colleagues shapes the impact of these

interventions. While this thesis tries to conceptualise the collective influence on wellbeing, it is also necessary to understand how these organisational resources impact stress and wellbeing levels.

1.3. Organisational resources

According to conservation of resources theory, two organisational resources are argued to be antecedents of employee wellbeing: first, the employee's perception of how management prioritises their wellbeing above organisational profitability and second, the employee's perception of their relationship with their direct manager and how supportive this relationship is. Organisational scholars argue that these two organisational resources are important contributors in reducing work stress and boosting employee wellbeing (Farr-Wharton et al., 2022a; Xerri et al., 2022).

1.3.1. Managerial priority: Psychosocial safety climate

Psychosocial safety climate is a concept developed by Dollard and Bakker (2010) that conceptualises to what extent employees perceive their organisation protects and prioritises their wellbeing, health, and safety. According to Bailey et al. (2015), psychosocial safety climate is an important resource to consider when implementing interventions to reduce work stress and support employee wellbeing. Moreover, psychosocial safety climate is understood as an important source of organisational resources for employees. Conservation of resources theory states that if employees perceive there to be a high level of psychosocial safety climate in their workplace, they are more likely to strive to protect those resources. However, some researchers argue that managers act as organisational agents and without them, the influence of psychosocial safety climate on employee wellbeing is not as successful (Shi & Gordon, 2020).

1.3.2. Managerial support: Leader-member exchange

Managerial support is essential in the relationship between psychosocial safety climate and employee wellbeing (Shi & Gordon, 2020). Leader-member exchange, as conceptualised by Graen et al. (1982), refers to the quality of the relationship between a manager and an employee, encompassing the employee's perception of the support, trust, communication, and mutual exchange of resources with their manager. Brunetto et al. (2011) argue that organisational support and resources are accessed by employees through their direct manager. Therefore, the relationship supervisor-employee is an important antecedent of wellbeing as it is the source of organisational resources for employees.

1.4. Research rationale

There is an increasing interest in employee wellbeing, its measurement, and its enablers. Additionally, since July 2022, organisations in Australia must mitigate the impact of work on

wellbeing (Safe Work Australia, 2022). Yet, consensus has, to date, not been achieved on a definition or measurement of this construct (Deci & Ryan, 2008; Dodge et al., 2012). Moreover, most of the interventions that have been developed target the individual level of employee wellbeing without accounting for the collective influence on it. Probably because of this lack of understanding of how the team influences employees' wellbeing, the gap between knowledge of its importance and readiness for action is significant (Volini et al., 2020). Although many companies consider employee wellbeing essential for their success, very few organisations feel ready to work on it due to the lack of understanding of how to support wellbeing with meaningful programs in their strategy (Volini et al., 2020). The lack of a definition and measurement poses ongoing problems for the development of robust theory and practice concerning the role of organisations in supporting employee wellbeing. Moreover, there is little evidence of scholarly work associated with the collective conceptualisation of employee wellbeing (Brunetto et al., 2020; Farr-Wharton et al., 2021). Most scholarly papers analysing employee wellbeing use a single-level approach. Yet, according to multilevel organisational theory, employees who belong to the same work team are more alike than those from different teams (Kozlowski & Klein, 2000). This similarity between employees who belong to the same work group has important implications for the statistical analysis and its results. Yet, most of the research examining wellbeing at work has ignored this crucial cluster effect.

1.5. Research aims and research questions

The study examines the influence of organisational resources and co-workers on employee wellbeing. The overall objective is to develop a more nuanced understanding concerning the collective drivers of wellbeing, and in so doing, the thesis seeks to move the current discourse beyond its almost exclusive focus on individual mental disposition. The research questions (RQ) for this study are included in Table 1**Error! Not a valid bookmark self-reference.**.

Table 1. Research questions

RQ1	Does emotional contagion among team members influence the levels of individual work stress and employee wellbeing?
RQ2	To what extent do organisational resources impact the level of employee wellbeing?

The two research questions presented above are the drivers of this study, as each will inform the central research aim of identifying how the team impacts employee wellbeing: RQ1 attempts to analyse whether or not emotional contagion theory influences work teams. RQ2 studies the relationship between organisational resources and their impact on employee wellbeing. The resources under investigation in this thesis are the employees' perception of managerial priority and support.

1.6. Significance and contribution to practice

With this thesis, I aim to contribute to the body of scholarly knowledge that is associated with employee wellbeing. This study intends to contribute to the literature by using a multilevel post-positivist approach to conduct an analysis of how the team influences employee wellbeing. I plan to establish a better understanding of wellbeing and, more specifically, employee wellbeing, as well as a deeper awareness of its contagious effect. I anticipate making further contributions to help develop healthier and better workplaces, where employee wellbeing is a crucial aim of every organisation. Furthermore, I hope that my contribution can assist with the development of workplace interventions to assist with the maintenance and acquisition of better levels of collective wellbeing – in particular, around the specific design of interventions incorporating a more nuanced conceptualisation of wellbeing and its influences, and in the management and leadership of work-teams. Moreover, this thesis aims to contribute to the understanding of the key role of managers and, in particular, line managers, as "transporters" of organisational resources. This is particularly important since line managers do not tend to be human resources experts and are usually promoted on their technical skills and not their interpersonal skills.

An improved understanding of employee wellbeing and its antecedents is likely to contribute to a reduction in the current rise of work-related stress, anxiety, and depression. Potentially, the findings of this study could assist in the reduction of work-related suicide rates, which have increased during the pandemic (Podubinski & Glenister, 2021). For these reasons, the findings and conclusions of this thesis could be of great significance given the current world situation. The COVID-19 pandemic has caused many workplace changes, such as the increase in flexible work arrangements. Moreover, the current "War for Talent", with the increasing competition between recruiters and the prominent skill shortage that the Australian economy is currently facing, adds extra pressures for managers and organisations (Goldstone et al., 2021; Serenko, 2022). Among those pressures, some organisations try to create a competitive advantage and be at the forefront of the employee value proposition. This study aims to provide practical recommendations for supporting employee wellbeing and reducing work stress. Additionally, the research tries to offer a more in-depth theoretical insight as to how organisations can contribute to the wellbeing of their employees by analysing how team members influence each other and the organisational antecedents of employee wellbeing. As such, the research uses a theoretical blending of three different and complementary theories to integrate plausible reasoning and provide new insights while avoiding "silos of knowledge" (Cornelissen & Durand, 2012). Therefore, this thesis aims to contribute to the development of three theories while using multiple lenses to frame the research.

Therefore, the innovation and significance of this study is that it seeks to understand if one employee's perception of their wellbeing can shape their team members' perceptions of wellbeing. Thus far, the majority of studies that examine employee wellbeing have been almost solely at the individual level of analysis. This is problematic because organisational scholars using a qualitative lens assert the existence of a collective (team-based) effect that can occur when individuals in a team have, for example, high perceptions of wellbeing (Potter et al., 2019). Until the advent of multilevel statistical analysis, finding evidence for this assertion using quantitative methods was impossible. Now that statistical and computational tools have become more advanced, to the point where they can factor in individual and team-level data points (and beyond), pursuing this study is timely and essential for advancing the conceptualisation of theory under the broader banner of *positive organisational scholarship*.

1.7. Structure of the thesis

This thesis comprises six chapters. The present chapter has provided an introduction to this thesis. It commenced with an overview of the context and the research gap. This is followed by a presentation of the theoretical underpinnings that frame this thesis. The chapter also introduces the two organisational resources that are considered influencers of employee wellbeing. It continues with the research rationale, along with this study's research aims and research questions. The chapter concluded with the significance and contribution to practice.

Chapter 2 offers a review of the extant literature examining the theoretical and conceptual frameworks of this research project. It presents social exchange theory as the overarching framework for this study, as well as emotional contagion theory, which falls under the umbrella of social exchange theory. Moreover, it introduces conservation of resources theory to understand if employees protect and maintain their resources to reduce their levels of job stress and boost employee wellbeing. Additionally, multilevel organisational theory is referred to as it assists in the development of the methodology, which is presented in Chapter 3. Multilevel organisational theory introduces the need for a two-level study, where the work team influence is considered, and employees are not studied as if they were isolated units. The chapter also explores the literature on work stress to understand its relationship with employee wellbeing. To conclude, the chapter presents the two organisational antecedents that are included in this thesis. First, managerial priority as psychosocial safety climate, and second, managerial support as Leader-member exchange.

Chapter 3 provides a detailed presentation of the methodology that this study has adopted. It first presents the approaches to employee wellbeing research and how it has been studied as it has garnered increasing attention. The chapter continues with a search of the different research

paradigms or philosophies that may help to inform the study. This thesis has been structured under a post-positivist approach. To answer the research questions, this study used quantitative methods and collected survey data from 237 employees within 41 different work teams from Australian professional services organisations. Following the research design, Chapter 3 includes some preliminary analysis of results such as a normality test, multilevel structural equation modelling, multilevel exploratory factor analysis, multilevel confirmatory factor analysis, reliability and validity of the utilised scales, multicollinearity analysis, and model fit. It concludes with the ethics and risks that have been taken into consideration.

Chapter 4 details the results of the data analysis. It begins with the results of the measurement model with the multilevel exploratory factor analysis and the multilevel confirmatory factor analysis. To continue, the chapter presents the results of the multilevel structural model with the description of the used estimator (Bayes), the model fit and the results of the hypothesis testing.

Chapter 5 provides and extensive discussion on the results presented in Chapter 4. It presents an overview of the research questions and hypothesis as well as this thesis' contributions and implications for theory, research, practice and policy.

Chapter 6 presents an overall conclusion of this thesis. Lastly, the chapter presents the results obtained through the extensive data analysis process. The data was analysed using multilevel structural equation modelling. This chapter has a particular focus on the important findings of this thesis as well as an overview of its limitations and potential areas for further research.

1.8. Conclusion of the chapter

The introductory chapter begun with a presentation of the context of this thesis. This section explored the current research gap and the need for a collective conceptualisation of employee wellbeing. The section explored the concept of employee wellbeing and why it is receiving increasing attention from organisations, managers, employees and researchers. The theoretical framework of this study was then presented. Three theoretical underpinnings frame this thesis. First, social exchange theory serves as the overarching theory and below it are emotional contagion theory and conservation of resources theory. The intersection between these three theories serves as the theoretical framework of this research project (see Figure 1). The next section of this chapter presented the organisational resources under analysis. Managerial priority and support are considered key organisational resources that work as antecedents of employee wellbeing. However, it is not known to what extent co-workers' emotions can positively impact the influence of managerial priority and support. The chapter continued with the presentation of the research rationale and discussed the research aims and the two research questions. The chapter

finished with the significance of this study and its contribution to knowledge and practice as well as an overview of the structure of this thesis.

Chapter 2. Theoretical and Conceptual Frameworks

This section explores the existing literature on the theoretical and conceptual frameworks that support this study. The main aim of this thesis is to investigate the team influence on employee wellbeing. The nuances of human relations impose a particular complexity when analysing the impact of colleagues and management on employees' wellbeing. As such, this study draws on the blending of three different theories: social exchange theory, emotional contagion theory, and conservation of resources theory. The goal of this chapter is to frame the knowledge gap that defines the research questions of this study. The chapter continues with an in-depth exploration of the current literature that builds the conceptual framework. The aim of this conceptual framework is to define and develop an understanding of the phenomenon to be studied and assist with the development of the theorised model and the hypothesis. This thesis primarily focuses on the contagion effect between work stress and employee wellbeing. Accordingly, this forms the foundation for the first hypothesis. The following hypotheses develop the antecedents of employee wellbeing. Another theory has been included in the theoretical framework because it drives the methodology, i.e. multilevel organisational theory. Team members from the same work team tend to be more alike than those from other teams. This last theory helped with the development of the methodology for this study as it uses a multilevel statistical analysis approach, within a post-positivist research philosophy. According to multilevel organisational theory, teams are multilevel systems that need to be studied as a whole rather than be analysed member-by-member as most organisational studies are. To conclude this chapter, there is a contextual overview of the professional services industry in Australia. All participants in this study belong to the professional services industry, and this has particular implications for the results that are presented and discussed in Chapters 4 and 5.

2.1. Understanding workplace relationships and behaviours

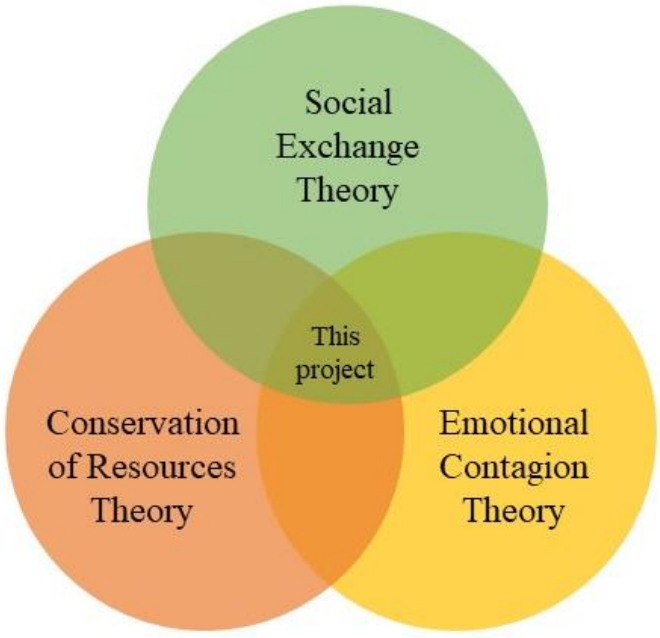
The relationship between managers and employees, along with the relationship between co-workers can be studied as any other interpersonal relationship. These relationships have important implications for the individual as well as the team performance, and organisational outputs. For employees, some argue that positive workplace relationships and a perceived safe environment can reduce work stress (Farr-Wharton et al., 2022a) and enhance employee wellbeing (Xerri et al., 2022). While for organisations, nurturing workplace relationships contribute to higher performance and outputs (Jankelova & Joniakova, 2021).

As such, understanding workplace relationships and behaviours is key for organisations' success. According to Otamori and Igodo (2022, p. 57), "Employees are motivated to develop positive relations at the workplace". Nonetheless, these positive relationships are not easy to build and can be impacted by unpredictable challenges (Mitchell et al., 2012). Social exchange theory is a

key theoretical framework which can be drawn on to better understand workplace relationships and behaviours (Porter, 2018).

This thesis is guided by social exchange theory (Blau, 1964) to examine the impact of managers and colleagues on employee wellbeing. Social exchange theory has been proven to be an important construct for understanding workplace behaviours (Cropanzano & Mitchell, 2005). However, social exchange theory is more akin to a broad conceptual paradigm than a theory itself (Porter, 2018) and is frequently used as an overarching framework for several other theories. Many researchers even refer to social exchange theory as a family of multiple conceptual models, as it is one of the most enduring and widely used frameworks (Cropanzano & Mitchell, 2005; Mitchell et al., 2012; Porter, 2018). This endurance similarly applies to the two other theories that frame this study, the emotional contagion theory and conservation of resources theory (see Figure 2). Combined, these three theories provide a bespoke theoretical framework to address the research aims of this thesis.

Figure 2. Theoretical framework of this thesis



Note. The theoretical framework of this study is the intersection between three theories: Social exchange theory, emotional contagion theory, and conservation of resources theory.

A summary of the theoretical background of this research project has been provided in Table 2. Both emotional contagion theory (Herrando & Constantinides, 2021) and conservation of resources theory (Ng & Feldman, 2012) can be perceived as components of social exchange theory, as they suggest that social life involves a sequence of transactions between two or more agents. However, to develop a better sense of the overall theoretical framework underlying this thesis as well as the current knowledge gap, this section will explore social exchange theory in

more depth. Moreover, according to Kozlowski and Klein (2000), since organisations are multilevel entities, organisational theories need to incorporate multilevel dynamics with data structured in several levels. The dynamic of this data must consider its multilevel structure, where employees are nested within work teams (Kozlowski & Klein, 2000). Emotional contagion theory draws on the multilevel dynamics between those agents that closely interact on a frequent basis (see section 2.2.). However, since the aim of this research project is to study the impact of co-workers and managers on employees' wellbeing, this section comprises the analysis and presentation of social exchange theory as the general framework. The main aim of this section is to understand workplace relationships and behaviours to be able to subsequently analyse how these interactions influence the wellbeing of employees. The following sections then develop the details of the two other theories, with section 2.2. exploring the collective influence on employee wellbeing and section 2.3. identifying the organisational resources that influence wellbeing.

Table 2. Summary of the theoretical framework of this study

Theory	**Application**	**References**
Social exchange theory	This theory helps to understand workplace behaviours and relationships.	(Cropanzano & Mitchell, 2005; Mitchell et al., 2012)
Emotional contagion theory	This theory helps to understand how employees tend to synchronise emotions and feelings with co-workers. In other words, how co-workers influence employee wellbeing.	(Hatfield et al., 1993; Sy et al., 2005)
Conservation of resources theory	This theory helps to identify the social influencers of employee wellbeing within an organisation and to understand how employees value these resources.	(Fritz & Sonnentag, 2006; Hakanen et al., 2018; Halbesleben et al., 2014)

Although social exchange theory has many variants, the most contemporary and generic model involves one party providing a benefit or doing harm to another party and follows with the other party responding. This is a reciprocal dynamic in which one party gives and another receives and gives back (Blau, 1964; Gouldner, 1960). Social exchange theory predicts that in reaction to positive initiating actions, the receiver will tend to reply in a more positive way (Eisenberger et al., 1987; Gouldner, 1960). In contrast, in reaction to negative initiating actions, the receiver will tend to reply more negatively. In a workplace setting, these interactions generally occur between co-workers, with clients, or between supervisors/direct managers and employees (Mitchell et al., 2012; Vine, 2004). High-quality social exchange relationships that provide positive value include

resources such as managerial priority, (Xerri et al., 2022), managerial support (Riggle et al., 2009) or training and development programs (Khan & Iqbal, 2020; Ocen et al., 2017). On the other hand, low-quality social exchange relationships that provide negative value include aspects that negatively affect the organisation and the team as well as the individual. Examples include mobbing, which is a sociological term that refers to the bullying of an employee by a group (Cropanzano et al., 2016; Medina-Craven & Ostermeier, 2021) or unachievable targets set by the team or the organisation (McLeod et al., 2021; Worku, 2019).

The quality of any interaction can be influenced by the relationship between the parties (Blau, 1964). In most cases, relationships with greater trust tend to be considered a valuable resource or provide more of a benefit to the parties, while relationships marked by distrust or fear tend to have a lower value and may end sooner (Cropanzano et al., 2016; Meira et al., 2022). In this context, studies suggest that there are two important relationships that must be studied to recognise how to support and promote employees' wellbeing from the organisational side (see Table 3). First, the relationship between the employee and the supervisor or line manager (Graen & Uhl-Bien, 1995; Hu & Liden, 2013). Second, this theory also suggests that relationships amongst co-workers can have an influence on employee wellbeing (Benitez et al., 2019). However, there are few studies that have analysed how these relationships influence employee wellbeing, and there are even fewer that consider a multilevel perspective (Terpstra-Tong et al., 2020).

Table 3. Workplace relationships under analysis within the social exchange theoretical framework

Relationship	**Relationship dynamics**	**References**
Employee-supervisory	A positive relationship with a supervisor can contribute positively to the wellbeing of the employee, while a negative relationship with a supervisor increases the chances of turnover, burnout, and work stress.	(Graen & Uhl-Bien, 1995; Hu & Liden, 2013)
Between co-workers	Positive relationships with other co-workers can contribute positively to employee wellbeing and influence their perception of organisational and managerial practices.	(Benitez et al., 2019)

On the one hand, the quality of relationships between the employee and the supervisor or direct manager is considered an important influencer on work stress and employee wellbeing (Graen & Uhl-Bien, 1995). Social exchange theory suggests that a more positive relationship with a supervisor will contribute positively to the wellbeing of the employee (Hu & Liden, 2013). Building on the idea that the perception of supervisorial practices and policies influences

employee wellbeing, social exchange theory proposes that employees tend to respond with higher performance and extra-role behaviours which are not part of their formal job requirements when they perceive that the organisation is investing and believing in them (Cropanzano & Mitchell, 2005). However, social exchange theory does not expand on how employees respond to these organisational social resources. To further develop this proposition, it is essential to examine the team resources that influence employee wellbeing and that can be supported by the organisation. Many positive organisational researchers point out that this has been developed using the conservation of resources theory (e.g., Hakanen et al., 2018; Halbesleben et al., 2014; van Woerkom et al., 2016; Xerri et al., 2022). Social exchange theory is limited in its ability to explore what is considered a benefit or a cost when maintaining or finalising a relationship. For this reason, organisational resources that impact employee wellbeing are analysed in section 2.3. along with an exploration of conservation of resources theory.

Similarly, social exchange theory also suggests that relationships amongst co-workers can have an influence on employee wellbeing (Benitez et al., 2019). Studies suggest that a positive relationship with other co-workers can influence an employee's relationship with their supervisor and how managerial practices are perceived by employees (Bartel & Saavedra, 2000; Benitez et al., 2019). The understanding of the relationships amongst co-workers using the lens of social exchange theory explains human behaviour and the social structure of relationships from a sociological and psychological perspective (Meira et al., 2021). Yet again, social exchange theory does not provide a full understanding of how the dynamics of these interactions can influence one's wellbeing levels. Studies that use the social exchange theoretical framework to understand the relationship between co-workers have mainly analysed those behaviours from the individual perspective (e.g., Hussain et al., 2020; Salem et al., 2022), without considering that employees belong to a team and that the team may also have an influence on its employees' wellbeing. Moreover, one of the main criticisms of this theory is that it is so broad that it can explain almost any type of relationship, at least post hoc (Cropanzano et al., 2016). It is for this reason that within this thesis, emotional contagion theory is also drawn on to study the team antecedents of employee wellbeing. Emotional contagion theory is a multilevel theory that explains how humans tend to synchronise feelings, emotions, and beliefs with those around them (Hatfield et al., 1993). In the workplace, those around them would be in general, other co-workers, and therefore, it is also important to consider this effect as a moderator between work stress and self-perceived wellbeing levels. The emotional contagion theory will be further explored in section 2.2.

Social exchange theory describes relationships as result-oriented social behaviours. The theory predicts that people choose to enter and maintain relationships in order to maximise the benefits of these relationships while minimising the costs (Blau, 1964; Cropanzano & Mitchell, 2005). It

is similar to the cost-benefit economic analysis that businesses use to analyse which decisions to make and which to forgo. However, in terms of relationships and their cost-benefit analysis, researchers are describing their observations when analysing human actions and not arguing that an economic metaphor should be used to make these decisions (Cropanzano & Mitchell, 2005). In the workplace, employees are observed to make decisions based on the prospective outcomes and to consider the costs (Emerson, 1976). Costs from a relationship can include anxiety, stress, embarrassment, and time, while benefits can include an increase in wellbeing, engagement, achievement, or finding a sense of belonging.

When evaluating the rewards that an employee receives from their organisation through the lens of social exchange theory, Tsui et al. (1997) suggest that support for employee wellbeing and investment in employees' careers are essential. As such, relationships between employees, managers, and co-workers are fundamentally important. If this relationship is one of high-quality social exchange, it is theorised to lead to trust (Cropanzano & Mitchell, 2005), low levels of job stress (Farr-Wharton et al., 2022a), and high levels of employee wellbeing (Danna & Griffin, 1999; Milner et al., 2015; Xerri et al., 2022). However, if the relationship does not become beneficial, it may end, leading to higher turnover and burnout rates (Danna & Griffin, 1999). Studies suggest that the best workplace relationships are those with a mutual investment approach i.e., both employees and their employers invest in the relationship (Tsui et al., 1997). These relationships are, in general, also long-term relationships that provide greater benefits for all parties involved (Blau, 1964).

Social exchange theory has received several points of criticism that cannot be ignored. The main criticism is that the theory is so broad that it could likely explain any interaction (Cropanzano et al., 2016). Conservation of resources and emotional contagion theories help in overcoming this limitation. Some other criticisms of social exchange theory include the lack of clarity when developing constructs (Cropanzano et al., 2016). This challenge has been addressed in this study by further framing the study with other theories that are more specific and build additional pillars for this research. One last important limitation that has been mentioned in the literature is the assumption of bipolarity (Martinescu et al., 2021; Medina-Craven & Ostermeier, 2021). In this case, bipolarity is due to the assumption that positive actions or emotions are the same as the absence of negative actions or emotions. One of the main reasons for this assumption is that negative emotions are more prominent in the literature as these are the ones that have kept humanity alive (Ekman et al., 1983; Harker & Keltner, 2001). This criticism of social exchange theory is addressed in section 2.4. in the discussion of the conceptual framework where employee wellbeing is defined as a construct itself and not as the absence of stress or psychological distress.

2.2. The collective influence on employee wellbeing

Employees are not isolated units within a company – they belong to a team or a department, and the interaction between employees has an impact on employees' behaviours and emotions (Petitta et al., 2019). Several studies have analysed how team members can develop mutually shared emotions and moods when working together (e.g., Barsade, 2002; Totterdell et al., 1998; Xerri et al., 2022). In this study, emotional contagion theory helps to explain how teams influence members' individual and collective wellbeing. The emotional contagion theory is a multilevel model that defines emotional contagion as "the tendency to automatically mimic and synchronise movements, expressions, postures, and vocalizations with those of another person and, consequently, to converge emotionally" (Hatfield et al., 1993, pp. 153-154). Many studies have observed that as soon as people are born, they tend to mimic and synchronise their emotional expressions, both explicitly and implicitly, with those of others (Hatfield et al., 1993; Hoffman, 2002).

Work teams (this thesis refers to work teams as teams) can be defined as a group of employees with complementary skills who work together to achieve specific goals and under the same direct manager (Costa, 2003). Most workplaces are encouraging teamwork, as it has several benefits (Bartel & Saavedra, 2000; Staines, 2010). Numerous studies in different disciplines such as biology, social science, and psychology hold that individuals function better in groups than by themselves (Burgoon et al., 1995; Caporael, 1997). Organisational researchers have argued that emotional contagion between team members can improve group performance and organisational goals (Bartel & Saavedra, 2000; Schneider et al., 2013; van Maanen & Kunda, 1989).

There are several mechanisms associated with emotional contagion. Early studies suggested that emotional contagion included conscious reasoning and analysis, yet more recent studies have found that this process is more automatic and subtle than previous ones had suggested (Hatfield et al., 1993). Hatfield et al. (1993) suggested three propositions to support the idea that emotional contagion is more ubiquitous and automatic than what was suggested earlier. These include mimicry, feedback, and contagion, which are summarised in Table 4. Mimicry is the first step and happens when people automatically mimic the movements of those around them. In the workplace, this synchronisation has important implications. Several studies point out that if an employee is picking up others' emotions and mannerisms, it may indicate that they are comfortable and engaged in their job (Bartel & Saavedra, 2000). In the second phase, feedback happens when people make inferences about their own emotions and adapt them to the movements and behaviours they are mimicking. The link between facial expressions and emotions is, in general, spontaneous. For instance, when people display a facial expression of sadness or anger, they are likely to feel the emotions associated with those expressions (Ekman

et al., 1983). Finally, contagion happens when "from moment to moment, people tend to catch other people's emotions" (Hatfield et al., 1993, p. 99). In a workplace environment, these emotions can be from other colleagues, supervisors, managers, or clients. This can have both positive and negative implications. For instance, if an employee's colleagues are experiencing high wellbeing, the employee may also catch it. However, more frequently than not, employees with high levels of emotional contagion tend to converge emotionally with those that are at their same level such as colleagues or co-workers (Xerri et al., 2022).

Table 4. Propositions of emotional contagion theory

Proposition	Description	Work Implications	References
Mimicry	In conversation, people automatically and continuously mimic and synchronise their movements and instrumental behaviours with those of other people.	Employees spend a significant amount of time at work, and the people they work with have a considerable influence. If an employee is picking up others' emotions, it may indicate that they are comfortable and engaged in their job.	(Bartel & Saavedra, 2000; Hatfield et al., 1993; Lee & Pennings, 2002)
Feedback	Subjective emotional experience is affected moment to moment by the activation of and feedback from facial, vocal, postural, and movement mimicry.	As employees mimic others around them, they are also likely to experience the emotion associated with the mimicry.	(Ekman et al., 1983; Hatfield et al., 1993)
Contagion	Consequently, people tend, from moment to moment, to catch others' emotions.	In a workplace environment, people tend to catch others' emotions. These can be from other colleagues, supervisors, managers, or clients. This can have either a positive or negative impact. For instance, if an employee's colleagues are experiencing high levels of wellbeing, the employee may also catch them.	(Barsade, 2002; Hatfield et al., 1993; Petitta et al., 2019)

According to Hatfield et al. (1993), there are two types of emotional contagion, which are summarised in Table 5: implicit and explicit. Implicit emotional contagion is the most common type, as it happens automatically and unconsciously. This process happens following the three propositions described above. According to Schoenewolf (1990), the speed of the emotional contagion depends on the energy used when expressing the emotion. In the workplace, this contagion is common not only with face-to-face conversations but also with phone calls, emails, and other forms of communication. On the other hand, direct or explicit emotional contagion happens when people's emotions are being explicitly manipulated to be converted to a specific emotion. This may happen, for example, if a leader wishes to motivate the team and gives a

motivational speech or offers a reward or treat to encourage team members. In the workplace, this manipulation has been studied for emotional labour, which, according to Hochschild (2012; 2013), is defined as positions that require the employee to display certain emotions to meet the requirements of the job. Some examples of positions requiring emotional labour include customer service employees, servers, nurses, and childcare workers. However, this type of emotional contagion has only been studied for those employees that engage in emotional labour, but not in an industry such as the professional services. Yet, some suggest that these studies would benefit both the academic literature and organisational practices (Xerri et al., 2022).

Table 5. Types of emotional contagion

Type	Description	Work Implications	References
Implicit	Automatic and unconscious contagion of emotions.	Implicit emotional contagion happens in the workplace with face-to-face conversations and with other forms of communication, such as phone calls or emails.	(Schoenewolf, 1990; Tee, 2015)
Explicit	This happens when people's emotions are being explicitly manipulated to be converted to a specific emotion.	Direct emotional contagion is common in emotional labour positions, such as nursing or childcare.	(Hochschild, 2012; 2013; Tee, 2015)

According to Bartel and Saavedra (2000), several resources determine the level and magnitude of emotional convergence in an organisation and more specifically, in a work team. Bartel and Saavedra argue that "convergence in members' moods and emotions is determined by task and social interdependence, membership stability, and mood-regulation norms" (2000, p. 197). Task and social interdependence refer to particular duties that require high levels of social interactions. When this interdependence happens, employees are more likely to converge emotionally. Membership stability happens with group members who are familiar with each other and who have worked together for a period of time. This stability could also increase the emotional contagion levels. Finally, Bartel and Saavedra (2000) suggest that catching others' emotions also depends on social norms. Social norms are unwritten rules and behaviours that are considered appropriate in a particular setting. These norms could also influence employees in converging emotionally with co-workers.

Research on workgroups demonstrates that performance and engagement improve when team members mimic and synchronise their emotions, feelings, and behaviours (Hackman, 1992). Regardless of these facts, few studies have examined employee wellbeing using a multilevel approach from the emotional contagion theory perspective. A summary of these studies and their main findings is presented in Table 6.

Table 6. Summary of empirical literature examining employee wellbeing from the emotional contagion theory perspective

Implications for employee wellbeing	MLA	Reference
Employee well-being profiles and service quality: A unit-level analysis using a multilevel latent profile approach	Yes	(Benitez et al., 2019)
How store managers' employee climate perceptions affect frontline employee, customer and store performance outcomes: An examination in the small-store setting	No	(Deitz et al., 2021)
The development of a model of employee wellbeing that considers both personal and situational predictors and both work and nonwork wellbeing indicators.	No	(Ilies et al., 2007)
Positive implications of family management in contrast to other types of management on employee wellbeing.	Yes	(Kammerlander et al., 2017)
How fairness assessments and organisational structure relate to employee wellbeing and mental health.	Yes	(Spell & Arnold, 2007)
How coaching leadership and positive management boost employee wellbeing with the mediating effect of psychological capital.	Yes	(Wang et al., 2017)

Note. MLA is multilevel analysis

The third proposition of emotional contagion theory proposes that people tend to converge emotionally with the people they have some contact. Following this proposition, employees tend to catch emotions from co-workers. Therefore, it could be argued that emotional contagion moderates the negative relationship between work stress and employee wellbeing. Several studies suggest that there is a moderating effect of co-workers' emotional contagion on employee wellbeing for employees that engage in emotional labour (Xerri et al., 2019; 2022). Emotional labour refers to those employees who need to manage emotional expressions with other parties as part of their professional role (Parks & McKay, 2022). Some examples of industries in which their employees are engaged in emotional labour include public administration, health care, hospitality and education (Wharton, 2009). Although this moderation effect that influences employee wellbeing has been partially tested with employees who engage in emotional labour, this research project expects to replicate similar findings for employees within the professional services industry in Australia and thus, hypothesises the following (see Figure 5 for the full hypothesised model):

- *Hypothesis 1. Emotional contagion moderates the relationship between work stress and employee wellbeing*

This hypothesis aims to answer the first research question which asks if emotional contagion among team members has an influence on work stress and employee wellbeing. This is a cross-level moderation between the emotional contagion at the team level that influences the employee-level relationship between work stress and employee wellbeing. This positive moderation effect of emotional contagion could assist employees with higher levels of work stress if they are in a supportive and positive team. Emotional contagion theory proposes that employees with high levels of work stress and emotional contagion could see a less dramatic impact on their wellbeing levels if they are surrounded by colleagues with high levels of employee wellbeing (Xerri et al., 2022). In contrast, co-workers with low levels of wellbeing could negatively impact employees with high levels of emotional contagion as they would experience even lower levels of employee wellbeing.

2.3. Identifying organisational resources that influence employee wellbeing and job stress

The antecedents of employee wellbeing have been studied through different theoretical lenses. While this thesis has used conservation of resources theory, as will be explained shortly, it is necessary to mention that some have also drawn upon the theoretical lens of job demands-resources theory. Job demands-resources theory developed by Bakker and Demerouti (2014) explains the dynamic between the job demands of a particular position and the resources (e.g., organisational, personal or others) available to the employee. In summary, job demands-resources theory argues that when job demands are high and the employee does not have many resources to draw upon, they are likely to experience higher levels of stress, which is likely to cause low levels of employee wellbeing (Bakker & Demerouti, 2014). However, the second research question guiding this thesis asks to what extent organisational resources impact the level of employee wellbeing. As such, it is necessary to go back a step to understand how employees' value organisational resources and which ones are considered essential.

Conservation of resources theory has often been used as a stress theory in contexts where a loss of important resources causes instability and, therefore, stress (Halbesleben et al., 2014; Hobfoll, 1989; 2002). However, positive organisational researchers have recently been using this theory to explain how people protect their resources to maintain or improve their wellbeing (e.g., Hakanen et al., 2018; Halbesleben et al., 2014; Neto et al., 2016; Xerri et al., 2022). In this thesis, the conservation of resources theory is used to identify which team resources influence employee wellbeing and to analyse to what extent they influence it. It is necessary to understand in what manner the theory conceptualises the employees' consideration for team resources. This understanding will assist in identifying the resources that would theoretically influence the wellbeing of employees. Identifying these resources is essential before studying the social

relationship between employees and their supervisors or amongst co-workers. This exploration assisted in the construction of the research model that is used in this study.

The conservation of resources theory is a resource-oriented model "based on the supposition that people strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources" (Hobfoll, 1989, p. 513). Resources are anything that people value (Halbesleben et al., 2014; Hobfoll, 1989). In the workplace, resources comprise all of the things employees value in their position and job. The value of each resource varies amongst employees and depends on their personal experiences and life circumstances (Halbesleben et al., 2014). For instance, high managerial support may be a valued resource to one employee but a threat to another. Thus, it is important to study each team separately when analysing how they value their resources. The reason for this approach is that employees within a team are more alike than employees from different teams (Bakker, 2015; Ilies et al., 2007; Klein et al., 1994), and, therefore, they are also more likely to value resources similarly. This is theorised in the multilevel organisational theory touched upon later (see section 2.6.), but first, it is necessary to understand how resources are structured and which are considered social and organisational resources.

Maslow (1968) proposed that people seek resources hierarchically: physical resources first, then social resources, and, finally, psychological resources. Physical resources include tangible elements that take up space and, in general, they have a monetary value. These include tangible items, from raw goods to buildings and vehicles (Abraham, 2011). Social resources exist in a person's social network and social ties (Bradford, 2015; Lin, 1983). In the workplace, these can include relationships with co-workers or supervisors. Finally, according to Hobfoll (1989), psychological resources are defined as "those entities that either are centrally valued in their own right (e.g., self-esteem, close attachments, health, and inner peace) or act as a mean to obtain centrally valued ends (e.g., money)" (2002, p. 307). These psychological resources are generally not considered team resources, as they are usually specific to the individual and not controllable by the organisation (Bookwala & Fekete, 2009). Examples of team resources examined in the literature over the past decades can be found in Table 7. These are classified according to their category (physical, social, or psychological).

Table 7. Organisational and team resources by category and kind

Category	**Resource**	**Reference(s)**
Psychological	Safety climate	(Dollard & Bakker, 2010; Kalshoven & Boon, 2012; Selenko et al., 2013; Farr-Wharton et al., 2022a)
Social	Supervisorial support	(Lee & Ashforth, 1996; Neveu, 2007; Wilson, 2010)

Physical	Organisational facilities	(Kalshoven & Boon, 2012)

According to the conservation of resources theory, organisational and team resources reduce work stress which enhances employee wellbeing (Salanova et al., 2005). The literature highlights that a safety climate and supervisorial support are two of the most important resources that reduce work stress and support employee wellbeing (e.g., Dollard & Bakker, 2010; Kalshoven & Boon, 2012; Selenko et al., 2013; Farr-Wharton et al., 2022a). However, there is little research on how these resources influence employee wellbeing, and there is even less in which the influence of the work team is considered. In order to fill this knowledge gap and identify the team antecedents of employee wellbeing, this research project considers the following two resources: safety climate and supervisorial support. Both resources are exhaustively explored in section 2.5. However, before exploring the resources that operationalise this thesis, it is essential to focus on the principles of conservation of resources theory.

Organisational facilities and physical resources are identified resources that could influence employee wellbeing. However, several studies also mention that these resources only have an indirect influence on employee wellbeing (Abraham, 2011; Bosmans et al., 2015). Those studies suggest that physical resources influence two different aspects. First, physical resources have an influence on social and psychological resources. Second, they influence stress and wellbeing. If those resources have an indirect influence, they are not the primary focus of this project which tries to identify the team influencers on employee wellbeing and to measure the influence.

The conservation of resources theory has several principles with certain workplace implications, which are reflected in Table 8. The first principle is the primacy of resource loss, which suggests that a resource loss is psychologically more harmful than a resource gain (Hobfoll, 2001). According to many empirical organisational behaviour studies, a loss of resources at work can explain work stress and strain (Halbesleben & Buckley, 2004; Hobfoll, 2001), depression (Kessler et al., 2011), burnout (Shirom, 1989), cardiovascular disease (Melamed et al., 2006), high blood pressure, and excessive levels of cortisol (de Vente et al., 2003). However, more recently, positive organisational scholars have analysed how a resource gain can be highly beneficial for organisations, teams, and employees, as positive emotions are as significant as negative emotions (Seligman et al., 2005). This would mean that team resources can have a significant impact on employee wellbeing.

Emotional contagion theory also posits that in the situation of resource shortfalls or when there is a recession of resources due to an external or internal cause, resource gains will have a greater impact on the wellbeing of employees. For example, during the pandemic of COVID-19 several

organisational and team resources were reduced (Podubinski & Glenister, 2021). However, according to studies that had analysed previous resource shortfalls, it can be concluded that a resource gain in this setting will have a greater impact on employee wellbeing (Halbesleben et al., 2014; Stein & Cropanzano, 2011).

The second principle is resource investment, which suggests that people tend to invest resources to avoid a loss of other resources or to gain new resources (Hobfoll, 2001). Coping is a clear example of an investment in resources to avoid further resource losses (Ito & Brotheridge, 2003; Vinokur & Schul, 2002). According to Lazarus and Folkman's (1984) coping model, people use resource investment to cope only as an attempt to limit stress. Many studies have analysed how resource losses affect work intensity, engagement, performance, emotional exhaustion, or compassion towards co-workers (Halbesleben & Bowler, 2007; Halbesleben et al., 2014; Hochwarter et al., 2008; Wheeler et al., 2013). Employee participation in decision making is considered a resource investment, as it can be a way to gain new resources, but it also incurs a risk of losing other resources (Lee & Ashforth, 1996; Neveu, 2007; Ng & Feldman, 2012).

Table 8. Principles of conservation of resources theory

Principle	Description	Work Implications	References
The primacy of resource loss	Resource loss is more relevant than resource gain.	Employment-related losses will have a more significant impact than similar resource gains, causing stress, burnout, and several types of disease. Resource gains at work will have a greater meaning in the situation of resource shortfalls.	(Cacioppo & Gardener, 1999; Halbesleben et al., 2014; Seligman et al., 2005; Stein & Cropanzano, 2011; Taylor, 1991; Kahneman et al., 1982; Vinokur & Schul, 2002; Wells et al., 1997)
Resource investment	People tend to invest resources to avoid a loss of other resources or to gain new ones.	Employees may want to invest resources to gain certain resources and protect themselves from losing others or to recover after a resource loss.	(Halbesleben & Wheeler, 2008; Halbesleben et al., 2009; 2014; Ng & Feldman, 2012; Vinokur & Schul, 2002)

Within the resource investment process, Hobfoll (1989; 2001) describes four corollaries, which are summarised in Table 9. More specifically, these corollaries are used to explain the complexity of the principle of resource investment. The first corollary states that employees rich in resources are better positioned, as they can invest those resources to protect themselves from losing other resources or to gain new ones (Halbesleben et al., 2014). On the other hand, employees who do not have as many resources tend to be more conservative, as they are more likely to experience resource losses. The second and third corollaries explain opposite "spirals". Corollary 2 describes the resource loss spiral, in which an employee who loses resources tends to be more prone to

continue losing resources; on the contrary, an employee who gains resources has more options to continue gaining resources because they can invest their current resources (Hobfoll, 2001). The final corollary, resource protectiveness, states that an employee is more likely to protect their resources more defensively if they are short on resources or currently losing resources (Benight et al., 1999; Halbesleben & Bowler, 2007; Halbesleben et al., 2014; Hobfoll, 1989). In sum, these corollaries explain the order of events that occur when an individual is losing or gaining resources.

Table 9. Corollaries of the conservation of resources theory

Corollaries	Description	Work Implications	References
Resource richness	People with more resources are better positioned.	Employees with more resources are better positioned, as they can invest current resources in gaining new resources and preventing the loss of others. On the other hand, employees with fewer resources tend to be at a higher risk of losing their resources and experiencing job burnout, stress, anxiety, or low job engagement.	(Demerouti et al., 2004; Mäkikangas et al., 2010; Whitman et al., 2014)
Resource loss spiral	Resource losses lead to future resource losses.	An employee who loses resources tends to be more prone to continue losing resources.	(Demerouti et al., 2004; Halbesleben et al., 2014; Hobfoll, 2001)
Resource gain spiral	Resource gains advance further resource gains.	An employee who gains resources has more options to continue gaining resources because they can invest their current resources.	(Hakanen et al., 2011; Halbesleben & Wheeler, 2015; Mäkikangas et al., 2010; Xanthopoulou et al., 2009)
Resource protectiveness	Lack of resources leads to extreme resource conservation.	An employee is more likely to protect their resources more defensively if they are short on resources or currently losing resources.	(Halbesleben, 2010; Halbesleben & Bowler, 2007; Halbesleben & Wheeler, 2011)

In the conservation of resources theory, a gain in team resources can have a positive influence on employee wellbeing. Freud introduced the idea that humans tend to pursue what will increase their wellbeing and seek to create a pleasurable world (Hobfoll, 1989). Following the principles of social exchange theory, humans tend to conduct a cost-benefit analysis of their relationships and choose those that have positive outcomes. The conservation of resources theory also incorporates this idea, as people tend to retain, protect, and build resources that reduce their stress and enhance their wellbeing (Halbesleben et al., 2014). In the workplace, employees are more likely to experience a greater sense of wellbeing when they have a surplus of resources such as managerial support or a valuable relationship with their supervisor. The conservation of resources theory suggests that positive resources, such as perceived managerial priority, help employees

obtain more resources, and this leads to a positive spiral that can positively influence wellbeing (Kalshoven & Boon, 2012).

On the other hand, resource losses cause harm to employee wellbeing, causing stress. Per the second principle of the conservation of resources theory, employees tend to invest resources to prevent the loss of other resources, which causes stress. According to Lazarus and Folkman (1984, p. 19), stress is defined as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her wellbeing". Abusive management control can trigger a quick loss of resources at work, which causes feedback avoidance to reduce emotional exhaustion and avoid further loss (Whitman et al., 2014).

There are few studies in the empirical literature exploring employee wellbeing from the perspective of the conservation of resources theory, and there are even fewer that are multilevel studies. Remarkably, all these studies are very recent; in general, most of them have been conducted in the last five years. A summary of these studies with their main findings is presented in Table 10. For instance, Bayhan Karapinar et al. (2019) used multilevel analysis to examine the link between workaholism and employee wellbeing with the moderating effect of instrumental spousal support and the mediating effect of work-family conflict. They found that instrumental spousal support acts as the primary resource of tangible support, which is invested in gaining wellbeing and reducing work-family stress. Another example is a multilevel analysis that studied the impact of authentic leadership, rewards, and meaningful work on employee wellbeing (Salmee et al., 2020). The results demonstrated the positive impact of authentic leadership, non-financial rewards, and meaningful work on employee wellbeing, while financial rewards did not always contribute to positive employee wellbeing.

Table 10. Summary of empirical literature examining employee wellbeing from the perspective of the conservation of resources theory

Resources	**Implications for employee wellbeing**	**MLA**	**Reference**
• Employee wellbeing • Work-family time • Spousal support	The link between workaholism and employee wellbeing, the mediating role of work-family conflict, and the moderating role of instrumental spousal support.	No	(Bayhan Karapinar et al., 2019)

• Employee wellbeing • Authentic leadership • Rewards • Meaningful work	The positive impact of authentic leadership, non-financial rewards, and meaningful work on employee wellbeing.	Yes	(Salmee et al., 2020)
• Employee wellbeing • Job demands and crafting • Job resources • Employee engagement • Performance	A multilevel analysis of employee wellbeing needs, including job demands, job resources, job crafting, employee engagement, and work performance.	Yes	(Bakker, 2015)
• Psychological capital • Perceived service climate • Tenure • Perceived health status • Emotional stability • Social support	Influence of workplace incivility, psychological capital, and perceived service climate on employee's emotional exhaustion (wellbeing).	Yes	(Chang et al., 2019)
• Employee wellbeing • Emotional stability • Tenure • Social support	The impact of workplace incivility on employee wellbeing with the mediating effect of emotional exhaustion.	No	(Akhtar et al., 2017)
• Organisational resources • Employee engagement • Performance • Customer loyalty	The relationship between organisational resources and work engagement on performance (wellbeing) and customer loyalty.	No	(Salanova et al., 2005)
• Corporate entrepreneurship • Employee engagement • Performance	The role of corporate entrepreneurship on performance and the mediating role of employee engagement (wellbeing).	No	(Hoque et al., 2017)
• Leader-member exchange • Psychological capital	A comparison of the role of managerial support and emotional contagion on psychological capital and wellbeing within the healthcare sector.	No	(Xerri et al., 2022)

2.4. Theoretical blending as theoretical framework

The three underpinning theories that drive this study have been presented: social exchange theory, emotional contagion theory and conservation of resources theory. The nuances of human relations impose a particular complexity when analysing the impact of colleagues and organisational resources on employees' wellbeing. As such, this project draws on the intersection between three different theories to set the theoretical framework. This process of using several theories is understood as "theoretical blending" (Cornelissen & Durand, 2012), which helps understand and study a problem through different theoretical lenses which give us a broader perspective on complex topics such as this one. It has been identified that there has been little research on the antecedents of employee wellbeing, and even less if considering those antecedents that could be accessed by the organisation to promote and support employee wellbeing. This subsection explores the intersection or the theoretical blending of these three theories (see Figure 2) to further understand the theoretical background that frames this project and that has assisted in developing the research questions and research model.

This project aims to understand the influence of a team on its employees' wellbeing and explore its organisational antecedents. Therefore, this investigation examines the value of workplace interactions and how these interactions impact the level of employee wellbeing. Social exchange theory explains most workplace behaviours (Cropanzano & Mitchell, 2005) and describes relationships as result-oriented social behaviours (Blau, 1964). It emphasises the importance of studying the relationships that occur within the workplace to identify how to support and promote employee wellbeing. However, several studies mention that social exchange theory has important limitations such as its ability to explain almost every workplace behaviour (Babič et al., 2019; Cropanzano et al., 2016; Meira et al., 2021). Some suggest that emotional contagion theory explains social interaction between team members with a deeper focus on how co-workers tend to synchronise their emotions and feelings (Stelman, 2016; Tee, 2015). This is strongly related to the fact that employees who belong to the same team are more alike than those from other teams (Kozlowski & Klein, 2000). All this suggests that in order to analyse how the employees' wellbeing is influenced, it is necessary to analyse clusters of teams instead of employees individually.

Social exchange theory establishes that the two main types of relationships to study are those between the employee and their supervisor and among co-workers (Mitchell et al., 2012; Vine, 2004). Employees choose to enter and maintain relationships when they receive something in exchange (Emerson, 1976). In a workplace, employees maintain relationships with co-workers or a supervisor if they feel supported or if their wellbeing increases. Social exchange theory suggests that if these relationships involve high-quality social exchange, it will result in higher levels of

trust (Cropanzano & Mitchell, 2005) as well as high levels of employee wellbeing (Milner et al., 2015). However, if it does not become a beneficial relationship, the relationship may end, leading to higher turnover and burnout rates (Danna & Griffin, 1999). Therefore, it has been suggested that better relationships with supervisors and co-workers lead to higher wellbeing. Yet, there are very few studies that analyse these relationships and take the team influence into account. The team influence is important as it is theorised to have an influence on how the employees perceive their workplace relationships.

Studying the value of these workplace interactions is essential in answering the research questions guiding this study. Employees tend to synchronise their emotions with those around them (physically or virtually). Relationships amongst co-workers can influence employee wellbeing (Benitez et al., 2019). Some studies have concluded that employees can develop mutually shared emotions and moods when working together in a team (Xerri et al., 2022). This has been studied in emotional contagion theory in concert with social exchange theory. Moreover, emotional contagion theory does not only argue that team members tend to synchronise emotions and moods with each other but also suggests that by converging emotionally with co-workers, employees can experience higher or lower levels of wellbeing depending on the co-workers' emotions.

According to the conservation of resources theory, employees will contribute their best efforts towards building, retaining, and protecting their resources in order to reduce their work stressors and support their wellbeing. Conservation of resources theory points out several resources to be considered when analysing the influences on employee wellbeing. The literature also points out that the two most prominent team resources that can influence employee wellbeing are a safety climate (Farr-Wharton et al., 2022a) and the perception of supervisorial support (Xerri et al., 2022). Moreover, these two team resources are strongly related to the two types of relationships that have been identified as essential when analysing the antecedents of employee wellbeing.

Conservation of resources theory helps leverage emotional contagion theory. Both theories are beneficial to be examined in tandem and guided by social exchange theory. An important consideration is that according to emotional contagion theory, the perception of how the team, supervisor, and organisation prioritise their safety and wellbeing is influenced by the employee's relationship with their supervisor (Blau, 1964). In most cases, relationships with greater trust tend to be considered a valuable resource or provide a higher benefit to the parties, while those marked by distrust or fear tend to have a lower value and may end sooner. Studies suggest that a positive relationship with other co-workers can influence the relationship with the supervisor and how managerial practices are perceived by employees (Bartel & Saavedra, 2000; Benitez et al., 2019). Social exchange theory proposes that a positive relationship with a direct supervisor will

contribute positively to the wellbeing of the employee (Graen & Uhl-Bien, 1995). Furthermore, the conservation of resources theory identifies positive and constructive supervisorial support as a team resource that contributes positively to employee wellbeing. The literature suggests that this is usually studied with the analysis of the perception of supervisorial support from the employee perspective using the Leader-member exchange concept (Graen & Uhl-Bien, 1995; Xerri et al., 2022)

Through the social exchange theory lens, when an employee perceives there to be a positive safety climate within their organisation and ideal levels of supervisorial support, their wellbeing will be higher (Bond et al., 2010; Dollard & Bakker, 2010). In contrast, if an employee does not feel that the organisational policies and practices support their psychological and physical health or does not perceive support from their direct supervisor, their wellbeing could be negatively impacted. In other words, the intersection between the three theories propose that employees tend to respond with higher performance and extra-role behaviours when they perceive that the organisation is investing and believing in them (Cropanzano & Mitchell, 2005).

2.5. Employee wellbeing

2.5.1. From happiness to wellbeing

Happiness has been studied since the time of renowned Ancient Greek philosophers such as Democritus (460 BCE - 370 BCE), known as the "laughing philosopher" because of his emphasis on the value of cheerfulness (Annas, 2002; Berryman, 2016). Epicurus (341 BCE - 270 BCE) had a hedonistic view of happiness and defined it negatively as the absence of pain and fear (Bergsma et al., 2008). More profoundly, Plato's (428-7 BCE - 348-7 BCE) *Republic* highlights the relationship between happiness and morality, or "the idea that one's own happiness is dependent upon acting for the sake of one's community" (Emond, 2006, p. 1). Aristotle (384 BCE - 322 BCE) introduced the concept of eudaimonia (translated as happiness or, more accurately, human flourishing (Anscombe, 1958; Fowers, 2016; Robinson, 1989), wherein happiness is achieved by pursuing that which gives life meaning and cultivating unique human endowments of virtue (Vittersø, 2016). Aristotle defined virtue as the mean between deficit and excess (Brink, 2000). In his work, Aristotle stated that the goal of any human is to reach a state of eudaimonia (Anscombe, 1958; Fowers, 2016; Robinson, 1989).

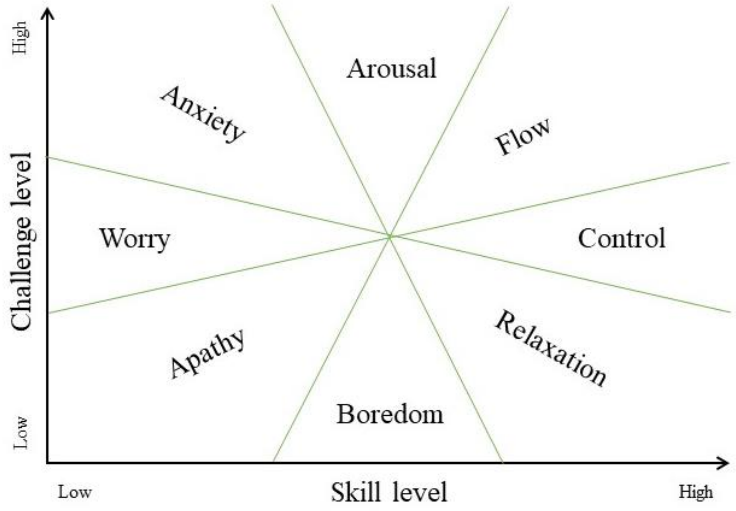
Many other philosophers have also linked the concepts of happiness, morality, and virtue. Examples include well-known Ancient Greek philosophers such as Antisthenes (Prince, 2006), Stoics such as Zeno of Citium (Annas & Wang, 1989; Engstrom & Whiting, 1993), philosophers from the Middle Ages such as St. Thomas Aquinas (Elders, 2019), and philosophers from the Modern Age such as Jeremy Bentham (Burns, 2005). The study of happiness has also attracted

attention from relatively contemporary academics like Robert Nozick (Rachlis, 1978). However, more recently, the study of happiness has been increasingly replaced with the study of wellbeing as some researchers have suggested that wellbeing is a broader concept that includes happiness (Diener, 1984; Dodge et al., 2012). Some of the most critical studies on wellbeing include those of Diener et al. (1999), Wright and Cropanzano (2000), and Dodge et al. (2012). Before exploring the definition of wellbeing, the definition and components of happiness should also be outlined.

> A person can make himself happy, or miserable, regardless of what is actually happening "outside", just by changing the contents of consciousness. We all know individuals who can transform hopeless situations into challenges to be overcome, just through the force of their personalities. This ability to persevere despite obstacles and setbacks is the quality people most admire in others, and justly so; it is probably the most important trait not only for succeeding in life, but for enjoying it as well. To develop this trait, one must find ways to order consciousness so as to be in control of feelings and thoughts. It is best not to expect shortcuts will do the trick. (Csikszentmihalyi, 1991, p. 24)

Many have studied the pursuit of happiness and how can it be sustained. Csikszentmihalyi (1991) states that happiness is not strongly correlated with people's income after basic needs have been met. After that point, to increase happiness, the content of consciousness has to be changed by putting oneself in a stage of optimal experience called *flow*. Csikszentmihalyi (1991) understands happiness as engagement, and flow is a state where concentration is so intense that one cannot pay attention to anything else, and one's sense of time becomes distorted. Flow is the balance of challenge and skills (see Figure 3). If a challenge is too high for one's abilities, anxiety sets in, and the person feels stressed and alert. On the other hand, if an activity is not challenging enough and the person's skills are too great, they become relaxed and bored, which can lead to depression (Csikszentmihalyi, 1991). Middle points could lead to arousal when the challenge level is high, but the skill level is not as advanced as it should be. Or boredom if the challenge level is not high enough for the individual's set of skills.

Figure 3. Csikszentmihalyi's model of flow

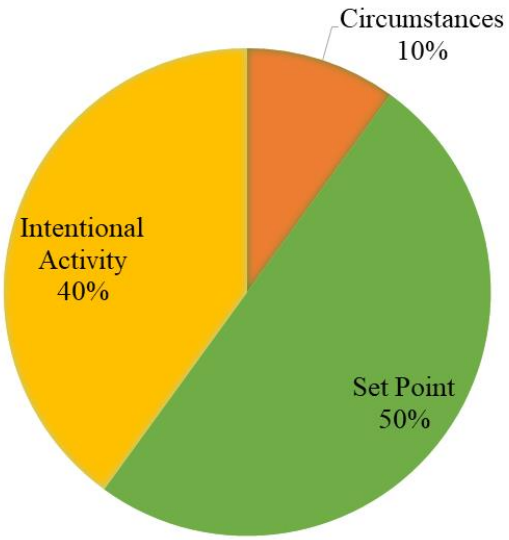


Note. Mental state depending on the difficulty of the faced challenged and the skill level. Adapted from *Flow: The psychology of optimal experience* (1st Ed.), by M. Csikszentmihalyi, 1991, Harper & Row. Copyright 2000 by Global Learning Communities.

Another study has suggested that a person's happiness level has three major contributors: genetic set-range, life circumstances, and intentional or voluntary activities (Lyubomirsky et al., 2005) (see Figure 4). Genetic set-range is a mix of biological, psychological, and societal influences that characterise a person's thoughts and actions throughout their lives. Indeed, there is consensus that genetic set-range determines around 50% of a person's happiness (Braungart et al., 1992; Diener et al., 1999; Lyubomirsky et al., 2005; Tellegen et al., 1988), although there are several studies that propose that this could be as high as 80% (Lykken & Tellegen, 1996). Another 10% is determined by a person's life circumstances such as their economic status, age, physical attractiveness, the place they live, or other life events like getting married or having children (Argyle, 1999; Diener et al., 1999; Lyubomirsky et al., 2005).

The remaining 40% is determined by one's intentional activities (Gupta & Singh, 2017; Lyubomirsky et al., 2005), or actions whereby a person invests effort into building the architecture for sustainable happiness. Many scholars have analysed which activities can boost happiness. Lyubomirsky et al. (2005) have classified these activities into three different types: behavioural, cognitive, and volitional. Behavioural activities include physical exercise or healthy eating (Keltner & Bonanno, 1997; Magen & Aharoni, 1991). Cognitive activities include gratitude journals, writing about life goals, or actively reasoning (Emmons & McCullough, 2003; King, 2001; Seligman, 1998). Last but not least, volitional activities can include self-concordance and goal attainment (Sheldon & Houser-Marko, 2001) or working on meaningful tasks (Ferrari et al., 2007).

Figure 4. Pie chart of the sustainable happiness model



Note. Pie chart that represents the sustainable happiness model, where 10% of someone's happiness is due to personal circumstances, 50% due to their genetic set point, and the other 40% due to their intentional activities. Adapted from "Pursuing happiness: The architecture of sustainable change", by S. Lyubomirsky, K. M. Sheldon, & D. Schkade, 2005, *Review of General Psychology, 9*(2), p. 116. (https://doi.org/10.1037/1089-2680.9.2.111). Copyright 2005 by The American Psychological Association Division 1 (Society for General Psychology).

Happiness is typically understood as a state of mind which is purely philosophical or a life that is desirable and goes well, including psychologically (Argyle, 2001). Over the last two decades, the majority of articles have referred to the second case using the term wellbeing (Diener, 1984; Dodge et al., 2012).

What is wellbeing? Wellbeing is a nebulous term that is difficult to define. Wellbeing includes three dimensions: physical, social, and psychological (Grant et al., 2007). Crucially, it is necessary to have "a complete state of physical, mental, and social wellbeing and not merely negative as the absence of disease or infirmity" (Grad, 2002, p. 981). All three dimensions are equally important and needed to have a good level of wellbeing. According to Maslow (1998), to achieve strong wellbeing, these resources are pursued hierarchically, beginning with physical resources, then social resources, and, finally psychological resources. Physical resources include shelter, food, water, and clothing and, secondarily, healthcare and mobility. Social resources include "participating in the community, being accepted in public, and helping others" (Grant et al., 2007, p. 5). Finally, psychological resources include self-esteem, self-respect, recognition, freedom, self-actualisation, and a sense of belonging (Maslow, 1998).

These three wellbeing dimensions are included to varying extents in the two approaches that many scholars have used to define wellbeing, namely hedonism and eudaimonia (Peterson et al., 2005; Seligman, 2002). The hedonic approach defines wellbeing as life satisfaction – or how people feel and show their emotions and feelings (Anand, 2016) – and focuses on happiness, pleasure,

positive affect, and low negative affect (Bradburn, 1969; Diener, 1984; Kahneman et al., 1999; Lyubomirsky & Lepper, 1999). Happiness has been extensively defined in the previous paragraphs and is just one component of wellbeing. Positive affect refers to positive emotions such as cheerfulness, contentment, energy, and joy, while negative affect refers to negative emotions such as anger, anxiety, sadness, depression, or fear. The other wellbeing approach is the eudaimonic perspective, and it emphasises the fulfilment of finding meaning and positive psychological functioning through, for example, achieving personal career goals (Rogers, 1961; Ryff, 1996; Waterman, 1993). As mentioned, the eudaimonic approach has been studied since Aristotle, and its version of wellbeing is also known as the good, ultimate, and engaged life (Bauer et al., 2008; Deci & Ryan, 2008; Kashdan et al., 2008).

More recent studies have suggested that wellbeing is a multi-dimensional construct that includes both the hedonic and the eudaimonic perspectives (Brunetto et al., 2022a; Kim & Kim, 2021; Xerri et al., 2022). There are both theoretical and practical reasons to approach wellbeing as a multi-dimensional construct (Farr-Wharton et al., 2022b). Theoretically, wellbeing is comprised of various aspects, including physical, psychological, and social facets (Grant et al., 2007; Seligman, 2012). On the practical side, statistics have demonstrated that unidimensional measures are strongly affected by a respondent's mood at the time of the study (Kern et al., 2015). Some scholars have argued that wellbeing is a stable condition (Dodge et al., 2012) or that it focuses on authentic happiness (Bognar, 2010), but more recent studies have suggested that it is a multi-dimensional, dynamic concept that goes beyond what has been defined as wellbeing thus far (Brunetto et al., 2021).

2.5.2. From wellbeing to flourishing

Over the past two decades, there has been increasing recognition of the value of positive emotions (Seligman et al., 2005). It has been posited that positive emotions are as authentic as negative emotions and that they enhance wellbeing (Aspinwall & Brunhart, 1996; Danner et al., 2001; Harker & Keltner, 2001). Additionally, one study found that employees with more positive emotions had better performance evaluations, showed greater endurance, and chose higher goals (Barry et al., 1994). Emotional contagion theorists have pointed out that positive emotions can be as contagious as negative ones (Barsade, 2002; Xerri et al., 2022). Similarly, according to cognitive theory, people can create a more desirable present and future by choosing positive emotional responses to past and present experiences (Sharot & Sunstein, 2020). Positive emotional responses include gratitude (Diener et al., 2020; Sturm et al., 2020) and forgiveness (Keltner & Cowen, 2021).

The broaden and build theory of positive emotions suggests that "certain discrete positive emotions, although phenomenologically distinct, all share the ability to broaden people's momentary thought-action repertoires and build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources" (Frederickson, 2001, p. 219). Studying the non-linear dynamics model of team performance, Keyes (2002) and Fredrickson and Losada (2005) developed the psychological concept of *flourishing*, defined as "path-breaking work that measures mental health in positive terms rather than by the absence of mental illness" (Frederickson & Losada, 2005, p. 678).

Seligman (2012) also incorporated the concept of flourishing into his theory of wellbeing. He proposes that wellbeing is a dynamic construct that goes beyond happiness, which, when considered on its own, hides the real and complex nature of human flourishing. Seligman (2012) identifies a move in the literature from a concern with happiness to a concern with wellbeing. This is due to an increase of interest in increasing flourishing. Seligman (2012) introduced the PERMA model of flourishing, which has five domains: Positive emotions (P), Engagement (E), positive Relationships (R), Meaning (M), and Accomplishment (A). Positive emotions refer to the hedonic feeling of happiness, such as feeling joyful or content, and can only be assessed subjectively. Engagement refers to the eudaimonic concept associated with finding meaning, a positive psychological connection with the performed activities, and the presence of a flow state. Relationships include the hedonic aspect of positive affect and low negative affect and refer to friends, family, intimacy, or social connections. Meaning is the feeling of contributing to something greater than oneself. Accomplishment refers to having a sense of achievement and making progress towards goals, as per the eudaimonic component of wellbeing, even when this progress involves no positive emotions, meaning, or relationships.

Frederickson (1998; 2001; 2003; 2005) has extensively studied positive emotions. Examples of positive emotions include amusement, compassion, forgiveness, gratitude, hope, interest, joy, or love. Conservation of resources theory states that resources are everything that is valued by the individual, including objects, conditions, social support, energy, and so on (Halbesleben et al., 2014). According to Frederickson (1998; 2001; 2003; 2005), the benefits of positive emotions include intellectual, physical, social, and psychological resources. Intellectual resources help in the acquisition of new information and problem-solving skills. Physical resources help to develop coordination, strength, and cardiovascular health. Social resources solidify and create bonds. Finally, psychological resources help to develop resilience, optimism, a sense of identity, and goal orientation. As mentioned, Csikszentmihalyi (1991) studied the meaning of engagement and flow experience (also known as "being in the zone"). Flow is a mental state of full engagement

in which the skill level of the employee is balanced with how challenging the task is, as seen in Figure 3.

Positive relationships are also an essential aspect of PERMA. In the workplace, this includes interactions with other employees, co-workers, managers, and supervisors as well as with clients. A key to positive relationships is active constructive responses that include enthusiastic support, eye contact, and authenticity (Gable et al., 2004). The active constructive response is the opposite of a passive destructive response, which turns the focus inward, from the respondent to the interlocutor, and tends to avoid and ignore the speaker.

Seligman also stressed the need for finding meaning to achieve flourishing. The concept of finding meaning was introduced as a consequence of suffering in 1959 by Viktore Frankl, who initially tested his theory as an inmate in a Nazi death camp during World War II (Frankl & Lasch, 2006). However, as positive organisational scholars have been paying special attention to positive emotions, they have moved from the analysis of suffering to finding meaning in the positive to achieve flourishing. In organisational studies, several researchers have demonstrated how meaning can be created in the workplace, and three different orientations have been suggested (Wrzesniewski et al., 1997): 1) job orientation, which focuses on material rewards; 2) career orientation, where employees find meaning in their position and tasks and are motivated by success; and 3) calling orientation, which happens when people find their work inherently fulfilling.

2.5.3. Employee wellbeing and work stress

General individual wellbeing is difficult to define and measure, and employee wellbeing is similarly complex (Dodge et al., 2012; Juniper, 2011; Kiran, 2021). Employee wellbeing has attracted attention in organisational research (e.g., Alotaibi, 2022; Brunetto et al., 2022a; Farr-Wharton et al., 2022b; Roche et al., 2022), but very little has been done from an individual perspective, and almost no research has involved multilevel analysis (Tortia et al., 2022; Wang et al., 2022). The lack of agreement on the definition and measurement of wellbeing complicates its utility and blurs perspectives on its antecedents (Adamou et al., 2020; Chen et al., 2021). Without an agreed-upon theoretical framework, it is challenging to create a body of knowledge because there are no defined principles to question (Cook & Campbell, 1976).

According to the Australian Fair Work Ombudsman, an employee is "a person that's hired to provide a service to a company either on a full-time, part-time or casual basis in exchange for payment" (2022, para. 1). In Australia, full-time employees are engaged to work 38 hours per week, with some exceptions depending on contracts. A part-time employee works regular hours that are fewer than 38 hours per week. A casual worker works by the hour or day when needed

and is paid on a casual basis. Volunteers are not generally considered employees as they are not paid.

According to the conservation of resources theory, employees would try anything to minimise their stress levels and to protect their wellbeing, as a good level of wellbeing is the final goal of an employee (Halbesleben et al., 2014). To protect their levels of employee wellbeing, workers are likely to be willing to invest additional resources to maintain or reduce their stress level and support their wellbeing (Loh et al., 2018). Employee wellbeing focuses on workers' physical, social, and psychological wellness at work. The physical aspect includes employees' health and the performance of physical activities and exercise to reduce the risk of developing diseases such as obesity, type 2 diabetes, or cardiovascular disease (de Cieri et al., 2019; Loh et al., 2019). The social aspect is characterised by the quality of workplace relationships and professional affect. Finally, the psychological aspect includes job engagement and psychological functioning (Brunetto et al., 2011).

Some scholars have suggested that workplace wellbeing only includes the psychological component (Edgar et al., 2015; Vanhala & Tuomi, 2006; Wright & Cropanzano, 2000) and that it is characterised by psychological safety, as measured by the Team Psychological Safety Scale developed by Edmondson (1999). However, this definition neglects other elements of wellbeing as employee wellbeing does not only focus on the safety or the psychological component. It also includes physical and social components (Brunetto et al., 2011; Diener, 2009; Grant et al., 2007).

Employee wellbeing includes both hedonia and eudaimonia.

As with general wellbeing, psychological, physical and social dimensions of wellbeing are included in both the hedonic and eudaimonic approaches to wellbeing (Peterson et al., 2005; Seligman, 2002). Multiple studies define employee wellbeing as a multi-dimensional construct, combining both hedonia and eudaimonia (e.g., Brunetto et al., 2022a; Huppert & So, 2013; Xerri et al., 2022). The hedonic approach defines employee wellbeing in terms of job satisfaction, happiness, pleasure, positive affect, and low negative affect with co-workers, managers, supervisors, and clients (e.g., Baselmans & Bartels, 2018; Berezan et al., 2020; Diener, 1984; Kahneman et al., 1999; Lyubomirsky & Lepper, 1999). The eudaimonic approach emphasises the fulfilment of finding meaning in one's job, engagement, achievement, and positive psychological functioning through the achievement of personal career goals (e.g., Oliver, 2022; Ryff, 2019; Ryff et al., 2021; Waterman, 1993).

Several studies have analysed the cost of employee wellbeing and how it can be contagious in workgroups. Importantly, low wellbeing can negatively affect work teams (Baptiste, 2008).

Potential causes of poor employee wellbeing include personal, physical, or emotional suffering (Holman, 2002); stress and job-related anxiety (de Jonge & Schaufeli, 1998); and organisational issues such as downsizing, harassment, poor culture, or politics (Farr-Wharton et al., 2022b; Hall et al., 2016; Xerri et al., 2019). According to the Australian Institute of Health and Welfare (2022), during 2019-2020, the Australian government spent $11 billion on mental health-related services. This represents a 3% increase since the Australian expense on mental health in 2015-2016. This poses a considerable cost for organisations as mental illness is associated with poor health behaviour and the loss of other important resources such as work-life balance (Doran & Kinchin, 2017). In 2021-2022, the cost of absenteeism for the Australian economy was more than $44 billion, while the cost of presenteeism was around $35 billion (Asare et al., 2022). Several authors have argued that a reduction in workplace bullying and the use of sick leave along with an increase in business profitability are the most important consequences of good employee wellbeing (Edgar et al., 2015). Other scholars have also noted overall societal benefits of strong employee wellbeing (Johnson et al., 2020).

Nonetheless, there is a call for academic studies that focus on cost-effective interventions to support organisations in their employee wellbeing programs (Murphy et al., 2023). Accordingly, the aim of the present study is to develop a deeper understanding of the extent to which employee wellbeing is influenced by work teams from a multilevel perspective. This project assumes that employees are not isolated from other workers and supervisors and that these interactions influence employee wellbeing. Employee wellbeing is affected by personal traits and circumstances as well as by organisational resources, policies, and practices and the workplace relationships between co-workers, managers, and clients (Xerri et al., 2022). As this study focuses on the team antecedents of employee wellbeing, the relationship between employees and clients or other stakeholders is not considered because such relationships are not a team component that can be managed by the organisation.

Employee wellbeing is influenced by the levels of work stress, which is influenced by the employees' perceptions of managerial priority and support (Farr-Wharton et al., 2022b). Moreover, employees with low levels of work stress, tend to experience higher levels of employee wellbeing (Gulzar et al., 2020). In contrast, employees with high levels of stress, are likely to experience lower levels of employee wellbeing. As such, this study hypothesises that:

- *Hypothesis 2. Work stress is negatively associated with employee wellbeing.*

This research study hypothesises that there is a negative relationship between work stress and employee wellbeing at both levels of study: the team- and the employee-level. The employee-level relationship is the one impacted by Hypothesis 1, which was presented in section 2.2.

2.5.4. Wellbeing measures

Before exploring the proposed antecedents of employee wellbeing, it is necessary to obtain a deeper understanding of how employee wellbeing is quantified. This section presents a review of current wellbeing measures that compares, and contrasts approaches to identify an effective measurement for employee wellbeing. There are numerous psychometric and non-psychometric scales that have been proposed and applied over the past 50 years. The objective of this subsection is to gain a deeper understanding of available measures and to determine if any of these are compatible with this project's definition of employee wellbeing.

Table 11 lists 27 wellbeing measures classified according to their use, applicability in the workplace, and origin (i.e., academic or professional). Their use in the workplace is essential as employee wellbeing differs from general wellbeing. Additionally, a review of all the scales (including their definitions, scale items, and statistics from the initial study and from subsequent studies using the scales) is included in the Appendix. In some cases, this list also includes correlations found between the studies.

The number of wellbeing measures indicates the level of interest in applied research on the topic (Kun et al., 2016). However, the lack of cohesion obscures the utility and applicability of these studies for the workplace. Most of these measures are subjective self-reporting indicators that ask questions about individuals' feelings, experiences, and judgements of their lives (National Economic Foundation, 2014). Self-reporting is the most commonly used method for measuring pleasure, happiness, and wellbeing, and it is therefore an excellent way to study employee wellbeing. However, some of these instruments, such as the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999), only reflect the hedonic approach to wellbeing, while others only capture the eudaimonic perspective, such as the Questionnaire for Eudaimonic Wellbeing (Waterman et al., 2010). Very few measures encompass both approaches as a multi-dimensional construct. This study focuses on analysing these measures as they comply with the proposed definition of employee wellbeing.

Table 11. Measures of wellbeing

Measure	**Reference**	**Origin**	**Items**	**Application to work**
Affect Balance Scale	(Bradburn, 1969)	Academic	9	Yes
Authentic Happiness Inventory	(Peterson et al., 2005)	Academic	18	Yes
Emotional Exhaustion Subscale	(Maslach & Jackson, 1981)	Academic	9	Yes

Employee Psychological Wellbeing	(Brunetto et al., 2011)	Academic	4	Yes
Fordyce Happiness Measure	(Fordyce, 1988)	Academic	2	No
Friedman Well-being Scale	(Friedman, 1992)	Academic	20	Yes
High Performing Workplace Index	(South Australia Government, 2015)	Government	54	Yes
Index Sustainable Economic Wellness	(Cobb & Daly, 1989)	Academic	NA	Yes
Occupational Hardiness Questionnaire	(Moreno-Jiménez et al., 2014)	Academic	15	Yes
Oxford Happiness Inventory	(Argyle et al., 1989)	Academic	29	No
PERMA	(Seligman, 2012)	Academic	23	Yes
PERMA-Profiler	(Butler & Kern, 2016)	Academic	23	Yes
PANAS	(Watson et al., 1988)	Academic	20	Yes
Psychological Well-being Scale	(Diener, 2009)	Academic	NA	No
Psychological Well-being Scales	(Ryff & Keyes, 1995)	Academic	20	No
Psychosocial Safety Climate 12	(Hall et al., 2010)	Academic	12	Yes
Psychosocial Safety Climate 26	(Dollard & Kang, 2007)	Academic	26	Yes
Questionnaire for Eudaimonic Wellbeing	(Waterman et al., 2010)	Academic	21	Yes
Satisfaction with Life Scale	(Diener, 1984)	Academic	5	No
Subjective Happiness Scale	(Lyubomirsky & Lepper, 1999)	Academic	4	Yes
Tension Index	(Lyons, 1971)	Academic	9	Yes
Warwick-Edinburgh Mental Wellbeing	(Clarke et al., 2011)	Academic	14	No
Well-being@Work Index™	(Deloitte, 2017)	Professional	NA	Yes
Well-being360™	(Vitality Works, 2019)	Professional	116	Yes
Work Well-being Questionnaire	(Parker & Hyett, 2011)	Academic	50	Yes
Work-life Balance	(Brough et al., 2014)	Academic	4	Yes

Work-Related Well-being	(Orsila et al., 2011)	Academic	56	Yes
World Health Organisation-Five Well-Being Index	(Topp et al., 2015)	Professional	5	Yes

The review was performed by identifying several key indicators as criteria. The first criterion was that they are peer-reviewed in an academic journal. This left us with 24 measures. The second criterion was that they have been tested and applied on employee wellbeing and not just on general wellbeing as the definition is not the same. This left us with 18 scales. Finally, a deeper analysis was performed to analyse which definition they used to measure employee wellbeing. The results of the analysis against this last criterion was that most of these measures only included one of the two factors (hedonic and eudaimonic) that are included in the definition according to this thesis. This left us with two scales: employee wellbeing by Brunetto et al. (2011) and PERMA-Profiler by Butler & Kern (2016). However, an important factor when trying to maximise survey responses is the length of the survey, and the second scale has 23 items. For this reason, the results of the review revealed that the only wellbeing measure that fits all the criteria of this project is the employee wellbeing scale developed by Brunetto et al. (2011). The scale includes both eudaimonic and hedonic components and has been applied to public and private organisations in Australia, New Zealand, Canada, and the UK.

The employee wellbeing measure includes the following four items and is answered on a 6-point Likert scale ranging from strongly disagree (1) to strongly agree (6).

- Overall, I am reasonably happy with my work life.
- Most days I feel a sense of accomplishment in what I do at work
- I feel content with my work
- I get a sense of joy from my work

Brunetto et al.'s (2011) original scale was specifically suited to nursing, but a 2019 re-development (Farr-Wharton et al., 2019) aimed to make it suit any employee in any industry. The re-development of the scale consisted of the substitution of two of the original items ("Overall, I fulfil an important purpose in the work that I do" and "I get enough time to reflect on what I do in the workplace") by two new items ("I feel content with my work" and "I get a sense of joy from my work").

2.6. Antecedents of employee wellbeing

According to conservation of resources theory, two of the most important resources that act as antecedents of employee wellbeing are safety climate and managerial support (e.g., Dollard &

Bakker, 2010; Kalshoven & Boon, 2012; Selenko et al., 2013; Farr-Wharton et al., 2022a). Yet, there is little research on how these resources influence work stress and employee wellbeing from a multilevel perspective. To operationalise the aim of this thesis, this study focuses specifically on the role of social resources on employee wellbeing. Previous research has identified specific variables that impact individual wellbeing (Brunetto et al., 2020; Dollard et al., 2012; Tuan, 2016). Thus, it stands to reason that these variables are also instrumental antecedents to employee wellbeing. The first variable is employee perception of the value that team management grants to employees' psychological health and safety, and the second variable is employee assessment of the relationship between the employee and their supervisor.

This section presents the two team antecedents that are considered in this research project. Psychosocial safety climate (PSC) is an organisational resource characterised by prioritising employee psychological health (Becher & Dollard, 2016; Dollard & Bakker, 2010; Dollard et al., 2012), while Leader-member exchange (LMX) is a social exchange resource that is defined as the two-way relationship between leaders and followers (Rita Yi Man et al., 2019).

2.6.1. Managerial priority: Psychosocial safety climate

Employees' perceptions of how an organisation or team's management prioritises their wellbeing influences employee wellbeing. According to Becher and Dollard (2016), psychosocial safety climate is defined as an organisational resource that prioritises employee psychological health. Psychosocial safety climate can also be defined as "the shared belief held by workers that their psychological safety and wellbeing is protected and supported by senior management" (Bond et al., 2010, p. 49). In other words, it refers to the employees' perception that their organisation and team policies, practices, and procedures protect their psychological health and safety (Dollard & Bakker, 2010).

Hall et al. (2010, p. 355) defined the four domains of psychosocial safety climate as:

> (1) senior management support and commitment for stress prevention through involvement and commitment; (2) managerial priority to psychological health and safety versus productivity goals; (3) organizational communication, that is, the organization listens to contributions from employees; and (4) organizational participation and involvement, for example, participation and consultation occurs with unions and occupational health and safety representatives. (Hall et al., 2010, p. 355)

However, several studies have claimed that psychosocial safety climate is a team or departmental resource rather than an organisational resource given its focus on management, and, in most cases, each team has a different manager and potentially a different culture (Idris et al., 2012).

Not surprisingly, positive psychosocial safety climate has been correlated with other health outcomes such as lower depression rates, lower psychological distress, and higher morale (Becher & Dollard, 2016; Bond et al., 2010; Dollard et al., 2012). Several studies have analysed how organisations and specifically teams can enhance employee wellbeing by creating a psychologically safe environment (Dollard & Bakker, 2010; Law et al., 2011). According to Hall et al. (2010), if psychosocial safety climate is effectively measured, it can highlight potential team interventions that can positively impact employee wellbeing. Therefore, this study hypothesises that psychosocial safety climate is positively associated with employee wellbeing (see Figure 5 for the full hypothesised model):

- *Hypothesis 3. Psychosocial safety climate is positively associated with employee wellbeing*

As with conservation of resources theory, earlier studies of psychosocial safety climate focused on employee stress and how psychosocial safety climate is negatively correlated with stress. However, positive organisational scholars have also positively related psychosocial safety climate to employee wellbeing. In theory, a better perception of how the organisation prioritises employees' psychological health has a positive impact on employee wellbeing. At the individual level, psychosocial safety climate is understood as the individual perception of management practices and policies that protect and support employees' psychological health. However, the literature also argues that psychosocial safety climate is a within unit of agreement among team members, termed the psychosocial climate strength (González-Romá & Hernández, 2014), and that it impacts both work stress and employee wellbeing (Kalshoven & Boon, 2012). At both levels, it is theorised that psychosocial safety climate has a positive influence on employee wellbeing and a negative influence on work stress. These points lead to the following hypotheses:

- *Hypothesis 4. Psychosocial safety climate is negatively associated with work stress*

Perceptions of managerial support are impacted by perceptions of managerial support (Becher & Dollard, 2016). According to Zhou and Jian (2015), safety climate impacts the relationship between leader-member exchange and safety behaviour. High-quality leader-member exchange relationships have been identified as a positive organisational factor that can contribute to work engagement and psychological empowerment, which can lead to a psychologically safe work environment (Oktavio, 2020). Similarly, this thesis predicts that psychosocial safety climate is positively associated with leader-member exchange:

- *Hypothesis 5. Psychosocial safety climate is positively associated with Leader-member exchange.*

These hypotheses aim to partially answer the second research question which asks to what extent organisational resources impact the level of employee wellbeing. This research study hypothesises that there is a positive relationship between psychosocial safety climate and employee wellbeing at both levels of study: the team- and the employee-level. At the employee-level, this relationship means that employees who perceive that their organisation prioritises their wellbeing are likely to experience higher levels of employee wellbeing. In contrast, employees who believe that their organisation prioritises outputs above their wellbeing are likely to experience lower levels of wellbeing. At the team-level, this relationship can be described as teams who perceive that their organisation prioritises their wellbeing are more likely to experience higher levels of collective wellbeing and vice versa.

This study also hypothesises that there is a negative association between psychosocial safety climate and work stress at both levels of study. In summary, if accepted, this hypothesis would mean that employees with higher levels of psychosocial safety climate also experience lower level of work stress. Finally, psychosocial safety climate is hypothesised to have a positive association with Leader-member exchange at both levels of analysis. Such an association would be described as those employees (and teams at the between level) who perceive that their organisation is prioritising their wellbeing are more likely to experience higher levels of managerial support. In contrast, employees (and teams at the between level) who perceive that their organisation is not prioritising their wellbeing above performance would also perceive lower levels of managerial support.

2.6.2. Managerial support: Leader-member exchange

The Supervisor-employee relationship also influences employee wellbeing. Dansereau et al. (1973) first analysed the Supervisor-employee relationship through the concept of vertical dyad linkage, which then became Leader-member exchange (Graen et al., 1982). Leader-member exchange is a form of social exchange describing the two-way relationship between a supervisor and employee from the employee's perspective (Rita Yi Man et al., 2019). According to Dulebohn et al. (2012), Leader-member exchange is affected by both the leader's and the follower's characteristics and their interpersonal relationship. It is theorised that Leader-member exchange has a strong impact on employee wellbeing (Brunetto et al., 2016).

Leader-member exchange was initially developed as part of roles theory, wherein employees accomplish their tasks through roles. However, more recently, studies have noted that employees accomplish their work within teams or departments (Babič et al., 2019; Hu & Liden, 2013; Kim & Yi, 2019). Dienesch and Liden (1986) argued that Leader-member exchange is a multilevel variable that functions at both the employee and the team levels. This aligns with multilevel

organisational theory, which underlines the importance of studying workplace behaviours and team influence because employees are not separate units but instead are part of a team. Theoretically, the Supervisor-employee relationship has a positive influence on employee wellbeing. Leader-member exchange is a useful construct in analysing this relationship and is used to answer the research questions and build the research model. At the team level, the perception of managerial priority and support is generally understood as the team climate and is strongly linked to team culture (Loh et al., 2019; Spell & Arnold, 2007). These points lead to the following hypothesis:

- *Hypothesis 6. Leader-member exchange is positively associated with employee wellbeing*

Employees who have poor quality relationships with their leaders often experience high levels of stress (Oktavio, 2020). Therefore, this thesis hypothesises that leader-member exchange is negatively associated with work stress:

- *Hypothesis 7. Leader-member exchange is negatively associated with work stress.*

These hypotheses aim to partially answer the second research question which asks to what extent organisational resources impact the level of employee wellbeing. This research study hypothesises that there is a positive relationship between Leader-member exchange and employee wellbeing at both levels of study: the team- and the employee-level. At the employee-level, this relationship means that employees who perceive higher levels of managerial support are likely to experience higher levels of employee wellbeing. In contrast, employees who perceive lower levels of managerial support are likely to experience lower levels of wellbeing. At the team-level, this relationship can be described as teams who perceive higher levels of managerial support are more likely to experience higher levels of collective wellbeing and vice versa.

This study also hypothesises that there is a negative association between Leader-member exchange and work stress at both levels of study. If accepted, this hypothesis would mean that employees (and teams) who perceive higher levels of managerial support also experience lower level of work stress. Moreover, this model has a double or chain mediation in the relationship between psychosocial safety climate and employee wellbeing. The first mediation is from psychosocial safety climate to work stress by Leader-member exchange. This is explained by the fact that managers are considered agents of their organisations in their role of providing organisational resources to their employees (Shi & Gordon, 2020). The second mediation happens from Leader-member exchange to employee wellbeing via work stress.

The supervisor-employee relationship is important not only for its influence on employee wellbeing but also for team cohesion. Various studies have found that the quality of this relationship affects a team's access to information, support, and other resources (Brunetto et al, 2011; Gerstner & Day, 1997; Mueller & Lee, 2002). Leader-member exchange also impacts turnover intentions and job performance (Dulebohn et al., 2012). It is agreed that high-quality Leader-member exchange can promote other valued resources, such as participation in decision-making (Birdi et al., 2008) and access to extra support (Brunetto et al., 2014). On the other hand, low-quality Leader-member exchange tends to be related to low performance and role ambiguity, whereby employees do not fully know what is expected from them (Brunetto et al., 2011). Additionally, employees with supportive supervisors are more likely to have positive work-oriented behaviours (Graen & Uhl-Bien, 1995), which can transfer from the individual to the collective and influence team wellbeing.

According to emotional contagion theory, employee perceptions of the Supervisor-employee relationship can also be influenced by the perceptions of other co-workers (Tee, 2015) because employees tend to synchronise their feelings and emotions. Likewise, in multilevel organisation theory, employees from the same team tend to share more similarities than other employees (Kozlowski & Klein, 2000). Hence, emotional contagion not only frames the theoretical background of this project but also acts as a construct that moderates the influence of both psychosocial safety climate and Leader-member exchange on employee wellbeing. The following section builds on this idea and develops the concept of emotional contagion as a moderator in the research model.

Some argue that managers serve as organisational agents and mediate the relationship between organisational resources and work stress (Shi & Gordon, 2020). These points lead to the following hypothesis:

- *Hypothesis 8. Negative mediation between psychosocial safety climate and work stress through Leader-member exchange*

Work stress has also been proven as a bridge between organisational resources and employee wellbeing (Oktavio, 2020). First, a balanced workload leads to higher perceptions of managerial support which lead to controlled and manageable levels of work stress which finally lead to higher levels of employee wellbeing. Therefore, this thesis hypothesises that work stress positively mediates the relationship between leader-member exchange and employee wellbeing.

- *Hypothesis 9. Positively mediation between Leader-member exchange and employee wellbeing through work stress*

Both hypothesis 8 and hypothesis 9 build on the total mediation between managerial priority and employee wellbeing through managerial support and work stress. Therefore, the final hypothesis under study is:

- *Hypothesis 10. Positive mediation between managerial priority and employee wellbeing through Leader-member exchange and work stress*

The model also reflected a double mediation in the relationship between psychosocial safety climate and employee wellbeing. First, the relationship between psychosocial safety climate and work stress is fully mediated by Leader-member exchange at the within level. This means that employees' perceptions of how their organisation prioritises their wellbeing is fully mediated through employees' perceptions of managerial support. At the between level, this is only partially mediated since the direct relationship between psychosocial safety climate and work stress is significant. Second, the relationship between Leader-member exchange and employee wellbeing is fully mediated by work stress at both levels of analysis (between and within). This means that employees' perceptions of managerial support are fully mediated through their self-reported work stress level.

2.7. Multilevel organisational theory. The need to study work teams as a cluster

This chapter has explored the theoretical and conceptual frameworks guiding this research project. However, thus far the framework does not completely address the need to study this using a multilevel perspective. Employees are not isolated units, in most cases, employees are part of a work team, and their relationships and interactions with other employees also have an influence on their wellbeing (Kozlowski & Klein, 2000). The literature suggests complementing the theoretical framework with multilevel organisational theory. This theory was first published in 2000 by Klein and Kozlowski and has been increasingly used to understand workplace behaviours in addition to already developed theories. Therefore, it is necessary to study multilevel organisational theory in detail. The following section explores multilevel organisational theory and helps to address the current knowledge gap and the methodology of this study.

In most cases, employees are part of a work team and do not work alone. Most studies mention the importance of considering the team influence on workplace behaviours, yet few of them incorporate advanced statistical analysis in their method in such a way as to account for the team influence. Most organisational and workplace research is done from the individual standpoint, analysing individuals separately without considering that employees belong to a work team or group and those groups belong to an organisation. The problem with not analysing employee wellbeing from a multilevel perspective is that the results may not reflect the reality and therefore,

the recommendations derived from the results may not achieve the expected aim. There is a very big gap from individual to multilevel analysis, and yet, humans do not operate as isolated units.

Thus far, the general theoretical framework has been presented – identifying the team antecedents that are under study in this thesis. Social exchange theory has pointed out the need to consider that social interactions are the drivers of workplace behaviours. Additionally, the conservation of resources theory has established how employees value their workplace resources. Finally, emotional contagion theory has argued for the importance of considering the influence that social interactions may have on the wellbeing of employees. Therefore, this section builds on this last point to describe multilevel organisational theory, which also frames the chosen methodology, under a post-positivist research philosophy as defined by Kozlowski and Klein (2000).

Multilevel theory in organisational studies was first published on in 2000 by Klein and Kozlowski to attempt to move towards a more integrated methodology in organisational science that would be able to explain both micro and macro perspectives. Organisations have been framed as multilevel systems in previous studies, but this has not materialised beyond such identification (Dansereau et al., 1999; House et al., 1995; Klein et al., 1994; Seron et al., 1980). According to Kozlowski and Klein (2000), organisational studies have never fully integrated different levels of investigation. In most studies the three different levels: individual employees, work teams or departments, and the overall organisation, are studied separately. This division has resulted in organisational researchers not integrating the various organisational levels, which has therefore created different approaches, theories, and methods (Kozlowski & Klein, 2000). However, organisations are multilevel systems, and they should be studied as such.

The perspective of organisations being divided into levels was first mentioned by Lewin (1951) and was later reviewed by James and Jones (1976). James and Jones (1976) analysed the characteristics of the organisational context and stated that work climate perceptions are the result of both situational and individual influences. They found that the aggregation of each individual perception, as well as the context, results in the overall organisational climate. Similarly, individual employees' wellbeing can be aggregated at the team level to result in the overall team wellbeing, or be measured as collective wellbeing if there are appropriate measures for this.

Multilevel organisational theory has five principles that are organised around the "what, how, where, when, and why (and why not)", and they have been summarised in Table 12. The *what* principle attempts to define the focus of the project. According to this principle, the focus should be on the endogenous or dependent variable. In this case, employee wellbeing is the endogenous variable that the theory and research attempt to understand and explain. A psychosocial safety climate and Leader-member exchange are the exogenous variables that are studied as the team

antecedents of employee wellbeing. Within this principle, Kozlowski and Klein (2000) add that even though multilevel models are relevant to the vast majority of phenomena, there are cases where they are not necessary. In summary, multilevel analysis is unnecessary when the dependent variable is not influenced by higher-level units, does not influence lower-level units, or when it has been infrequently explored in the organisational literature. However, this project does not fall within these cases, and employee wellbeing should be studied at a multilevel perspective. Few studies have analysed how employee wellbeing, the dependent variable, is influenced by teams or how a team can influence its employees' wellbeing (e.g., Bayhan Karapinar et al., 2019; Brunetto et al., 2014; 2016; Farr-Wharton et al., 2021; Salmee et al., 2020).

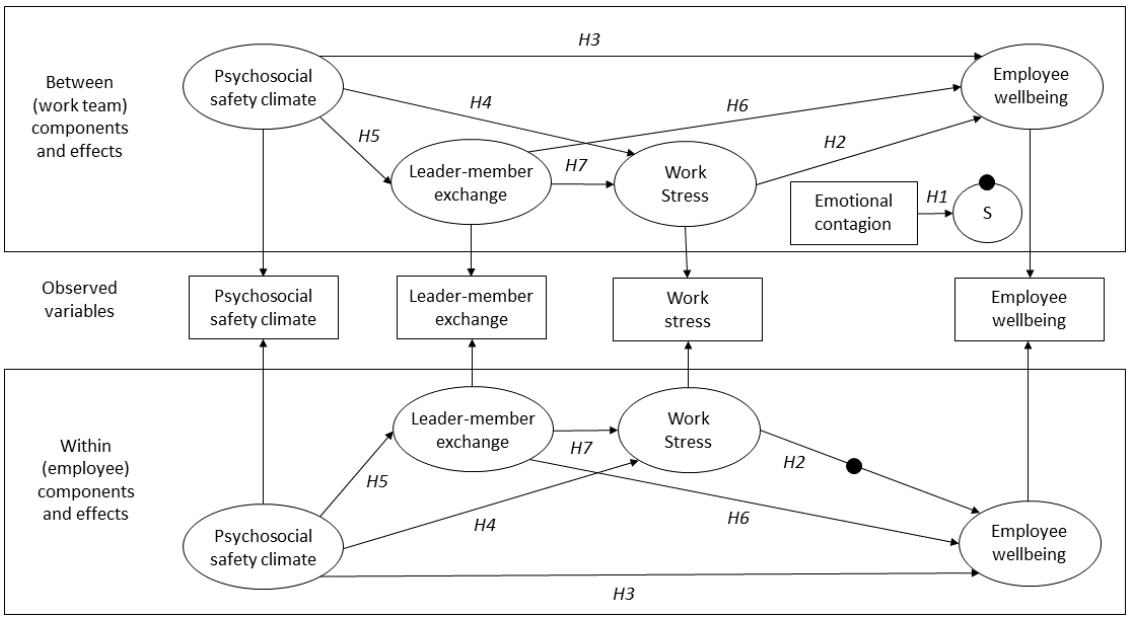
Table 12. Principles of multilevel organisational theory

Principle	Description	Implications for this research
What	Theory building should begin with the designation and definition of the theoretical phenomenon and the endogenous construct(s) of interest.	Employee wellbeing is the endogenous construct of interest. It is the "what" or the phenomenon that the theory attempts to understand. The exogenous variables in the research model under study are the psychosocial safety climate and Leader-member exchange.
How	A multilevel model must specify how phenomena at different levels are linked. These links can be top-down or bottom-up.	In this case, there are both top-down and bottom-up links between a work team and its members regarding wellbeing. Top-down processes include employees embedded within teams, and bottom-up processes are represented by collective wellbeing.
Where	The unit specification should be driven by the theory of the phenomena in question.	Work teams will be at the top level, as these are the groups that interconnect. The bottom level comprises employees, as they are who will treat their wellbeing as a resource and attempt to conserve or acquire it per the conservation of resources theory. It is this closer relationship between work team members that is necessary for emotional contagion.
When	The temporal scope as well as the point in the life cycle of a social entity affect the apparent origin and direction of many phenomena in such a way that they may appear variously top-down, bottom-up, or both.	The temporal scope will be determined by the data collection process, which took place during 2021.
Why and why not	Multilevel theoretical models must provide a detailed explanation of the assumptions undergirding the model. These should answer "why" and "why not".	This literature review of the theoretical framework justifies the need for a multilevel analysis, as employee wellbeing and the antecedents under investigation are influenced at both the individual and collective level.

(Kozlowski & Klein, 2000)

The following principle establishes that every multilevel model must specify *how* the dependent variable is linked with each level analysed. There are top-down processes, also known as contextual influences, which in this study involve the employees embedded within teams. Bottom-up processes, also called *emergence*, happen when there is a collective measure. There are two types of collective measures: first, the aggregation of individual aspects, and second, the collection of a collective measure itself. In this case, the aggregate of employee wellbeing could form the team wellbeing or could be measured as collective wellbeing. Additionally, it is important to know *where* these processes originate and terminate, and this should be driven by theory. For this project, work teams will be at the top level, as these are the groups that interconnect and involve relationships between members (Sales-Prado et al., 2007; Simon & Laird, 2019). It is this closer relationship between work team members that is necessary for emotional contagion (Hatfield et al., 1993; Stelman, 2016). The bottom level is defined as each employee, as employees treat their wellbeing as a resource and attempt to conserve or acquire it per the conservation of resources theory (Halbesleben et al., 2014; Hobfoll, 2001).

Figure 5. Hypothesised model



Note: Hypothesised multilevel research model with the between and within effects as well as the observed variables.

The *when* principle confirms that time is essential to incorporate into any model, although it has been neglected in many studies (House et al., 1995). According to Kozlowski and Klein (2000, p. 23), "the temporal scope, as well as the point in the life cycle of a social entity, affect the apparent origin and direction of many phenomena in such a way that they may appear variously top-down, bottom-up, or both". The final principle is the *why and why not*. This principle states that

multilevel models must justify why they are multilevel as well as provide an explanation on why the relationship between levels is bottom-up (or top-down) and not top-down (or bottom-up).

It is equally important to take into consideration several principles that Kozlowski and Klein (2000) have structured for model specification. Initially, it is important to define, justify, and explain the level of each construct that builds the model. In this project, the definition and justification for each construct is developed in the following section, the conceptual framework. A construct is a mental abstraction used to express aspects such as ideas, events, organisational characteristics, and people attributes (Austin & Vancouver, 1996). For this study, the primary construct is employee wellbeing (further details are described in the coming sections).

The level of measurement must also be considered. In this study, as employee wellbeing is an individual-level construct, data is collected from individuals (or employees). Another important factor to take into account is the type of multilevel model that will be used. According to Kozlowski and Klein (2000), there are two types of multilevel models: single level and cross level. Single-level models study the relationship between the dependent and independent constructs at a single level, while cross-level models study the relationships between constructs at different levels. Finally, the sampling process and analysis process must be considered. These are further described within the methodology section of this document.

2.8. Professional services industry in Australia

This last section of Chapter 2 presents a description of the professional services industry in Australia as the context in which this thesis examines the team influence on employee wellbeing. While this thesis did not aim at any industry or sector in particular, there was still a need to operationalise the study. Chapter 3 contains an in-depth presentation of the recruitment strategy that was undertaken to get participants. Due to the complexity of multilevel data and the need to identify the work team to which each participant belongs as well as at least two group members of each team, the engagement strategy targeted private sector organisations within the professional services industry in Australia. Moreover, the data collection process took place during the Australian lockdowns caused by the pandemic of COVID-19, and employees within the professional service industry were still able to work from home and operate in remote teams.

The professional services industry is the third largest industry in Australia after health care and retail (ABS, 2022). Professional services include occupations that require special training, specific qualifications and/or licences (Nishikawa & Orsato, 2021). This industry includes professional services such as accountants, engineers, marketing specialists, and business consultants amongst others. Within the professional services industry, there are teams that operate within the same area (e.g., accountants) with a manager and tend to work closely together as part

of their daily duties. This context is particularly important since the employees within the professional services industry do not have to engage in emotional labour on a frequent basis. As this chapter has explored, most of the research papers on employee wellbeing or emotional contagion study public sector employees and those who engage in emotional labour (e.g., Brunetto et al., 2021; 2022a; Farr-Wharton et al., 2021; 2022; Xerri et al., 2019; 2022). Moreover, these employees are also impacted by red tape and public sector bureaucracy (Baig et al., 2021), as well as austerity driven policies and scarcity of organisational resources (Farr-Wharton et al., 2021). Instead, the participants in this research project belong to private sector organisations within the professional services industry in Australia.

2.9. Conclusion of the chapter

This section has analysed the four theories that frame the research project. The aim of this research project is to develop a deeper understanding of the team antecedents of employee wellbeing and to analyse how these antecedents influence employee wellbeing. This theoretical background has helped to develop the research questions under study. The intersection of these four theories is the foundation of the theoretical framework for this project and is where the current knowledge gap lies. The theoretical blending of the first three theories: social exchange theory, conservation of resources theory, and emotional contagion, forms the theoretical underpinning of this project. However, they present an additional limitation, as they all consider that employees cannot explain the effect of the team and the individual. Therefore, a fourth theory, multilevel organisational theory, has also been included. The theoretical framework was followed by the conceptual framework and an in-depth examination of wellbeing and its antecedents. The chapter concluded with the presentation of the industry in which the data collection took place to contextualise the findings of this project.

Chapter 3. Methodology

The core objective of academic research is to provide answers to theoretical questions and develop an aspect for a particular body of knowledge that had not been done before (Shaheen, 2021). With this aim, academic research is guided by a set of established principles and theoretical assumptions. The context for this thesis was presented in Chapters 1 and 2, and the theoretical and conceptual framework were outlined in Chapter 2. This research project aims to contribute new, empirically derived knowledge regarding the impact of work teams and managerial support on employee wellbeing. Given this objective and in accordance with multilevel organisational theory, the study was developed using a multilevel statistical analysis approach, within a post-positivist research philosophy, as defined by Kozlowski and Klein (2000). The methodology chapter defines the research approach and the research methods developed as part of the thesis. This chapter commences with a presentation of the various approaches to employee wellbeing research. An overview of the different research paradigms as well as an outline of the philosophy guiding this research project follows, along with a description of the quantitative methods adopted. The subsequent section details the data analysis techniques employed to test the theorised model and its hypotheses in order to answer the research questions. Chapter 3 concludes with an overview of the ethical considerations and potential risks of the study taken into account by the researcher. While this is an extensive chapter developing the methodology of this study, it has been necessary to use this space to develop the complexity of the multilevel statistical analysis.

3.1. Approaches to employee wellbeing research

Employee wellbeing has been extensively explored and researched, as elaborated in Chapter 2. Despite ample research, maintaining good levels of employee wellbeing remains a key challenge for many organisations (Lawless & Willocks, 2021; Xerri et al., 2022). Employee wellbeing has been explored using both quantitative and qualitative research methods. While from a qualitative perspective, employee wellbeing has been explored using both single and multilevel analysis, it has not been the same for quantitative research. Most quantitative studies on the antecedents or consequences of employee wellbeing have focused on the employee level and have not considered multilevel influence. As a consequence, the potential variance caused by higher level influencers such as the team are not being considered. As we know, most of the time, employees work in a team. It is known that members of a team tend to be more alike than those from different teams. According to emotional contagion theory, those who work together tend to converge emotionally. Therefore, the observations (or responses) are not independent of each other. Nonetheless, there are still very few multilevel statistical studies that examine the antecedents of employee wellbeing. The lack of multilevel studies is mostly due to the to the fact that statistical software

packages that allow for multilevel statistical analysis did not exist until recently. The first version of Mplus to include multilevel modelling was version 2.1, which was launched in February 2001 (Muthén & Muthén, 2022). Moreover, multilevel data collection processes are much more demanding, and there tends to be a scarcity of resources (funds and time) to support researchers (Irani, 2019). Additionally, there is a high level of complexity in the development of the syntax associated with a multilevel statistical analysis. For all these reasons, quantitative post-positivist research has focused on single-level analysis when studying factors contributing to employee wellbeing as well as its outcomes and consequences. Table 13 presents some of the studies that have analysed the antecedents of employee wellbeing using a single-level structural equation modelling analysis from January to October 2022.

Table 13. Research studies that have analysed the antecedents of employee wellbeing using single-level structural equation modelling analysis between January and October 2022

Title	**Reference**
Flexibility and Saudi employees' perceptions of job satisfaction: A multisector study.	(Alotaibi, 2022)
The role of social responsibility and ethics in employees' wellbeing.	(Bocean et al., 2022)
Psychosocial safety climate, psychological capital, healthcare SLB's wellbeing and innovative behaviour during the COVID 19 pandemic.	(Brunetto et al., 2022b)
Managing emotional labour: the importance of organisational support for managing police officers in England and Italy.	(Brunetto et al., 2022a)
An integrative review on job burnout among teachers in China: Implications for human resource management.	(Cheng et al., 2022)
Transformative leadership and organizational citizenship behavior in UAE.	(Deusdedit & Alazeezi, 2022)
Transformational leadership and project success: The mediating role of trust and job satisfaction.	(Fareed et al., 2022)
Work harassment in the UK and US nursing context.	(Farr-Wharton et al., 2022b)
The impact of working from home during COVID-19 on time allocation across competing demands.	(Gunasekara et al., 2022)
The impact of human resources environment and organizational identification on employees' psychological well-being.	(Hameed et al., 2022)

The influence of technostress, work-family conflict, and perceived organisational support on workplace flourishing amidst COVID-19.	(Harunavamwe & Ward, 2022)
Do workers respond differently to learning from supervisors and colleagues? A study of job resources, learning sources and employee wellbeing in China.	(Huo & Boxal, 2022)
Lean production, work intensification and employee wellbeing: Can line-manager support make a difference?	(Huo et al., 2022)
Significant task activates trait gratitude for organizational citizenship behaviors: The mediating role of psychological availability.	(Li et al., 2022)
Self-determination theory and accountant employees' psychological wellbeing: The roles of positive affectivity and psychological safety.	(Lin et al., 2022)
Family support and posttraumatic growth among tourism workers during the COVID-19 shutdown: The role of positive stress mindset.	(Luu, 2022)
Organizational justice and employee well-being in India: Through a psychological lens.	(Majumdar & Kumar, 2022)
Mediating role of meaningful work between sustainable human resource management and employee engagement: A study on banking sector of Pakistan.	(Nasir & Waheed, 2022)
Mindfulness older workers and relational leadership.	(Roche et al., 2022)
The influence of pandemic-related workplace safety practices on frontline service employee wellbeing outcomes.	(Subramony et al., 2022)
Antecedent and employee well-being outcomes of perceived benefits schemes: a two-wave study.	(Xiao et al., 2022)

As shown, there are numerous papers on the antecedents of employee wellbeing that have used structural equation modelling at the single level within a specific timeframe. Although their findings contribute to understanding how organisations can further support employees' mental and physical health, many of these articles state the need for a multilevel analysis that also considers team influence (e.g., Brunetto et al., 2022a; Fareed et al., 2022; Li et al., 2022). Employees are not isolated units unaffected by other factors such as co-workers or managers, yet there has been very little research published on collegial and managerial influence on employee wellbeing using a multilevel quantitative approach. Statistical packages that support multilevel

structural equation modelling have been available for several years and still, there is a lack of multilevel studies. Thus, probably due to the complexity in both data collection and analysis, very few studies have incorporated such advanced statistical processes in their methodology and findings. Table 14 presents studies that have analysed employee wellbeing using a multilevel statistical methodology in ten months of 2022. There is a large difference in the number of single-level studies and multilevel projects, with there only being two studies in the latter category. Not surprisingly, many researchers have emphasised the urgent need for multilevel research to understand the organisational antecedents of employee wellbeing.

Table 14. Research studies that have analysed the antecedents of employee wellbeing using multilevel structural equation modelling analysis between January and October 2022

Title	**Reference**
A human growth perspective on sustainable HRM practices, worker well-being and organizational performance.	(Tortia et al., 2022)
Servant leadership and employee wellbeing: A cross-cultural investigation of the moderated path model in Canada, Pakistan, China, the US, and Brazil.	(Wang et al., 2022)

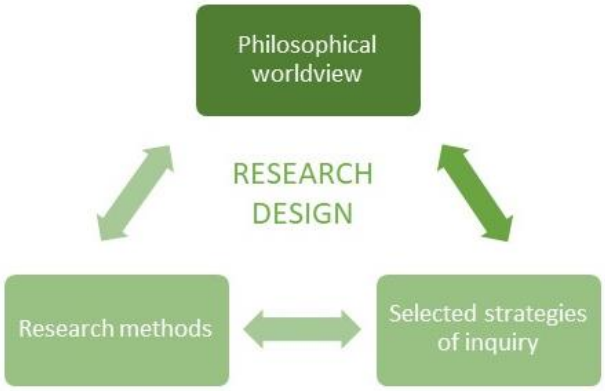
To address the research questions and test the hypotheses of this project, a multilevel quantitative analysis with a post-positivist research philosophy was deemed as being necessary. The present study incorporated a multilevel research analysis to study managerial and collegiality influence on employee wellbeing. This research used the available advanced statistical packages as well as documentation on multilevel analysis to establish the research design and the data analysis process. As such, the findings obtained can provide human resources professionals and line managers with valuable and novel insights for informing and designing programs and interventions that support employees' wellbeing.

3.2. Research paradigm

A *research paradigm* (also called *philosophical paradigm*) can be defined as "universally recognized scientific achievements that, for a time, provide model problems and solutions to a community of practitioners" (Kuhn, 1970, p. viii). Philosophical paradigms are different ways of understanding and viewing the world from a philosophical perspective and possess a distinctive standpoint regarding what constitutes acceptable knowledge, the nature of reality and the role of values in the research project (Rehman & Alharthi, 2016). An understanding of the different philosophical paradigms is important in determining and justifying the research design and methodology. Normally, the philosophical worldviews of the researcher are linked with the selected strategies of inquiry and the chosen research methods. These three different aspects (philosophical worldviews, selected strategies of inquiry, and research methods) inform the

research design of a project as seen in Figure 6. The philosophical assumptions that best align with this research project and its research questions are the positivist and post-positivist paradigms as defined by Kozlowski and Klein (2000).

Figure 6. What informs a research design?



Note. The interconnection between philosophical worldviews, research methods and the selected strategies of inquiry. Adapted from *Research design: qualitative, quantitative, and mixed methods approach* (5th ed.), by J. W. Creswell and J. D. Creswell, 2018, SAGE Publications, p. 5. Copyright 2018 by SAGE Publications, Inc.

The spectrum of research paradigms and philosophical worldviews have significantly evolved over time. The two poles of the spectrum are positivism and interpretivism. Due to their disunited understanding of the world and what can be considered true, supporters of each side have historically questioned the methods and validity of the other side (Denzin, 2012). However, since this is a spectrum, several other research paradigms exist depending on the researcher's understanding of the world. The major paradigms are positivism, post-positivism, transformative approach, pragmatism, and constructivism or interpretivism. However, other philosophical paradigms may also exist, and new ones could arise over time. Research paradigms not only differ in methodology but also in epistemology, ontology, and axiology (Maarouf, 2019). Ontology, epistemology, and axiology are three different brands of philosophy that address the unspoken assumptions that researchers make about their surroundings (Prosek & Gibson, 2021). These assumptions support researchers in determining their methodological choices and analysing their results. Table 15 presents a summary of these five major research paradigms according to their logic, ontology, epistemology, axiology, and methodology.

Table 15. Summary of the five major research paradigms according to their logic, ontology, epistemology, axiology, and methodology

	Positivism	**Post-Positivism**	**Transformative**	**Pragmatism**	**Interpretivism**
Logic	Deductive (verify)	Mainly deductive (predict)	Mainly inductive (transform/ emancipate)	Abductive (converse)	Inductive (interpret/ understand)
Ontology What is Real?	One reality that is external, objective, and independent to the researcher and can be found	One or multiple realities that are external, objective, and independent to the researcher, but they cannot be fully found	Realities are socially constructed entities that are under constant internal influence	Reality is constant debated and interpreted as new situations arise	Subjectivism, socially constructed reality with multiple possibilities
Epistemology What is True?	Findings are true and represent the reality	Findings are probably true but could have limitations	Knowledge is socially constructed	Knowledge is searched to solve problems	Knowledge is socially constructed
Axiology What do we Value?	Research is value-free. Researcher is independent of the data and maintains an objective stance.		Intrinsically valuable aiming to socially emancipate	Values play a large role in interpreting results; researcher adopts both objective and subjective points of view	Research is value-bound. Researcher cannot be separated from the research, which is therefore subjective
Methodology How can we examine what is Real and True?	Quantitative	Quantitative	Quantitative/ Qualitative	Quantitative/ Qualitative	Qualitative

Ontology can be defined as the "nature of reality" or what it is understood as reality (Collis & Hussey, 2013, p. 59). Positivists argue that there is only one absolute truth and that it can be

discovered and measured by research (Alvesson & Skoldberg, 2009). Positivism is also known as "the scientific method" (Scotland, 2012). On the other side, interpretivists suggest that there is not an absolute truth but rather everyone has their own reality constructed via mutual understanding (Grant, 2022). For interpretivists, there is more than one reality as each person has their own experience of reality. Post-positivists argue that, even though there is one reality, there may be limits to human's ability to accurately capture it (Kankam, 2019; Ryan, 2006). The transformative approach suggests that there is no such thing as a true reality as the reality is a product of power relations (Creswell & Creswell, 2018). Lastly, pragmatic research agrees with the positivist and post-positivist idea that there is a reality but argues that it cannot be determined (Nunfam, 2021). Multilevel organisational theory follows a post-positivist research philosophy as it agrees that there is one reality but maintains that there are limitations to discovering it.

Epistemology denotes the "nature of knowledge", or the study of knowledge acquisition and how humans understand their environment and surroundings (Wilson, 2014, p. 9). For positivists, the object of study is distinct from the researcher (Scotland, 2012). Positivism is frequently used in mathematics or biology. For post-positivists, the object of research is also distinct from the researcher, and the research builds an approximation of the object of study (Creswell & Creswell, 2018); this approach is normally used in psychology and medicine. Constructivists or interpretivists, conversely, believe that knowledge is co-constructed, and that people can only learn by engaging and sharing (Alharahsheh & Pius, 2020). Traditionally, this paradigm has been used in psychoanalysis and education. Interpretivists take a subjective perspective regarding the object of study. Traditionally, this paradigm has been used in psychoanalysis and education. The transformative approach argues that knowledge is political and value-laden. Some have suggested that this is the approach of gender research, politics, and some sociological studies (Creswell & Creswell, 2018). From a pragmatic perspective, knowledge is both subjective and objective depending on the phase of the research (Teddlie & Tashakkori, 2009). Within this research project, the researcher is independent from the participants, which aligns with the positivist and post-positivist paradigms.

Axiology refers to "the role of values and ethics" within the research project (Saunders et al., 2019, p. 134) and the origin of those values. Positivists focus on logical, disengaged, and absolute knowledge, whereas post-positivists agree that research is dispassionate, universal, and motivated by particular reasons (Creswell & Creswell, 2018). On the other end, constructivists argue that knowledge is contextual and there are biases caused by the researcher, who cannot be separated from the object under study (Alharahsheh & Pius, 2020). For those who see the world through the transformative lens, their values sit within critical analysis, social justice, and a transformative belief system (Creswell & Creswell, 2018). Finally, pragmatism focuses on solving practical

problems in the world (Feilzer, 2010; Kaushik & Walsh, 2019). Lately, pragmatism has been defined as more aligned with social justice (Morgan, 2014) and the idea that the values of the researcher are not independent from the interpretation and discussion of the results (Kaushik & Walsh, 2019). Pragmatism strongly aligns with this project as its final goal reaches beyond contributing to the understanding of employee wellbeing and intends to provide further evidence on how organisations can support employee wellbeing and promote healthier workplaces.

3.2.1. Positivism and post-positivism

Quantitative studies have traditionally been under the positivist or post-positivist research paradigm (Creswell & Creswell, 2018). Positivists and post-positivists believe that the researcher is independent from the participants under study (Alvesson & Skoldberg, 2009). While both approaches believe that there is one truth, there is an important difference between them. From a positivist approach, this one truth can be found through quantitative research methodology such as experiments or surveys. Conversely, from a post-positivist approach, it is not possible to find the one truth, but it is possible to obtain an approximation of reality using inference statistics and other quantitative methods. This research project aligns with the latter research paradigm.

Creswell and Creswell (2018) argue that the biggest difference between the pragmatic and post-positivist approach is that for pragmatists there is not only one singular reality. In fact, Metcalfe (2014) argues that pragmatism is an extension of post-positivist and interpretivist approaches. The pragmatist paradigm draws on both objective and subjective knowledge. While the researcher is still external from the research, there is not a unique reality – instead, the reality is relative to the perspective of the researcher and the interpretation of the results.

3.3. Quantitative methods

This research project studies the influence of work teams on employee wellbeing and job stress. The chosen methodology was developed using a post-positivist quantitative approach in which the researcher was independent of the research and the analysis sought objectivity. However, the findings do not necessarily verify a reality but rather take a dialectic perspective whereby the results juxtapose ideas with the objective of resolving a conflict. The research takes a multilevel statistical analysis approach and a post-positivist research philosophy, as defined by Kozlowski and Klein (2000).

A significant innovation of this study relates to the use of multilevel statistical analysis. While multilevel analysis is somewhat established in the qualitative approach, it is still nascent within organisational quantitative methods (Ward et al., 2022). Multilevel statistical analysis seems strangely undervalued and often argued against by reviewers despite the obvious flaw involved in measuring between level constructs at the within level (Jong & Ford, 2019). Multilevel

structural equation modelling seeks to understand the influence of variables at different levels of analysis on an outcome (dependent) variable. In quantitative organisational studies, multilevel analysis has only been developed over the past decade and has not been used to analyse the emotional contagion among co-workers on employee wellbeing. In application, multilevel analysis can be used to understand how, for example, organisations and/or teams can impact individual employees and vice versa. This contrasts with traditional, single-level analysis approaches, which are limited as they only consider statistical relationships at the same level of analysis (e.g., an employee's personality and corresponding work engagement).

In standard general linear models or standard structural equation models, it is assumed that the observations are independent of each other. In other words, these models assume that participants or responses are independent of each other. Therefore, the model assumes that the residuals are normal, independent, and identically distributed. However, this is rarely the case in social sciences. These assumptions could be violated if there are multiple observations per participant, as occurs with longitudinal data, but this is not the case for this research project. Another case where single level structural analysis could be applied is when participants are clustered in groups, as in this research project. Employees belonging to a work group tends to introduce similarity among group members. As such, the residuals are not independent from each other.

The aim of using multilevel structural equation modelling was to account for, rather than ignore group variance, as happens with standard single-level models. In this way, the results could separate the variance into two groups: the within-variance explaining the individual effect on each employee, and the between-variance explaining the often-ignored team effect.

3.4. Research design

This section details the research design. Multilevel analysis is used when the observed data has a hierarchical or clustered structure (Kozlowski & Klein, 2000). In this research, there are employees nested within teams. These clusters tend to be more alike in their characteristics than employees not studied within their workgroups (Kozlowski & Klein, 2000). Multilevel models recognise the existence of this hierarchy and allow some residual variance in each level (Ward et al., 2022). The residual variance can then be divided into a between-team component, which is the variance of the team-level residuals, and a within-team component, which is the variance of the employee-level residuals. The team residuals are called the *team effects*, and the employee residuals are called *employee effects*. This allows researchers to identify the influence of the team level on the studied variables instead of just considering that it is all due to the employee level variance, as occurs in traditional single-level analysis. One area of significance in this research project is the multilevel statistical analysis. The results provide the individual and the team level

variance, which offers valuable information for organisations that want to implement programs to support their employees' wellbeing. Equipped with deeper understanding of the extent to which teams influence employee wellbeing and work stress, organisations could be more successful when promoting specific interventions or training and development programs that support employee wellbeing.

This type of advanced statistical analysis is a contemporary approach that has only been in organisational studies and academic journals for the past decade. Multilevel theory in organisational studies was first published in 2000 by Klein and Kozlowski, who aimed to move organisational science research towards a more integrated methodology to explain both micro- and macro-perspectives. Organisations have been framed as multilevel systems since the early 1980s, but this multilevel approach has not materialised beyond a simple presentation (e.g., Dansereau et al., 1999; House et al., 1995; Klein et al., 1994; Seron et al., 1980). According to Kozlowski and Klein (2000), organisational studies have never been fully integrated because most projects study organisations at three separate levels: individual employees, work teams or departments, and the overall organisation. This division has prevented organisational researchers from integrating the different levels, which has created different approaches, theories, and methods (Kozlowski & Klein, 2000). The creation of different approaches, theories, and methods is particularly problematic when trying to reduce the readiness gap that exists between valuing and supporting the wellbeing of employees. Without an agreement on a definition, a measurement or even on what the antecedents and consequences of employee wellbeing are, it is not possible to create a robust body of knowledge (Cook & Campbell, 1976). However, organisations are multilevel systems, and they should be studied as such.

There are a number of reasons for using a two-level model in this project. First, the research questions concern the grouping for individual outcomes as the study aims to measure team influence on employee wellbeing. As a result, the multilevel analysis can yield the correct inferences. In traditional multiple regressions, the regression coefficients are underestimated if there is a hierarchical structure influencing the variance. This project did not analyse the third level of analysis (the organisational level) or any potential higher levels such as the industry or country levels. There are several reasons for not including higher levels. First, the sample size does not allow for higher levels of analysis. Second, once analysed, the organisational level effect is very small as the variables included are team-level and/or individual-level variables. Nevertheless, key considerations were made to ascertain the validity of the results without these higher levels. What is more, the potential for higher level research projects opens the door for further research through important findings that could impact the business world.

After discussing the methodological implications of this study, this chapter details the application of the multilevel organisational design to investigate the influence of teams on the relationship between employee wellbeing and work stress.

3.4.1. Population sampling

Classic statistical inference processes such as difference analysis, factor analysis, or regression analysis are based on the assumption that the cases used are obtained from a simple random sampling procedure (Harradine et al., 2011). However, this is not the case for most quantitative studies in the social sciences, including applied psychology or management, and this research project is no exception. The employees who participated in the study were not randomly selected. They were part of a work team, just as a group of students would be part of a class or a group of nurses form a hospital ward. The participants of this study were nested, or clustered, within a work team. Hence, the data is hierarchically structured in a two-level hierarchy – employees nested within work teams.

Generally, individuals within a cluster are more alike than those from different clusters (Kozlowski & Klein, 2000). For example, employees who work in the accounts department of an organisation tend to be accountants, bookkeepers, or have an interest in numbers. Similarly, those employees who work in a kitchen are all chefs, cooks, or kitchen assistants, and they are all interested in cooking or gastronomy. Other authors such as Humphrey and LeBreton (2019) or Sierra (2011) also explain how individuals within the same group tend to have similar characteristics than those from different groups. In these cases, the precision of inferences around single-level parameter estimates is reduced. If hierarchically structured data is treated as a simple random sample and the hierarchical structure is ignored, the standard errors around parameters measured at the higher level (in this case, the team level) will be underestimated.

For this sampling process, one of the multilevel statistical implications is that individual (in this case, employee) data must be nested within one's team or workgroup. Specifically, this meant that team members needed to identify that they belonged to a specific team. This had implications for the sample size of the study because it required that there be more than one respondent in each team; otherwise, there would have been no team-level effect as both the team and the employee would have been the same. Some researchers have argued that four is the minimum desired number of respondents to generate skewness and kurtosis statistics for each group (Blanca et al., 2013). These statistics analyse the shape of the distribution of variables. If a group has fewer than four respondents, it is challenging or even impossible to ascertain valid representations of the group's central tendency to undertake statistical calculations. Skewness measures the symmetry of the distribution and whether there is some skewness from the central tendency (see Equation

1). Kurtosis is a measure for analysing how much outliers affect the distribution by rendering the distribution leptokurtic (positive) or platykurtic (negative; see Equation 2). Others have argued that having at least two group members (Hallquist, 2017) is sufficient to measure team influence and thus find the between-team and within-team residual variances (also called team and employee effects).

Equation 1. Skewness formula

$$Skewness = \frac{\sum_i^n (Y_i - \bar{Y})^3}{(n-1)\sigma^3}$$

Where:

n is the number of variables in the distribution

Y_i is the variable of the distribution

$\bar{Y}$ is the mean of the distribution

σ is the standard deviation

Equation 2. Kurtosis formula

$$Kurtosis = n\frac{\sum_i^n (Y_i - \bar{Y})^4}{\left(\sum_i^n (Y_i - \bar{Y})^2\right)^2}$$

Where:

n is the number of variables in the distribution

Y_i is the variable of the distribution

$\bar{Y}$ is the mean of the distribution

Equally, there must be a minimum number of groups to yield enough samples at the team level to robustly compare group properties. While 25 is the minimum number of groups that other multilevel organisational researchers have used (e.g., Bakker, 2015; Benitez et al., 2019; Chen et al., 2019; Dollard et al., 2012; Ilies et al., 2007; Kammerlander et al., 2017; Salmee et al., 2020; Terpstra-Tong et al., 2020; Wang et al., 2017; Xie et al., 2021), this low sample size can make it difficult to achieve robust goodness of fit indices for the computational models involved in multilevel analysis. Indeed, computational models benefit from having 40 or more groups and become very robust when there are more than 96 groups. This is because statistical measures of central tendency become much more reliable with larger sample sizes. However, at the team/group level, achieving large sample sizes in multilevel research is challenging and resource-intensive. For this reason, most published studies in management/organisational research domains

have between 25-55 teams. Table 16 presents the number of individuals at the within level and the number of groups at the between level that other recent organisational multilevel studies have used when undertaking research. Elorza et al. (2016) posit that the minimum number of groups necessary to run multilevel structural equation modelling is 30. This threshold was determined after noting that previous studies consistently presented valid estimation and model fit with between-level samples greater than 30. Additionally, González-Romá & Hernández (2017) review multilevel research and its applications in various fields. The authors point out the importance of determining the ideal sample of teams and individuals to precent estimate bias and other errors. González-Romá & Hernández (2017) also state that the minimum of 30 groups is ideal to obtain reasonable standard errors, although several studies have achieved it with as few as 10 groups of 5 individuals. This research project collected data from 41 groups, which fits within the previously mentioned threshold of 30 groups to be able to have a valid estimation and appropriate model fit indices.

Table 16. Number of individuals at the within level and the number of groups at the between level of recent organisational multilevel studies

Within-level sample size	**Between-level sample size**	**Reference**
40,000+	400+	(Kammerlander et al., 2017)
368	57	(Wang et al., 2017)
396	91	(Benitez et al., 2019)
542	36	(Farr-Wharton et al., 2021)
274	43	(Farr-Wharton et al., 2022a)
343	30	(Mohd Salleh et al., 2015)

The target population for this research project was individuals working as part of a team (excluding solo employees) in Australia. The unit of analysis was not a specific industry or group of organisations within a particular industry. This research project aimed to study how teams influence the levels of employee wellbeing without targeting any particular industry.

The study employed a variety of sourcing strategies to recruit companies and work teams that would be interested in the findings or that would benefit from the output of this research project. The main recruiting strategy involved contacting human resource managers and other managers directly via LinkedIn. The utilisation of social media accounts to promote research projects has increase notably during the last decade (Cawcutt et al., 2019; Kapoor et al., 2017). According to Al-Daihani et al. (2018), it has opened the doors for more and better research as it has offered more visibility and a broader impact for research projects. Other sources were used as well. The researcher contacted organisations that promote mental and physical health across Australia such as Beyond Blue, which is a non-profit organisation that provides mental health support and

services (Beyond Blue, 2022). In addition, other professional and industry associations were contacted such as the Australian Human Resources Institute, the National Institute of Accountants, the Real Estate Institute of Australia, and the Economic Society of Australia. Professional or industry associations are a cooperative group of organisations and individuals that represent several professions. By contacting these organisations, the researcher could reach a wide number of organisations and gain sponsorship. Support from these institutions is important to highlight the relevance of this project for individual private organisations. Moreover, sponsorship from professional associations increases the participation rate (Heijmans et al., 2015).

In total, over 600 Australian organisations were contacted. The researcher initially shared an information brochure and a YouTube video with potential participants. Both the recruitment flyer and the video link can be found in Appendix 2. Both presented the key objectives of the study and a call-to-action link where users could decide to engage with the study. After several rounds of emails and communications, 14 Australian organisations agreed to participate, but valid data was collected from only nine of those organisations. The others did not have sufficient participants to be able to run a multilevel statistical analysis with the available statistical software.

Once the data collection process closed, the data from 237 completed surveys from 41 work teams was stored, prepared, and analysed. The 41 teams belonged to nine companies in the professional services industry. It is important to reiterate that the unit of analysis was not a specific industry or group of organisations within an industry but rather work teams. The research examined team dynamics within Australian organisations. Teams from multiple organisations can be compared as long as one of the following two approaches is taken into consideration: 1) if the organisational effect (the third level of analysis) is proven to be non-existent or very small, the third-level analysis is insignificant; 2) and/or the organisational effect is controlled for when performing the multilevel statistical analysis. The organisational effect is the influence that each organisation has on each employee. So long as this effect is statistically insignificant or controlled when performing the multilevel analysis, it is appropriate to compare different teams even if they do not belong to the same organisation.

3.4.2. Data collection

Quantitative studies focus on the collection of numerical data to study the relationship between constructs (Creswell, 2014). The study of such relationships is particularly useful as such connections can be applied practically and have an impact beyond research. The most common means of collecting numerical data is by using a survey. Questionnaires are a robust method of research as they use uniform definitions to set the questions (Hagino, 2002). This is particularly important to ensure that all participants are asked the same questions in an identical way (Hagino,

2002). Questionnaires allow for the collection of same data from numerous respondents (Akinci & Saunders, 2015). Moreover, surveys are impersonal as participants are unable to build a relationship with the investigator (Gliner et al., 2017) – thus, aligning with the positivist and post-positivist paradigms in which the researcher is independent from the participants. Surveys can be administered in numerous modalities such as face-to-face, traditional post, telephone, or online. While online questionnaires have been used for decades, the COVID-19 pandemic enhanced the use of web technology to avoid close contact between people. Better web technology has allowed researchers to reach a wider audience and to collect data remotely, thereby reducing costs and increasing the number of responses and the speed at which data is collected (Mertler, 2020). Participants are normally also given the autonomy to complete the survey in their own time and at their own pace, which increases participation rate.

In this study, data was gathered directly from employees using a survey-based, self-report strategy (Ghauri et al., 2020). The online survey software that has been used to manage and distribute the survey is Qualtrics. The online survey software that was used to manage and distribute the survey is Qualtrics.

The survey development for this project included four parts: consent, team identification, constructs, and demographics. The consent block includes the participant information sheet, all the relevant information regarding the survey, the usage of the responses, and contacts in case participants felt distressed. Team identification was an essential part as the research examines team influence on employee wellbeing. Team identification was achieved by asking each employee to write the three first letters of their manager's first name and the three first letters of their manager's surname.

The team identification questions were followed by the scales of the constructs, including employee wellbeing, psychosocial safety climate, Leader-member exchange, work stress, and emotional contagion. The scales were generated from the extant literature and presented using matrix questions with statements rated on a Likert-type scale. These measures are further discussed in Section 3.4.4.

Finally, general demographic questions were included on gender, year of birth, and tenure. Demographic questions were placed at the end of the survey as they are usually off-topic and sometimes unnerve respondents who feel that such questions are intrusive (Green et al., 2000). They could also be placed at the beginning of the survey, as some argue that this helps to ease the participants into the survey and increase their confidence (Teclaw et al., 2012). They can also be placed at the beginning if they are used for screening (Teclaw et al., 2012). However, this study did not require particular demographics and did not need initial screening of participants.

Additionally, and according to the Human Resources Ethics Committee at the University of Technology Sydney, the survey included questions that have a potentially psychologically disturbing effect as some questions could be a trigger for psychological distress. For these reasons, only demographic questions that were essential for the study were asked, and these were placed at the end of the survey after the participants had a chance to see what the survey asked.

In addition to the survey development, a recruitment strategy was established to engage with organisations willing to participate in the study. Over 600 Australian organisations were contacted via email and LinkedIn. Of these, 14 agreed to participate in the study, but only nine had a sufficient number of complete responses to be included in the research. Data collection began after Human Research Ethics Committee approval in August 2021. Each participant organisation received a personalised survey link to distribute amongst their employees. The data collection process was finalised in January 2022. After the survey was closed, all data was securely stored to begin the data analysis process.

The most common research design when using questionnaires is a cross-sectional study, as discussed by de Vaus (2014). Cross-sectional correlational surveys are intended to study the relationship between independent and dependent variables (Cooper & Schindler, 2014; Cassell et al., 2018). These projects involve collecting data at one point in time (Cassell et al., 2018), which allows the researcher to identify if a relationship exists between the various dependent and independent variables. However, it is important to note that the researcher cannot infer whether the dependent variables are caused by the dependent variables (Cassell et al., 2018).

Fourteen Australian organisations within the professional services industry agreed to participate, and valid data was collected from only 9 of those organisations. The other five did not have sufficient participants to be able to run a multilevel statistical analysis with the available statistical software. The details of the survey and the questionnaire link were shared via email with a representative of each participant organisation or work team. In general, these representatives were human resource managers or wellbeing officers within the companies and/or teams. For safety purposes and on request from the Human Research Ethics Committee, the organisations and/or their wellbeing or human resource managers were the ones who distributed the survey amongst their organisation or work team. Several reminders were sent out to ensure that sufficient data for a multilevel statistical analysis was collected. According to van Mol (2017), survey reminders are the most effective way to engage with the targeted audience and increase sample sizes.

When the data collection process finished, a total of 237 responses from 41 different work groups were received. The data preparation process began shortly after the survey was closed.

3.4.3. Survey considerations

An online survey was used for data collection as surveys are mostly used to determine perceptions and assess attitudes (Sackett & Larson, 1990). Rating scales are commonly used in social sciences and in the majority of quantitative research projects within this field (Croasmun & Ostrom, 2011), and scales were also used in the present study.

To maximise the success of the data collection process, it is important to consider several key factors of the survey design. For this, the researcher should undertake extensive research on survey design to ensure that the participants' levels of confusion, frustration, and potential distress are minimised. This research project relied on a cross-sectional web questionnaire where participants were required to indicate their agreement level on several scales. It was also essential to collect team identification data in order to perform multilevel statistical analysis. Additionally, important demographic information such as gender, age, and tenure were also collected. A copy of the questionnaire is provided in the Appendix 1 and a copy of the participant information sheet was included in the introduction of the survey (see Appendix 3). The information sheet offered more details about the research project.

According to Balch (2010), the target population, distribution speed, and participation rate are considerations that should be considered when undertaking survey research. When they are correctly designed and distributed, surveys are a very robust data collection instrument (Quinlan et al., 2019). They collect meaningful responses for the researcher, but they do not require a lot of effort from the responder (Quinlan et al., 2019). Questionnaires also allow large datasets to be collected while minimising costs and time (Mertler, 2020) and allow the researcher to make inferences about a population without having to collect data from every individual (Fraenkel et al., 2014).

However, if overused, surveys can cause survey fatigue (Buckingham & Saunders, 2004; de Koning et al., 2021: Le et al., 2021). There are two types of survey fatigue that should be avoided at all costs. First, survey request fatigue happens when an individual receives too many surveys, causing frustration and exhaustion. Second, survey-taking fatigue occurs when individuals experience exhaustion because a survey is too long (generally, more than 20 minutes), difficult to understand, or not user-friendly. When undertaking survey research, it is essential to reduce potential survey fatigue as its consequences have a high cost and could even lead to having to discard a dataset. Some of the key consequences include lower response rate, skewed results, waste of resources such as time and money, or even damage to the researcher's institution or academia overall (de Koning et al., 2021).

Keeping the survey engaging, as well as short, is also key in collecting as many valid responses as possible. Some suggest that having different types of scales and question types keeps the audience more active (Le et al., 2021). All the central scales were presented using a matrix with the items as the rows and the Likert scale as the columns. The Likert-type scale was described and developed by Rensis Likert (1931), and it is the most common attitude score in social sciences (Croasmun & Ostrom, 2011). Likert scales provide a range of responses to a series of statements that then become aggregated following different methodologies to build a construct. Generally, there are between five and seven categories of response. Some researchers have argued that the best scale has five items, ranging from strongly agree to strongly disagree and with a neutral point in the middle (Croasmun & Ostrom, 2011). Others prefer a scale with 7 or more items as this may increase the reliability of the instrument (Simms et al., 2019). Still others have argued that the reliability and validity of an instrument is not related to the number of scale points used (Boateng et al., 2018).

The various scales and variables used for this research consist of different scale end points. For some constructs, the 5-point Likert scale was used while for others, the 7-point Likert scale was used. All the scales that were added to the survey used the original number of items as per the original developed construct. Moreover, not all scales followed the strongly disagree to strongly agree format; some ranged from rarely to most of the time, depending on the nature of the question. This also allowed respondents to remain engaged with the survey as well as allowing researchers to identify unengaged responses so that the final sample was more robust.

There is an important limitation to the use of self-report surveys: this approach can present bias as participants may answer what they believe the researcher wants to see or may "respond in a way that makes them look as good as possible" (Donaldson & Grant-Vallone, 2002, p. 247). To address this issue, Donaldson and Grant-Vallone (2002), suggest that the sensitivity of the questions as well as the characteristics and potential conflicts of participants are taken into account. All the scales utilised in this project were selected from a review of the extant literature, as outlined in section 3.4.4. All scales were used and validated in previous peer-reviewed research projects. Moreover, important ethical considerations were considered to minimise the potential distress that these questions may cause to respondents. These ethical considerations are further discussed in section 3.5.

One last methodological concern with survey collected data is the possibility of common-method variance (CMV) or common-method bias. CMV is "the amount of spurious correlation between variables that is created by using the same method – often a survey – to measure each variable" (Craighead et al. 2011, p. 578). In other words, it is the variance caused by using a survey to

measure a construct that cannot be measured in real life (e.g., wellbeing). If variables are affected by CMV, the intercorrelations amongst them would not represent reality. Some researchers have analysed the sources of CMV. Podsakoff et al. (2003) argue that there are three different causes of CMV. First, when responses are self-reported and come from the same respondent. This cause is inevitable in a research project that looks at the relationship between variables in a two-level analysis. Second, the way items are presented as well as their context can cause CMV. In this study, this has been addressed by following the available survey design tools presented in this section and accounting for potential limitations due to this being an unfunded project with time constraints. Third, contextual factors such as location and time can produce CMV.

During the last decade, several articles have been published describing different ways to test and address CMV. According to Craighead et al. (2011), two thirds of the research articles published between 2001 and 2009 did not note how CMV was taken into consideration for their research. However, most methodological papers find testing and reporting on CMV crucial to publish meaningful results (e.g., Jordan & Troth, 2020). On the other hand, some authors have suggested that CMV does not pose a great thread to validity of findings with constructs that are measured using multiple items (Fuller et al., 2016).

For this project, CMV was addressed via two different approaches. First, the Variance Inflation Factor (VIF) test was applied (Kock, 2015; Salmerón Gómez et al., 2018). This statistic represents the severity of multicollinearity using an index that measures how much the variance of an estimated regression coefficient is increased because of collinearity. This statistic is discussed in detail in Chapter 4, along with the results of the multilevel statistical analysis. Second, Chang et al. (2010), propose using different scale types to minimise CMV as this reduces the likelihood of having consistent responses across different constructs. This approach has also been used by having different scale sizes (5 and 7 Likert items) or items (strongly agree to strongly disagree and rarely to most of the time).

3.4.4. Questionnaire scales

A print version of the survey can be found in Appendix 1. The survey consisted of three different sections. The first section comprised the introduction with the consent question and information sheet. A copy of the participant information sheet is available in Appendix 3. The following section describes all the relevant scales for this research project, including employee wellbeing, psychosocial safety climate, Leader-member exchange, colleague emotion-sharing, and work stress.

As employee wellbeing, colleague emotion-sharing, work stress, managerial support, and psychosocial safety climate are not readily observable by direct means, latent measurement tools

were needed (El-Den et al., 2020; Song et al., 2013). A latent variable is a variable that cannot be directly observed or measured using standard tools, but instead, it is inferred from other observed variables (Ranalli, 2016). Though these constructs are intangible variables, a psychometric tool like a Likert scale can capture the levels of employee wellbeing, work stress, colleague emotion-sharing, Leader-member exchange, and psychosocial safety climate.

To summarise, five relevant scales to measure the five constructs included in the model were also included in the questionnaire. A summary of these can be found in Table 17, and each of these scales is described in the following subsection. The survey closed with three demographic questions: gender, year of birth, and tenure.

Table 17. Latent constructs included in the survey

Concept	**Reference**	**Items**	**Likert-Scale**
Employee wellbeing	(Brunetto et al., 2011)	4	6-Likert scale
Work stress	(Cullen et al., 1985)	5	5-Likert scale
Emotional contagion	(Siebert et al., 2007)	6	6-Likert scale
Psychosocial safety climate	(Hall et al., 2010)	4	5-Likert scale
Leader-member exchange	(Graen & Uhl-Bien, 1995)	7	5-Likert scale

3.4.4.1. Employee wellbeing scale

The literature review included an extensive review of the theoretical and conceptual frameworks presented in Chapter 2. In addition, Chapter 2 included a review of 27 different psychometric and non-psychometric scales that have been developed and applied over the past 50 years with the objective of measuring employee wellbeing. The scales were assessed according to their applicability in the workplace and their definition of employee wellbeing. The details of this review can be found in Chapter 2 with a review of the different definitions of employee wellbeing and how to measure it. The conclusion was that the best available measure for employee wellbeing was the one developed by Brunetto et al. (2011). This scale used the same definition as this project, only had four items, and has been tested in Australian and international organisations. Moreover, this tool has been used in several multilevel studies (Farr-Wharton et al., 2021; 2022a; Xerri et al., 2019).

Brunetto et al.'s (2011) original scale was specifically suited to nursing, but a 2019 re-development (Farr-Wharton et al., 2019) aimed to make it suit any employee in any industry. The re-development of the scale consisted of the substitution of two of the original items ("Overall, I fulfil an important purpose in the work that I do" and "I get enough time to reflect on what I do

in the workplace") by two new items ("I feel content with my work" and "I get a sense of joy from my work").

The final four scale items used in this study are: (EWB_1) "Overall, I am reasonably happy with my work life", (EWB_2) "Most days I feel a sense of accomplishment in what I do at work", (EWB_3) "I feel content with my work", and (EWB_4) "I get a sense of joy from my work". The responses were obtained on a 6-point Likert scale ranging from strongly disagree to strongly agree. High scores represent perceptions of high levels of employee wellbeing. The reliability of this scale can be found on section 3.4.5.8.

3.4.4.2. Work stress scale

Work-related stress is a significant workplace issue, as presented in Chapter 2. It is defined as a psychological feeling of tension, strain, and anxiety caused by work tasks and duties. In other words, it is the physical, mental, and emotional reaction of employees who perceive that their work demands exceed their abilities and their available resources. It can thus negatively impact the performance and behaviour of employees.

Job stress was measured using a 5-item scale developed by Cullen et al. (1985). This scale has been validated and used to measure work stress in many different research projects. The studies that have used this measurement between January and October 2022 can be found in Table 18.

Table 18. Journal articles in English that referenced and used the job stress scale developed by Cullet et al. (1985) between January and October 2022.

Title	**Reference**
Understanding who is hired to work in U.S. prisons and why it matters: A call for research.	(Burton et al., 2022)
What it takes to be a "good" correctional officer: Occupational fitness and co-worker expectations from the perspective of correctional officer recruits in Canada.	(Cassiano et al., 2022)
Mental health outcomes among public social workers in the occupied Palestinian territories.	(Easton et al., 2022)
Suffering in silence: Violence exposure and post-traumatic stress disorder among jail correctional officers.	(Ellison & Jaegers, 2022)
Just another day's work: The nexus between workplace experiences and Post-Traumatic Stress Disorder (PTSD) in jail settings.	(Ellison et al., 2022)
"That doesn't leave you": Psychological dirt and taint in prison officers' occupational cultures and identities.	(Garrihy, 2022)

“Anything can happen at any time”: Perceived causes of correctional officer injuries.	(Goulette et al., 2022)
“Lockdown probation leaders” and fundamental human needs.	(Herzog-Evans & Sturgeon, 2022)
Pursuing a correctional career: The motivations and reasons for staying.	(Higgins & Swartz, 2022)
How conflict “bleeds over” for correctional staff: Exploring work-family conflict through correctional subculture.	(Higgins et al., 2022b)
“We keep the nightmares in their cages”: Correctional culture, identity, and the warped badge of honor.	(Higgins et al., 2022a)
Testing the job demands-resources model with organizational trust among prison staff.	(Keena et al., 2022)
Testing the job demands-resources model for organizational commitment among Indian correctional officers.	(Lambert et al., 2022b)
Testing the job demands-resources model in explaining life satisfaction of Nigerian correctional staff.	(Lambert et al., 2022a)
What matters most? Comparing the impact of individual, job, and organizational factors on job stress and job satisfaction among juvenile justice personnel.	(Mack & Rhineberger-Dunn, 2022)
COVID-19’s impact on black, female correctional officers and justice-involved individuals at Rikers Island jail.	(Martin-Howard et al., 2022)
Teachers' war against terrorism: A mediated moderation model.	(Memon et al., 2022)
The creation of a correctional officer trainee self-efficacy index: An application of item response theory.	(Miller et al., 2022)
Workplace safety: Perceived dangerousness versus experienced fear among community corrections personnel.	(Rhineberger-Dunn & Mack, 2022)
An evaluation of a yoga program designed for correctional administrators and officers.	(Smith et al., 2022)
“We are all humans and deserve a decent way to go”: Examining professional’s experiences with providing end-of-life care in correctional institutions.	(Steely Smith et al., 2022)
The development of prison officers’ job satisfaction and its impact on depersonalization of incarcerated persons: The role of organizational dehumanization.	(Stinglhamber et al., 2022)

Can't shake the prison guard blues: Examining the effects of work stress, job satisfaction, boundary violations, and the mistreatment of inmates on the depressive symptomatology of correctional officers.	(Worley et al., 2022)
Determinants of job dissatisfaction and its impact on the counterproductive work behavior of university staff.	(Yean et al., 2022)

The five items included in this scale are (WS_1) "A lot of the time my job makes me very frustrated or angry", (WS_2) "I am usually under a lot of pressure when I am at work", (WS_3) "When I am at work I often feel tense or uptight", (WS_4) "I am usually calm and at ease when I'm at work" (reversed item), and (WS_5) "There are a lot of aspects of my job that make me upset". The responses were obtained on a 5-point Likert scale ranging from strongly disagree to strongly agree. High scores represent perceptions of high levels of work stress. The reliability of this scale can be found in section 3.4.5.8.

3.4.4.3. Emotional contagion scale

Emotional contagion was measured using a 6-items scale developed by Siebert et al. (2007). A published study has used a workplace adaptation of this scale. This adapted scale is the most commonly used tool for measuring emotional contagion in the workplace as it was specifically designed for employees (Jung & Yoon, 2019; Petitta et al., 2017). A collection of the studies that used this scale in 2022 is presented in Table 19.

Table 19. Journal article in English that referenced and used the emotional contagion scale developed by Siebert et al. (2007) between January and October 2022.

Title	**Reference**
Modelling maternal depression: An agent-based model to examine the complex relationship between relative income and depression.	(Benny et al., 2022)

The six scale items are (EC_1) "When there is excitement happening around me at work, I remain cool" (reversed item); (EC_2) "At work, if colleagues appear to be worried about something, I generally remain calm" (reversed item); (EC_3) "If colleagues around me feel depressed, I also tend to feel depressed"; (EC_4) "If a colleague felt upset, I would also feel upset"; (EC_5) "At work, I would become nervous if colleagues around me appear nervous"; and (EC_6) "The colleagues around me have a strong influence on my mood". The responses were obtained on a 6-point Likert scale ranging from strongly disagree to strongly agree. High scores represent perceptions of high levels of emotional contagion amongst co-workers. The reliability of this scale can be found in section 3.4.5.8.

3.4.4.4. Psychosocial safety climate scale

Employees' perceptions of organisational priority for their mental and physical health as well as their satisfaction with team policies and practices were measured using a 4-item scale (PSC-4), which is a component of a bigger scale (PSC-12). The PSC-4 consists of the four items that build the managerial priority section of PSC-12. This factor was selected as it represents the interactions between managers and employees and how employees perceive these interactions as authentic. PSC-4 was developed by Dollard and Bakker (2010) and has been used in several organisational studies. A summary of these studies is presented in Table 20. According to Dollard (2019), PSC-4 is the most commonly used short scale for measuring psychosocial safety climate and has the best psychometric properties of all the instruments reviewed.

Table 20. Journal articles in English that used the psychosocial safety climate scale developed by Dollard and Bakker (2010) between January and October 2022

Title	**Reference**
Psychosocial safety climate moderates the effect of demands of hospital accreditation on healthcare professionals: A longitudinal study.	(Alshamsi et al., 2022)
A minute in time saves minds: Psychosocial safety climate (PSC-4) cut-points for early detection of mental distress.	(Dollard et al., 2022)
Facilitating stress prevention in micro and small-sized enterprises: Protocol for a mixed method study to evaluate the effectiveness and implementation process of targeted web-based interventions.	(Engels et al., 2022)
Emergency service workers: The role of policy and management in (re)shaping wellbeing for emergency service workers.	(Farr-Wharton et al., 2022a)
The Swedish HealthPhys study: Study description and prevalence of clinical burnout and major depression among physicians.	(Hagqvist et al., 2022)
"I was given three marks and told to buy a Porsche" – Supervisors' experiences of leading psychosocial safety climate and team psychological safety in a remote academic setting.	(Sjöblom et al., 2022)

The four items included in this scale are (PSC_1) "Managers show support for stress prevention through involvement and commitment"; (PSC_2) "Management clearly considers the psychological health of employees to be of great importance"; (PSC_3) "There is good communication here about psychological safety issues which affect me"; and (PSC_4) "In my organisation, the prevention of stress involves all levels of the organisation". The responses were obtained on a 5-point Likert scale ranging from strongly disagree to strongly agree. High scores

represent high levels of perception of managerial priority for employees' physical and mental health. The reliability of this scale can be found in section 3.4.5.8.

3.4.4.5. Leader-member exchange scale

Employees' satisfaction with the quality of the quality of their Supervisor-employee relationship was measured using a 7-item scale (LMX-7) developed by 1. According to Brunetto et al. (2014), the LMX-7 scale is the most commonly used tool for measuring Leader-member exchange quality and has the best psychometric properties of all the instruments reviewed. In fact, over 500 research papers published in 2022 used this scale. A summary of 2022 Australian studies is presented in Table 21.

Table 21. Journal articles in English that used the Leader-member exchange scale developed by Graen and Uhl-Bien (1995) with Australian data between January and October 2022

Title	**Reference**
A contemporary view of interpersonal aggression and cyberbullying through ICT: Multilevel insights from LMX differentiation.	(Akram et al., 2022)
Mediating-moderating effect of employee creativity and team potency on expatriate innovative work behaviour.	(AlMazrouei et al., 2022)
Leader-follower interpersonal behaviors, emotional regulation and LMX quality.	(Ayoko et al., 2022)
Work harassment in the UK and US nursing context.	(Farr-Wharton et al., 2022b)
Examining the effect of entrepreneurial leadership on employees' innovative behavior in SME hotels: A mediated moderation model.	(Hoang et al., 2022)
The role of transformational leadership on firm performance: Mediating effect of corporate sustainability and moderating effect of knowledge-sharing.	(Huo et al., 2022)
From empathic leader to empathic leadership practice: An extension to relational leadership theory.	(Jian, 2022)
Leader favorable feedback and withdrawal behavior: A moderated mediation model of gratitude and Leader-member exchange.	(Jiang & Qu, 2022)
Psychological contract, leadership, and job satisfaction: An empirical investigation into the non-profit sports sector.	(Megheirkouni, 2022)
Linking responsible leadership and green innovation: The role of knowledge sharing and Leader-member exchange.	(Shahzad et al., 2022)
Comparisons draw us close: The influence of Leader-member exchange dyadic comparison on coworker exchange.	(Tang et al., 2022)

Does middle leaders' learning-centred leadership matter in promoting teacher professional learning? A partial least squares analysis.	(Thien et al., 2022)
Leader crisis communication and salesperson resilience in face of the COVID-19: The roles of positive stress mindset, core beliefs challenge, and family strain.	(Tuan, 2022)
Catching emotions: The moderating role of emotional contagion between Leader-member exchange, psychological capital and employee well-being.	(Xerri et al., 2022)

The seven items included in this scale are (LMX_1) "Do you know where you stand with your direct supervisor, and do you usually know how satisfied your direct supervisor is with what you do?"; (LMX_2) "How well does your direct supervisor understand your job problems and needs?"; (LMX_3) "How well does your direct supervisor recognise your potential?"; (LMX_4) "Regardless of how much formal authority your direct supervisor has built into his or her position, what are the chances that your direct supervisor would use his or her power to help you solve problems in your work?"; (LMX_5) "Again, regardless of the amount of formal authority your direct supervisor has, what are the chances that he or she would 'bail you out' at his or her expense?"; (LMX_6) "I have enough confidence in my direct supervisor that I would defend and justify his or her decision if he or she were not present to do so"; and (LMX_7) "How would you characterise your working relationship with your direct supervisor?". Responses were obtained on a 5-point Likert scale ranging from strongly disagree to strongly agree. High scores represent perceptions of high levels of employee satisfaction with their relationship with their line manager. The reliability of this scale can be found in section 3.4.5.8.

3.4.5. Data analysis

In January 2022, after the data collection process finished and all surveys were closed for responses, the data analysis process begun. After the data preparation, 237 completed surveys were collected from 41 different work teams. All the data was securely stored following University of Technology Sydney Human Resource Ethics Committee advice, after which the data preparation process began. The data analysis process featured several important steps prior to testing the hypotheses of the theorised multilevel research model. The results of the data analysis are presented in Chapter 4 along with an in-depth discussion in Chapter 5. This section explores the data analysis process, including the data preparation, treatment of missing data, and analysis of outliers.

3.4.5.1. Data preparations

Data preparation is a key process within quantitative analysis for gathering, combining, organising, and structuring all data so that it can be used to test research hypotheses (Corrales et al., 2018). Data preparation includes addressing all the necessary aspects to ensure that the dataset is ready for the subsequent analysis. It includes the treatment of missing data and outliers, cleansing, structuring, validation of the data and the scales, and, if needed, transformation (Pallant, 2020).

To simplify the data wrangling process, each company received a different Qualtrics link with access to a different survey, although the content of the surveys was the same. Once all data was collected, all surveys were downloaded in a .sav file and stored safely in a secure electronic folder. The software used to access and prepare the data was the Statistical Package for the Social Sciences (SPSS) 28. The data management and storage information processes are discussed in section 3.6. After storing the raw data, a master SPSS document (.sav) was created with all the responses as well as an identifier for the organisation and another identifier for the work team that each employee (entry) belonged to.

That master file was screened to ensure that all the data was in a suitable condition for the rest of the analysis. According to DeSimone and Harms (2018), data screening can significantly improve the trustworthiness and quality of the data and the study results. Some of the key benefits of data screening include the identification of data issues that need to be addressed at an early stage. The master file had 293 responses in 41 different work teams, of which 56 responses were deleted as they were incomplete and presented missing data problems (see section 3.4.5.2).

Once all data was collected in the master file, an initial exploration of the data was undertaken. The aim of this initial data profiling was to identify patterns, relationships, and other potential attributes in the data as well as anomalies, inconsistencies, missing values, and outliers that could impact the data analysis (DeSimone & Harms, 2018).

3.4.5.2. Missing data

Missing data happens when an observation does not have an assigned value (Mirzaei et al., 2022), for example, if a particular question has no response because the respondent skipped or did not answer that question. When collecting data using a questionnaire, it is common to have missing data (Mirzaei et al., 2022), though there are options to avoid it to some extent. Missing data is particularly problematic in multilevel structural equation modelling with latent variables. At least up to August 2022, the best available software, Mplus, was not able to run the multilevel statistical analysis when there was untreated missing data (Winter & Depaoli, 2022). Therefore, it is

essential to address missing data as early as possible to avoid further problems with the data analysis.

Missing data can be classified in two different categories. On the one hand, there can be missing data when respondents leave certain items or questions of the survey unanswered (Mirzaei et al., 2022). When a participant leaves an item unanswered, it may be because they did not want to answer and skipped it on purpose or because of an involuntary error. In this study, all questions included in the survey were mandatory, and it was not possible to skip a question as Qualtrics has the option to bar participants from continuing without giving a response, thereby avoiding missing data. The second category of missing data happens when a participant leaves the survey unfinished by only completing the first questions of the survey (Mirzaei et al., 2022). This second type is particularly problematic for multilevel structural equation modelling, but it is also problematic for other types of analysis since a significant amount of missing data may cause problems with model fit or jeopardise the significance of the findings (Zhang & Savalei, 2022).

Within missing data, there are three types of missing values: missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR) (Pham et al., 2022). MCAR refers to completed data that cannot be distinguished from missing data. In other words, the causes of missing data are not related to the dataset. Data that presents MAR problems is identified following a pattern that can be linked with other items in the same dataset. This second type is more frequent than MCAR. If the missing data cannot be identified as MCAR or MAR, then it is data that is MNAR (also known as not missing at random, or NMAR). MNAR happens when there is no pattern to the missing data.

A screen check of the SPSS master file was undertaken to identify missing data. According to Karanja et al. (2013), there are two common strategies to work with missing data. These techniques are called first generation and second generation. The first-generation technique consists of removing the entries that have missing values. Researchers who use this technique propose that hypothesis testing should be run with data that is observed and not estimated (Awan et al., 2021; Kwak & Kim, 2017). Therefore, removing those entries with missing data would be the most appropriate technique to treat missing data. The first-generation method is the most common technique to deal with missing data (Awan et al., 2021). Those researchers who disagree with the first-generation technique argue that it can significantly reduce the sample size and reduce data representativeness (Kwak & Kim, 2017). The second-generation technique consists of a longer process that aims to estimate the missing values of missing data by employing other values within the dataset (Carter, 2006). As such, there would not be more missing data since all missing values would be estimated using other values in the same dataset. This method uses

imputation analysis to replace missing values using the mean, median, mode, or even a value obtained from previous statistical models (Dubey & Rasool, 2021). This is commonly used when there are missing items within the same variable (Dubey & Rasool, 2021). However, some have argued that if the proportion of missing data is larger than 10% of the total entry, imputation analysis would not be reliable and could present high levels of bias (França et al., 2021).

This research project used the first-generation technique because within the data collected there were no missing values that could be predicted using other available data. Some of the 56 entries that were removed had completed less than 80% of the survey, making it is impossible to predict what the other 20% of the responses that the participant left blank would have been. The final master data file contained 237 responses clustered within 41 different work teams.

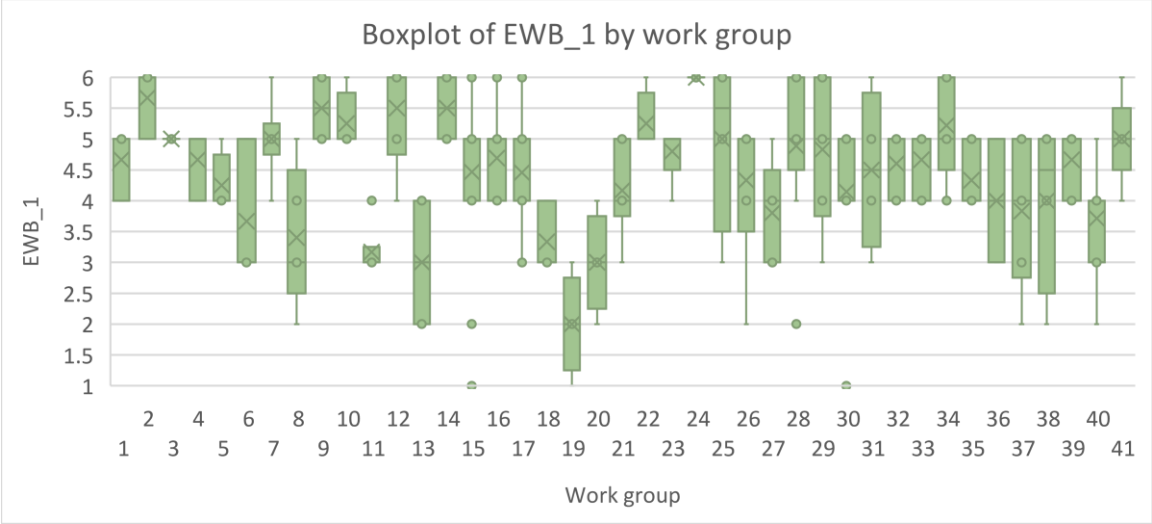
3.4.5.3. Outliers

A statistical outlier is a data point that significantly differs from the central tendency of a variable (Kwak & Kim, 2017), such as when all employees of an organisation earn an annual salary within a range except an employee who earns significantly more than the rest. According to Aguinis et al. (2013), when using Likert scales, those who respond on either end of the scale should not be considered outliers. However, outliers could exist in data collected using questionnaires when the respondent is unengaged with the survey (Barnett, 1994; Liu et al., 2010). Respondent disengagement could be due to lack of interest or survey fatigue, amongst other reasons (de Koning et al., 2021). In this case, participants enter random responses that then follow a pattern and, in some cases, may even contradict each other.

Another cause of outliers in survey data that asks participants to self-report behaviours is response bias, also known as survey bias (Beaumont & Rivest, 2009). Response bias occurs when participants respond with an inaccurate answer or do not respond truthfully (Giromini et al., 2022). Research shows that participants are more likely to over-report good behaviours and under-report bad or negative behaviours (Vashistha et al., 2018).

In this project, to check for potential outliers in each work group, the researcher completed a first visual evaluation using a boxplot. A boxplot is a method to graphically analyse the spread of the distribution for each work group and potential skewness. See, for example, Figure 7, which represents the boxplot of the first item of the employee wellbeing scale (EWB_1) by work group.

Figure 7. Boxplot of the responses for employee wellbeing by work group



Note. The graph represents a boxplot per work group for the survey item EWB_1.

Following the analysis of the boxplots, the standard deviation of the answers for all same-value responses of each participant was calculated using SPSS. If the standard deviation is between 0 and .25, this indicates that there is little or no variance in the responses, implying that the participant was unengaged and could therefore be removed from the dataset (Collier, 2020). After running the analysis, the present data did not contain standard deviations below .65. Hence, it can be assumed that all participants were engaged and that there were no outlier responses to be removed. The final dataset contained 237 responses grouped within 41 different work teams.

3.4.5.4. Multivariate normality

A normal distribution, which is also known as Gaussian or Laplace-Gauss distribution, is a continuous probability distribution for a real-valued random variable (Westfall & Henning, 2013). In other words, it is a distribution where a random variable normally deviates from the mean or another central point such as the median or the mode (see Equation 3; Stevens, 2009).

Equation 3. Probability density function for a normal distribution

$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{x-\mu}{\sigma}\right)^2}$$

Where:

x is the random variable

σ is the standard deviation of the distribution

μ is the mean of the distribution or chosen the central tendency point

Before running a multilevel structural equation model, it is recommended to test for multivariate normality (Thode, 2002). There are different options for testing for normality. According to Thode (2002), a normally distributed variable needs to have a particular shape that can be plotted

using a histogram with a normal curve. Then the distribution of the variable is visually compared against the normal curve to check for potential normality problems. Additionally, the variable must also have a skewness and kurtosis between -2 and +2 (George & Mallery, 2010). Skewness and kurtosis statistics for all items of the survey can be found in Chapter 4.

3.4.5.6. Intraclass correlation

This study's two-level analysis includes the lower individual level of variance amongst employees and the higher level of the work team analysing the variance caused by the work team that the employees belong to. This study does not look at the influence of other higher levels on such variables or relationships. Another higher level that could be considered in future research is the organisational level.

Other potential levels of analysis include country and industry. However, for this study, these levels were not relevant. All the respondents belong to the same country, Australia. Only data from Australian organisations was collected, and thus the variance caused by the economy, or the country level cannot be studied. However, this could be studied if sufficient data were collected from many different countries. In this case, this was not possible due to time and money limitations. Equally, all participant organisations belong to the professional services industry, which encompasses all those occupations in the service sector that require specific training and licensing or a professional degree (Nishikawa & Orsato, 2021), such as architects, designers, accountants, engineers, lawyers, and teachers (Reid, 2008). As with the economy level, the industry level could also be studied if sufficient data from many different industries was collected. Moreover, three or four-level data analysis is more complex and requires high level technology to support it (Muthén & Muthén, 2009).

The organisational level could be a relevant level of analysis. However, in this case, this level was not considered for several reasons. First, the academic literature on emotional contagion theory, social exchange theory, and conservation of resource theory mentions that the relevant part of professional relationships is at the team level (Benitez et al., 2019; Kammerlander et al., 2017; Spell & Arnold, 2007; Wang et al., 2017). Barsade (2002) argues that emotional contagion happens via direct contact, whether face-to-face or online, with another person. As such, within large organisations, this interaction does not happen at the company level but at the team level through frequent contact between co-workers belonging to the same team.

Moreover, data from only nine organisations was collected. It is statistically impossible to perform multilevel data analysis with the available statistical software. Additionally, some argue that to have sufficient reason to undertake a multilevel analysis, the intraclass correlation (ICC) at that particular level needs to be above .1 to reduce estimation problems (Lüdtke et al., 2008).

González-Romá & Hernández (2017) suggest that the threshold should be .05. ICC is a statistical measure that describes the similarity between observation within a group. describes the variable strength within each cluster from 0 to 1, with 0 being no relationship and 1 being a strong intraclass relationship. ICC is calculated as the variance of the unobserved random effect over the total variance, which is calculated as the sum of the variance of the unobserved error (see Equation 4). It is commonly used in multilevel studies to understand the proportion of variance that resides at the team level, and additionally, the degree of dependence between two individual scores of the same unit or two different members of the same team (Kollo, 2008). Three level ICCs are presented in Chapter 4.

Equation 4. Intraclass correlation formula

$$ICC = \frac{\sigma_\alpha^2}{\sigma_\alpha^2 + \sigma_\varepsilon^2}$$

Where:

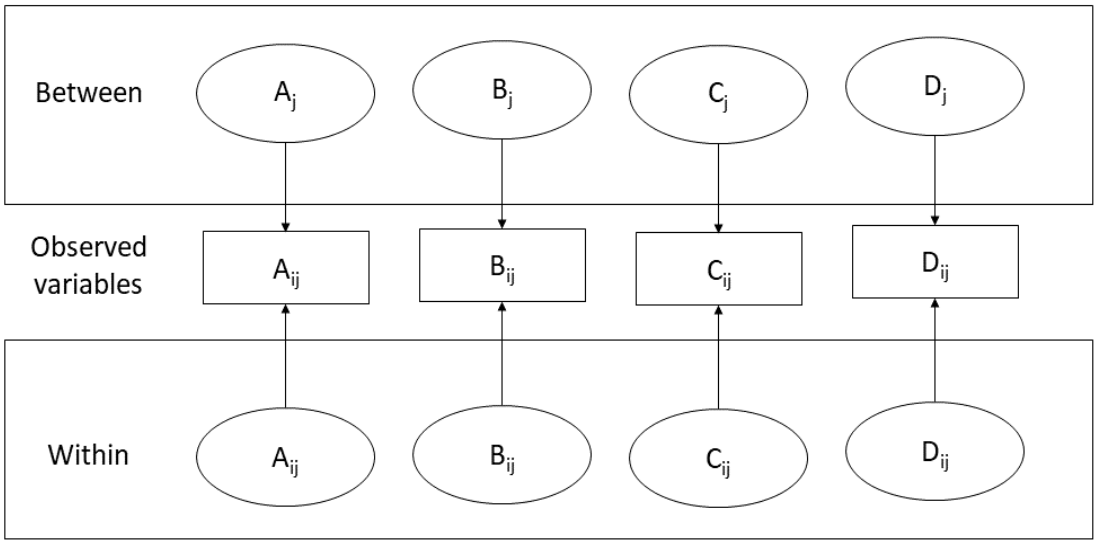
σ_α^2 is the variance of the unobserved random effect shared by all values in the cluster

σ_ε^2 is the variance of the unobserved error

3.4.5.7. Multilevel structural equation modelling

Multilevel structural equation modelling was chosen to test the hypotheses, which aligns with multilevel organisational theory and a post-positivist research philosophy (Kozlowski & Klein, 2000). This technique is used to study the relationships between observed and latent variables (Preacher et al., 2010). A latent variable is one that cannot be observed directly and instead needs to be indirectly inferred through another that can be observed. In this case, the concepts under the theoretical model, such as employee wellbeing levels or employees' perceptions of managerial priority, cannot be directly observed. Instead, these concepts are inferred (or observed) using psychometric questionnaires and a Likert scale that allows researchers to measure such constructs. Figure 8 represents the observed variables and how they are caused by variation in the latent variables at both the between and within levels.

Figure 8. Within and between variance in multilevel structural equation modelling using latent variables



Note. The observed variables are jointly caused by both the within and the between variation as latent variables. Adapted from *Multilevel SEM*, by M. Hallquist, 2017 Dec 7, https://psu-psychology.github.io/psy-597-SEM/15_multilevel/multilevel_sem.html. Copyright 2017 by Michael Hallquist.

Multilevel structural equation modelling investigates two types of relationships. First, the multilevel measurement model studies the relationship between the observed variable and the latent variables at the within and between levels. Second, the multilevel structural model analyses the causal relationship between latent variables (Preacher et al., 2010). As such, the goal of the analysis is to determine the statistical significance of the hypothesised model using the sample data.

The use of multilevel structural equation modelling offers four benefits according to Hallquist (2017). First, multilevel structural equation modelling uses path diagrams that support researchers in conceptualising complex multilevel structures. Second, it allows for mediation and moderation effects at both levels (within and between) (Preacher et al., 2010; 2016) as well as cross-level interactions (Aguinis et al., 2013). Third, standard multilevel modelling cannot incorporate models with latent variables, which can easily be implemented in multilevel structural equation modelling. Last, the incorporation of group mean centring within multilevel models could introduce an important bias at the between-level variance. With small sample sizes and intraclass correlations below .5, as is the case of the present study, multilevel structural equation modelling provides better estimates at the between level. As such, multilevel structural equation modelling is the best statistical technique to test the theorised model.

Mplus is the best statistical package available to date to run multilevel structural equation modelling. As specified by Asparouhov and Muthén (2008), the formal equation of a multilevel structural equation model is specified in Equation 5.

Equation 5. Specification of multilevel structural equation model

$$Y_{ij} = \nu_j + \Lambda_j \eta_{ij} + \mathrm{K}_j \mathrm{X}_{ij} + \varepsilon_{ij}$$

Where:

ν_j are the intercepts of the variables that can vary according to the cluster

Λ_j are the factor loadings

η_{ij} are the factor scores

X_{ij} are the influence of the exogenous covariate

3.4.5.7.1. Multilevel exploratory factor analysis

Exploratory factor analysis (EFA) is a statistical method that is used to determine the underlying structure of a set of observed variables (Watkins, 2018). This statistical technique analyses the underlying relationship between different survey items (Finch, 2020). Most journal articles that develop a new psychometric scale to measure a latent construct use EFA (Watkins, 2018). With this technique, researchers analyse the correlation rates between items by grouping them into factors. It is a statistical method that is not bound by theory. Instead, it is used to reveal correlations between items. Moreover, it helps to uncover validity issues that would be ignored by a confirmatory factor analysis (Costello & Osborne, 2005).

Because this research project uses clustered data within work teams, it is also necessary to use a multilevel EFA (D'Haenens et al., 2010). Traditional EFA also assumes that the observations are independent from each other, which is not the case with clustered data. A multilevel EFA is a more complex technique than the traditional single-level EFA, and it does not assume that the observations are independent (Huang & Cornell, 2016). Since 2009, Mplus has the programming code to run two-level EFA (Muthén & Muthén, 2022), which allows researchers to investigate the psychometric properties of instruments using grouped data.

Although this research project has used validated scales to measure the constructs included in the theorised model, the analysis of the measurement model began with a multilevel EFA. The main aim of running a multilevel EFA is to explore the collected data and determine if the multilevel theorised model makes sense from a statistical point of view (Dunn et al., 2015). If potential weaknesses are detected in the scales utilised to measure the research model, the researcher can address them earlier and make different decisions before proceeding with the following step of multilevel confirmatory factor analysis (Roesch et al., 2010).

3.4.5.7.2. Multilevel confirmatory factor analysis

Confirmatory factor analysis (CFA) is another statistical method used to verify the factor structure of a set of variables. This technique allows researchers to test the hypothesis that the underlying

latent construct exists and is indeed measured with that set of observed variables. Traditionally, EFA and CFA are run on different samples. However, some argue that they should be conducted using the same dataset (Kyriazos, 2018). If not, it is impossible to determine if any differences between the two are caused by methodological issues. Van Prooijen and van der Kloot (2001) point out that if both EFA and CFA are conducted using the same dataset, this would be the ultimate test for methodological explanations for any variances between both tests. Several research papers have adopted this approach since van Prooijen and van der Kloot's methodological paper was published in 2001 and report both EFA and CFA (e.g., Schmitt et al., 2018).

However, as with EFA, CFA also needs to be run at both the within and the between levels. According to Wu et al. (2017, p. 1), multilevel CFA "extends the power of CFA to accommodate the complex survey data with the estimation of the level-specific variance components and the respective measurement models". In other words, the hierarchical structure of the data can result in erroneous findings about the factor structure of the set of variables. As with EFA, the assumption that the observations are independent is violated due to their multilevel nature. According to Dyer et al. (2005, p. 151), there is also a need for a multilevel CFA "since the nature of the construct can differ across levels of analysis". As such, the factor analysis and discriminant validity results may be different across levels.

The traditional procedures that have been utilised to conduct multilevel CFA have been criticised. Some researchers have chosen to use the total covariance matrix derived from the full dataset to conduct the factor analysis. In so doing, they have ignored the multilevel structure of the data and therefore reached incorrect conclusions (Muthén, 1994). To prevent this, Muthén (1994) developed a five-step procedure to conduct multilevel CFA, and this is the procedure that has been adopted in this research project.

First, it is necessary to conduct a conventional CFA on the sample total covariance. Although the results may be biased as this step assumes that the observations are independent, the results are used as a baseline to compare with the following steps. The second step consists of estimating between-cluster level variation. The aim of this step is to understand if multilevel analysis is appropriate and needed for the collected dataset. The technique employed to determine if multilevel analysis is necessary is to check the ICC. The results of this analysis are presented in section 3.4.5.6. to justify a multilevel statistical analysis. Following this, the next step is to perform a factor analysis on the sample pooled-within covariance matrix. To this end, Muthén (1994) argues that it is beneficial to discretely analyse the within- and between-level sub-models. This step used a matrix with adjusted values that remove between-cluster differences. If the model

fit of the sample pooled-within covariance matrix is significantly better than that obtained in the first step, the within-level variance is higher than the between-level variance. Step 4 is to perform a factor analysis on the sample between-cluster covariance matrix. Results from this step would provide preliminary information about the appropriate group-level factor. However, as noted by Dyer et al. (2005), this is not possible with small group-level sample sizes, as is the case in this research project. Nonetheless, Dyer et al. (2005) argue that it is still possible to proceed to step 5 and finish the multilevel CFA without conducting the previous step.

The last step consists of performing the multilevel CFA. In this study, this step was run with two variables at a time using Mplus. Due to the small number of groups, a full multilevel CFA with all the variables included in the theorised model could present problems due to the small degrees of freedom. Results of the multilevel CFA can be found in Chapter 4.

3.4.5.8. Reliability and validity

Before analysing any dataset that uses multi-item psychological instruments, it is necessary to ensure that the instrument has a good reliability score. To this end, researchers should obtain and report reliability information of the instruments that are used in the research model. Reliability is often conceptualised as the internal consistency of the scale or the correlation among the latent and observed variables. It is the ratio between the true variance and the observed variance. The most common statistic for reporting reliability is Cronbach's alpha (α). Cronbach's alpha is also known as tau-equivalent reliability and measures internal consistency by multiplying the number of survey items with the average covariance between item-pairs and dividing this by the average variance plus the number of items minus one multiplied by the average covariance between item-pairs (see Equation 6).

Equation 6. Cronbach's alpha formula

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Where:

N is the number of survey items

$\bar{c}$ is the average covariance between item-pairs

$\bar{v}$ is the average variance

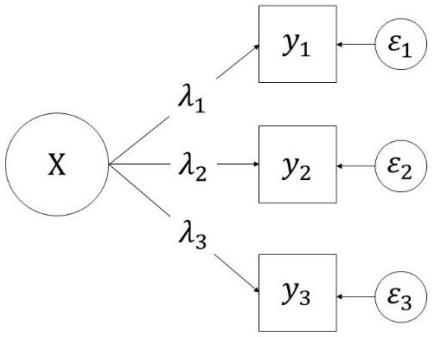
However, Cronbach's alpha presents several limitations. It assumes both that the measures are unidimensional (single-level) and that they all have equal factor loadings, which is also known as essential tau equivalence. Both these assumptions pose problems for reporting multilevel reliability (Hayes & Coutts, 2020). First, reliability must be analysed using a tool that allows for

multidimensional measures. Second, essential tau equivalence appears to be rarely true in factor analysis (for both single-level and multilevel).

According to Hayes and Coutts (2020), the best alternative to Cronbach's alpha is McDonald's omega (ω). To find this omega, the latent and observed correlation must be directly estimated, and the ratio between the true variance and the total variance must be studied. The square root of omega is the true and total correlation between the latent and observed variables. To find McDonald's omega in Mplus, it first must be coded. In the present research, the analysis was completed following the code suggestions by Lai (2021).

In a latent variable (X) with three items (y_1, y_2, y_3), each of these will have its own factor loading (λ_i) and its own error (ε_i), as represented in Figure 9.

Figure 9. Path diagram of a latent construct with three items



Note. Path diagram of a latent construct (X) with three items (y_1, y_2, y_3), each with its own error ($\varepsilon_1, \varepsilon_2, \varepsilon_3$) and factor loading ($\lambda_1, \lambda_2, \lambda_3$).

To calculate McDonald's omega, the first step is to fix the latent variance to 1 to obtain standardised values. Second, the true-score variance must be found by summing the freely estimated loadings and squaring them ($\sum(\lambda_i)^2$). Then, the error variance must be identified; this can be done by summing the residual variance ($\sum(\varepsilon_i)$). To measure the omega, the true-score variance is divided by the total, which is the sum of the true-score variance and the error variance ($\sum(\lambda_i)^2 + \sum(\varepsilon_i)$), as per

Equation 7.

Equation 7. McDonald's omega formula.

$$\omega = \frac{\sum(\lambda_i)^2}{\sum(\lambda_i)^2 + \sum(\varepsilon_i)}$$

Where:

λ_i are the freely estimated factor loadings

ε_i are the residual variances

With a two-level model, the omega should be calculated at the within (individual) and at the between (team) level. This can also be done on Mplus by using *model constraint* syntax. The present study included two different omegas: one at the within and one at the between level. A sample of the Mplus code used to calculate the McDonald's omega for the employee wellbeing scale can be found in Appendix 5.

The McDonald's omega at the between levels tends to be very high due to the high correlation between variables at the cluster level. At the within level, traditional thresholds for other reliability metrics also apply. For example, Kline (2013) and Dunn et al. (2014) argue that the reliability index should be above .7 to be considered a reliable scale, while Wicke et al. (2022) claim that the minimum valid score is .8. Others have argued that lower reliability scores are also acceptable as long as the factor analysis validates that the factor and the latent variable represent the true score (Preacher et al., 2010). In a multilevel structural equation modelling, only the latent true score variance is used, while the error variance is not used. The McDonald's omegas for each of the utilised scales are presented in Chapter 4.

In the social sciences, and particularly in research projects that use a psychometric scale, it is common to have high correlations between constructs (Simonoff et al., 2013). As a result, it is necessary to test the discriminant validity of the scales to ensure that they measure only one construct. Different measures measuring different constructs cannot be strongly correlated; if they are, constructs may not be discriminating between each other, which can cause problems with the results of the model. In other words, if the variables are strongly correlated, the scales would be measuring the same concept, and therefore a significant regression between them would not be meaningful. According to Simonoff et al. (2013), correlation levels between variables above .7 present several complications. The method developed by Gorsuch (1983) to assess the discriminant validity of the variables was used in this model. This method has been extensively used in multilevel modelling (i.e., Farr-Wharton et al., 2021 and Sideridis et al., 2018). To test for discriminant validity, Gorsuch (1983) proposes to compare the model fit of the freely estimated multilevel CFA against a model where all correlations are constrained to 1. If the model fit of the constraint model is significantly worse than the freely estimated model, it can be

concluded that the discriminant validation of the tested variables is supported. Results of this comparison are presented in Chapter 4.

3.4.5.9. Multicollinearity

Multicollinearity is a statistical concept that happens when two or more of the independent variables of a regression model are highly correlated (Shieh & Fouladi, 2013). This high correlation amongst independent variables may or may not be casual, but it has important implications for analysis regardless. When regression or structural models suffer from multicollinearity, the effect of the independent variables on the dependent variables is overestimated and therefore less reliable (Alin, 2010).

For single-level structural equation models, different techniques have been developed to assess for multicollinearity. One of these is the VIF, which analyses the tolerance of a variable by the squared multiple correlation of the variable with all other predictor variables. However, with multilevel analysis, it is necessary to study the correlations between variables at both levels (within and between).

Correlation levels between variables at the within level tend to be low (Simonoff et al., 2013). However, at the between cluster level, multicollinearity issues are more persistent. Within social sciences, the correlation absolute value between items should be .5 for multicollinearity to be inexistent, but at the between level, the correlation absolute value between items of different constructs could be up to .7 for multicollinearity to be considered acceptable (Simonoff et al., 2013). Correlation levels at both levels of analysis are presented in Chapter 4.

3.4.5.10. Model fit

In structural equation modelling, *model fit* (also known as goodness of fit or global fit) can be defined as the analysis of how well the model represents the original dataset. To identify how good the model fits the population, there are several tests that can be used. These tests can be classified in two different groups: absolute and comparative. First, absolute fit indices which are a function of the test statistic. These absolute fit indices tend to quantify global fit using the model residuals or the population covariance structure. Second, comparative fit indices compare the specified model with a baseline model. The baseline model is a minimal model that normally only contains variances for observed endogenous variables. Moreover, the baseline model also assumes that there are no covariances among the different variables. As such, comparative fit indices compare the specified model with a model where all variables are independent. This section presents the different model fit indices that have been used for both the measurement model and the specified multilevel structural model.

As the multilevel structural model is specified using random slopes and the between-level sample size is small, the estimator used is Bayes (see section 4.2.1). With Bayes estimator, the model fit indices that are generated by Mplus are not the frequently used statistics. These include the deviance (DIC) and the estimated number of parameters (pD). However, Bayes statisticians recommend to remove the random slope and use maximum likelihood estimator to report on model fit (Levy, 2011). It could be argued that when adding the random slope, the model fit will change but since the random slope can only improve the model, this is not a problem.

To test and report model fit, this study utilised the methodology developed by Anderson and Gerbing (1988). Hu and Bentler (1999) published the cut-off criteria for model fit indices in structural equation modelling. This thesis reports on five different model fit indices: Chi-square over degrees of freedom (CMIN/DF), comparative fit index (CFI), Tucker Lewis Index (TLI), standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA).

First, Chi-square goodness of fit test is used to test if a set of variables come from a specified distribution or not. It is also used to determine if a sample dataset represents the population. The Chi-square is divided by the degrees of freedom. Degrees of freedom is the maximum number of independent values in the data set. A frequently used absolute goodness of fit statistic is Chi-square over degrees of freedom (CMIN/DF), which is considered good below 3, and acceptable below 5. However, this test has an important limitation. It is highly susceptible to the sample size. The bigger the sample size, the better results obtained. Therefore, it presents some problems with small samples, and it tends to be biased when using big datasets.

To overcome the sample size problem, the second goodness of fit test offers some solutions. Comparative fit index (CFI) is a model fit index that examines the discrepancy between the data and the hypothesised model and adjusts for the issue of sample size. The results of CFI vary from 0 to 1 and it is considered that the model has good fit when the CFI is above .95, and acceptable when it is above .9.

Third, Tucker Lewis Index (TLI) is a non-normed fit index that was developed by Tucker and Lewis (1973), and it also addresses the sample size issue that Chi-square presents. The results of TLI also vary from 0 to 1 and are considered good above .95, and acceptable above .9.

Fourth, Standardised Root Mean Square Residual (SRMR) analyses the average of standardised residuals between the observed and the hypothesised covariance matrices. A model is supposed to have an acceptable fit when the SRMR is between 0 and .08. Finally, the Root Mean Square Error of Approximation (RMSEA) tests for close or approximate fit instead of perfect or exact

fit. Testing for approximate fit has some benefits as it is not realistic to aim for a perfect fit with large populations and small sample sizes. RMSEA is considered acceptable below .08 and good below .05.

The results for all these model fit indices are presented for the measurement model and the structural model in Chapter 4.

3.5. Ethics and risks

Any research project faces ethical challenges (Clark et al. 2018; Hoque & Rana, 2018). Ethical principles and values are used to support the research project in reaching its goals while maintaining the rights of the research participants (Panter & Sterba, 2011). Internet-based research technologies have transformed the research environment and require extra considerations (Clark et al. 2018).

Ethical considerations are an essential part of any research to ensure data security and the safety of participants throughout the whole process. In this research, ethical considerations are especially important as primary data was collected directly from participants (employees), and some questions could cause risk for participants, even if the survey was designed to cause minimal disruption. It would be reasonable to expect that any distress experienced would be transient in nature for the majority of individuals. However, as it is important to consider the one participant who may react negatively to the questions, this section addresses all the potential risks. This project was categorised as high risk in the University of Technology Sydney (UTS) ethics assessment.

The ethical considerations associated with this project have been summarised in Table 22. These include the use of appropriate methods to achieve the project aim based on a thorough study of current literature, and the fact that the study was designed to ensure that respect for participants would not be compromised at any stage. All ethical considerations correspond to UTS ethics guidelines. As such, approval from the UTS Human Research Ethics Committee was sought prior to data collection and granted in August 2021. The COVID-19 pandemic did not have any major impact on the data collection as this was done remotely and online.

In addition, this project also aimed to be respectful to every participant, including the university and all researchers. For this reason, all participants were at liberty to make their own decision regarding participation. Consent was voluntary and given freely without coercion, pressure, or intimidation, and participants were fully informed using an information sheet in the survey. The participant information sheet included all relevant information as well as an independent contact from the UTS ethics research team in case any participant wished to make further comments. A

copy of the participant information sheet can be found in the Appendix 3. Participants were entitled to withdraw from the data collection at any stage, and all data collected was anonymous and kept in e-Research secure data storage that only designated researchers have access to in order to ensure privacy.

To identify which team a respondent belonged to, a unique identifier was needed for each team that every team member identified. As is common, the approach taken in this study was that employees generated a code based on their manager's first and last names. Collecting this data was necessary because it was to be a particular form of analysis that allowed for significant contributions and outcomes. While there was the potential for some identifiable information to emerge, the risk of this was mitigated by the storage processes that the researcher established. It is also important to note that the purpose of this study was not to collect identifiable information.

Table 22. Ethical considerations

Ethical considerations	**How have they been addressed?**
National legislation and UTS guidelines and policies.	The researcher consulted with UTS ethics committee and gained UTS Human Research Ethics Committee approval prior to data collection.
UTS Ethics Application	The application was done in consultation with the Ethics Research team via email and in several Ethics Clinic sessions as well as with the support from the supervisors of the project to ensure that it included every ethical aspect that needed to be considered. UTS ethics committee provided approval before proceeding.
Use of the appropriate methodology	The research which included human participant data, was designed following UTS guidelines and policies as well as the literature, theory and with the supervision of my panel.
Information Security Classification	The UTS data security classification was: Confidential.
Gaining permission from organisations involved	Any ethical standards that may have been required by the organisations, as well as UTS, were consulted.
Collection and use of personal information with consent of the participant	Participation was voluntarily, free and a participant information sheet was provided at the beginning of the online survey. This PIS was designed following the UTS template. Additionally, participants could withdraw at any stage.

Potential for participants to experience harm, anything more than discomfort	Firstly, a PIS was provided at the start of the survey, and participants could withdraw at any stage. This ensured that participation was voluntary, free, and fully informed. The survey had, in three different sections, the contact details of three organisations that could provide free support in case the survey evoked some issues: Beyond Blue, Lifeline and Head to Health. In the case of the participants experiencing some harm, they could reach out to any of these organisations. Also, the contact details of UTS Ethics Research team were available as an external party.
Ensuring data security	The Research Data Management Plan was in place to avoid any data breach. The data was collected through UTS Qualtrics, and all data was stored in a UTS e-Research secure location which had been organised with the UTS IT team.
Sharing of the research results with the organisation	This was done through a benchmark report where the data was grouped in teams and anonymity of participants was assured. Data was not identifiable.
Infringement of the privacy or professional reputation of participants, their managers, or the organisation	Infringement of the privacy or professional reputation of the participants, their managers, or the organisation was very unlikely. Any potential identifiable data would be destroyed upon usage or if any survey responses were disclosed to the participant organisation nor any other party.
Identification of participants through data triangulation.	The survey requested demographic information. This information was only collected to be used as mediators or moderators of the research model. It was not to be presented to the organisation. This avoided any individual being identified through data triangulation.

3.6. Conclusion of the chapter

This chapter presented the methodology adopted for this thesis. The aim of this chapter was to justify and explain the adopted research methods and to provide an extensive description of the research design. It began with the exploration of the approaches to employee wellbeing research. Employee wellbeing has been studied using both quantitative and qualitative research methods. However, to answer this project's research questions, this study focuses on a quantitative multilevel approach under a post-positivist research philosophy. Post-positivism and pragmatism

have also been extensively explored in this chapter. This research project sits under the umbrella of these two research paradigms. The logic used is mainly deductive and while there is a reality, there also needs to be a combination of different perspectives to help interpret the data. Therefore, the interpretation of the results takes a subjective approach that is impacted by the researcher's set of beliefs.

The chapter follows with an introduction to quantitative methods and in particular, to multilevel statistical analysis. Then, there is an in-depth presentation of this project's research design which has several parts. First, the research design begins with the population sampling and the target population under study. Second, the data collection process and the different steps that were followed are presented. The data was collected using an online survey programmed using Qualtrics. Collecting data using an online survey has some important implications that are explored in the third section. Fourth, the section was followed by a comprehensive presentation of the different questionnaire scales that were adopted for the different constructs included in the theorised model: employee wellbeing, work stress, emotional contagion, psychosocial safety climate, and Leader-member exchange. Fifth, the chapter continued with the complex data analysis process that was undertaken including the data preparation, how missing data and outliers were addressed, the sample demographics, multivariate normality, intraclass correlation, the different steps to conduct a multilevel structural equation modelling, reliability and validity of the scales used, multicollinearity and model fit indices. The chapter concluded with the ethical considerations and the risk management plan adopted in this study.

Chapter 4. Results

This chapter presents the results and findings from the analysis of the survey data. The purpose of this chapter is to present the results of the data analysis that tested the hypothesised relationships between employee wellbeing, work stress, psychosocial safety climate, Leader-member exchange, and emotional contagion. However, before proceeding with the structural equation model, this chapter presents the variable descriptive statistics: minimum, maximum, mean, and standard deviation. This is followed by the sample demographics: gender, year of birth and tenure. Finally, the chapter presents the results of the model. Within this study, there are two categories of statistical models. Firstly, the *measurement model*, also called the outer model. And second, the *structural model*, or inner-model. Results of both are presented in this chapter. The measurement model section presents the results of the multivariate normality test, the intraclass correlations that justify a two-level analysis, the exploratory factor analysis and the multilevel confirmatory factor analysis, where the relationship between the latent variables and their scales were examined. This part is followed by the results of the multilevel structural equation modelling. The multilevel structural equation model presents the relationship between the latent variables, including the cross-level moderating effect of emotional contagion on the relationship between work stress and employee wellbeing and the double or chain mediation between psychosocial safety climate and employee wellbeing by Leader-member exchange and work stress. Finally, this chapter concludes with a summary of key findings resultant from the data analysis.

4.1. Descriptive statistics

Descriptive statistics help researchers understand the dataset before running any other statistical analysis techniques. After data preparation, addressing missing data, and checking for outliers, the final dataset had 237 employees within 41 work teams. This section presents the minimum, maximum, mean and standard deviation of each variable included in the hypothesised model. All the descriptive statistics have been rescaled from their Likert-scale to a scale from 0 to 1 to simplify their readability. The results of these descriptive statistics are presented in Table 23.

The minimum for employee wellbeing was .2 and the maximum 1. Employee wellbeing had a mean statistic of .61 and a standard deviation of .16. This suggests that overall, the sample experience moderate levels of employee wellbeing. The minimum work stress level was 0 and the maximum .75. Work stress had a mean statistic of .45 and a standard deviation of .17. These results suggest that the sample of employees experience moderate levels of work stress. For psychosocial safety climate, the minimum score was 0 and the maximum 1. The mean statistic was .65 with a standard deviation of .21. This suggests that the cohort perceives a slight prioritisation of their wellbeing above productivity by management. The Leader-member

exchange minimum value was 0 and the maximum was 1. The mean statistic was .67 with a standard deviation of .2. These results suggest that the sample perceived a slight level of support from their line manager. Finally, the minimum value of emotional contagion amongst the participants was 0 and the maximum was 1. The mean statistic was .42 and the standard deviation was .22. This suggests that the cohort experiences moderate to low levels of emotional contagion within their work teams.

Table 23. Normalised minimum, maximum, mean and standard deviation of the model variables on a scale of 0 to 1

Variable	Minimum	Maximum	Mean	Standard Deviation
Employee wellbeing	.2	1	.61	.16
Work stress	0	.75	.45	.17
Psychosocial safety climate	0	1	.65	.21
Leader-member exchange	0	1	.67	.20
Emotional contagion	0	1	.42	.22

Note. N = 237 participants

4.2. Sample demographics

Demographics are statistics that explain the characteristics of a population or sample. After data preparation, addressing missing data, and checking for outliers, the final group count was 237 employees within 41 work teams. The survey included three demographic questions on gender, year of birth, and tenure.

The frequency analysis of the demographic questions can be found in Table 24, which shows that 70% of responders (166) were female, 30% were male (71), and none of the participants selected other or "prefer not to disclose". Of the total sample, 42% (100) of respondents were born between 1990 and 1999, 34% (81) were born between 1980 and 1989, 12% (29) were born between 1970 and 1979, 7% (16) were born between 1960 and 1969, 3% (7) were born after 2000, and 2% (4) were born between 1950 and 1959. The largest proportion of participants (33%; 79), had been employed for one to two years by their current organisation, while 27% (64) had been employed by the organisation for three to five years and another 27% (63) for less than a year. Finally, 10% (24) had been employed by their current organisation for six to 10 years, 2% (4) for over 15 years, and 1% (3) for 11 to 15 years.

Table 24. Frequency analysis of the demographic questions

Demographic	Variable	N	%
Gender	Female	166	70
	Male	71	30
	Other or prefer not to disclose	0	0
Year of birth	1950-1959 (62-71 years old)*	4	2
	1960-1969 (52-61 years old)*	16	7
	1970-1979 (42-51 years old)*	29	12
	1980-1989 (32-41 years old)*	81	34
	1990-1999 (22-31 years old)	100	42
	2000-2009 (19-21 years old)*	7	3
Tenure	< 1 year	63	27
	1-2 years	79	33
	3-5 years	64	27
	6-10 years	24	10
	11-15 years	3	1
	> 15 years	4	2

Note. N = 237 participants; * *at the data collection time*

4.3. Results of measurement model

Before presenting the results of the measurement model, it is necessary to comment on two additional tests. This section begins with the results of the multivariate normality test. Then, the intraclass correlation of all measures is presented to justify the need of a two-level analysis. Finally, the measurement model is presented using two factor analysis as suggested by Costello and Osborne (2005). First, results of the multilevel exploratory factor analysis are presented to help uncover validity issues that could be ignored if this step was skipped. Second, the section presents the results of the complex multilevel confirmatory analysis. This last factor analysis is run on each variable, including the multilevel observed intraclass correlation coefficients for all items, the multilevel correlation between items, the scale model fit, its factor loadings, the reliability index using McDonald's omega, and its validity and collinearity statistical analysis.

4.3.1. Multivariate normality

Thode (2002) suggests testing for multivariate normality before running a multilevel structural equation model. In fact, it is also recommended with single level models. A normally distributed variable has a particular shape that can be plotted in a histogram and compared against the normal

curve. Moreover, the variable must also have a skewness and kurtosis between -2 and +2 (George & Mallery, 2010).

These tests were run using SPSS, and all continuous variables fell within the threshold mentioned. This test cannot be run on categorical variables such as gender or tenure. Table 25 presents the skewness and kurtosis statistics for all survey items.

Table 25. Skewness and kurtosis of all survey items

	Skewness	**Kurtosis**
EWB_1	-0.772	0.341
EWB_2	-0.595	0.065
EWB_3	-0.673	0.123
EWB_4	-0.592	-0.072
WS_1	0.574	-0.452
WS_2	-0.018	-1.043
WS_3	0.413	-0.276
WS_4	-0.794	0.106
WS_5	0.550	-0.600
PSC_1	-0.720	0.061
PSC_2	-0.748	0.153
PSC_3	-0.282	-0.522
PSC_4	-0.284	-0.487
LMX_1	-0.557	-0.472
LMX_2	-0.421	-0.686
LMX_3	-0.540	-0.496
LMX_4	-0.792	0.126
LMX_5	-0.257	-0.650
LMX_6	-0.641	0.152
LMX_7	-0.409	0.160
EC_1	-0.555	0.454
EC_2	-0.623	0.278
EC_3	-0.010	-0.680
EC_4	0.157	-0.738
EC_5	-0.143	-0.894
EC_6	-0.025	-0.465

Note. N=237; 41 clusters.

4.3.2. Intraclass correlation

To answer the research questions and test the hypotheses, this research project draws upon a two-level structural equation model. The within level which is also known as the individual level has the employees. The between or cluster-level has the work teams which the employees are nested in. However, since data from nine different organisations was collected, some would suggest a three-level analysis. A three-level analysis is statistically impossible with the available statistical software packages and only nine organisations at the highest level of analysis. Additionally, some argue that to have sufficient reason to undertake a multilevel analysis, the intraclass correlation (ICC) at that particular level needs to be above .1 to reduce estimation problems (Lüdtke et al., 2008).

The ICC at the company between level was calculated for all the variables to verify its relevance and they all presented scores below .1. For employee wellbeing, the ICC at the company between level was of .004. For work stress, it was even lower, with a score of .003. For psychosocial safety climate, the ICC at the company between level has a score of .029. While for Leader-member exchange, the ICC was .088. Finally, emotional contagion presents a score of .081, still below the threshold of .1. The ICC at the team level was also calculated for all the variables and they all presented scores above .1. For example, the ICC at the team level for employee wellbeing was .373, while for work stress was .258. For psychosocial safety climate, it is .321; for Leader-member exchange, it is .335; and for emotional contagion, it is .181. A summary of these results can be found in the Table 26.

Table 26. Intraclass correlation at the company between level for the model variables

Variable	**ICC company level**	**ICC team level**
Employee wellbeing	.004	.373
Work stress	.004	.236
Psychosocial safety climate	.029	.321
Leader-member exchange	.088	.326
Emotional contagion	.081	.214

Note. N = 237 participants, 41 team-level clusters, 9 company-level clusters.

There is some controversy surrounding the threshold of the ICC. Some scholars have argued that in social sciences, it is sufficient to do a multilevel analysis with an ICC of .05 or even as low as .03 (Meuleman & Billiet, 2009). However, the literature does not present a case for such analysis and with only nine participating organisations, it was not possible to run a three-level analysis. Because of the low ICC at the company level, and because it aligned better with the research questions, this research project conducted a two-level analysis with employees at the individual or within level and work teams at the group or between level.

4.3.3. Multilevel exploratory factor analysis

An exploratory factor analysis (EFA) or theory building approach is a statistical technique that is used to analyse the correlation amongst all the measures under consideration. It is also used to explore the underlying theoretical structure of the construct (Finch, 2020). It is a statistical method that is not bound by theory. Instead, it is used to reveal correlations between items. According to Costello and Osborne (2005), EFA helps to uncover validity issues that would be ignored by a confirmatory factor analysis. Although this research project has used validated scales to measure the constructs included in the theorised model, multilevel EFA is used explore the collected data and determine if the multilevel theorised model makes sense from a statistical point of view (Dunn et al., 2015).

A multilevel EFA was conducted in Mplus v8.8 using the default rotation settings. The default rotation method in Mplus is GEOMIN, which has shown good performance in other studies (Preacher, 2017). The sample syntax of the multilevel EFA run with psychosocial safety climate and emotional contagion can be found on the Appendix 4. Due to the sample size and the Mplus specification, the multilevel EFA was run with two sets of variables at a time. Overall, ten multilevel EFAs were run on Mplus. As expected, in all tests, the artifactual second factor disappeared when the model was properly specified with two within factors and two between factors. There was only one item that did not load as expected. When conducting the multilevel EFA, it was found that an item (EC_2) of the emotional contagion scale did not load as expected. But, the item was retained, as this was only an exploratory analysis, and it would only have been removed if it also presented issues after the multilevel confirmatory factor analysis. The results of such are presented in the following section.

4.3.4. Multilevel confirmatory factor analysis

A confirmatory factor analysis (CFA) or theory confirming approach begins with a theory about what construct underlies a group of measure and then tests whether the correlations amongst these measures suggest that they are valid indicators of the underlying construct. In this project, the multilevel CFA was also conducted in Mplus v8.8. Due to the relatively small sample size, the decision was made to do an individual multilevel CFA and then, to compare the correlation amongst variables as per Zyphur's (2022) process. The following subsections present the observed intraclass correlation for each scale item, as well as the overall intraclass correlation for the scale. Then, the descriptive statistics are disclosed along with the model fit indicators that are prescribed by Hu and Bentler (1999). The factor loadings of each item are also included. Finally, the reliability of the scale is analysed using the McDonald's omega and each section finishes with the exploration of its discriminant validity and collinearity. This subsection finishes with an analysis of the correlation between variables.

4.3.4.1. Employee wellbeing

a. Observed intraclass correlation

The observed intraclass correlation of the employee wellbeing scale was 37.9%, indicating a moderate multilevel effect. The intraclass correlation of each item can be found in Table 27. All items present acceptable ICCs.

Table 27. Intraclass correlations of the employee wellbeing scale items

Item	ICC
EWB_1	.332
EWB_2	.262
EWB_3	.367
EWB_4	.347

Note. N=237; 41 clusters.

b. Model fit

The threshold criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit of the latent variable for employee wellbeing. This study reports on four different model fit indices for the latent variables. First, comparative fit index (CFI) and Tucker Lewis index (TLI) scored 1, which is considered perfect fit. Mplus offers standardised root mean square residuals (SRMR) for both levels of analysis: between and within. The SRMR at the within level was .013, and at the between level was .017. Both levels offer a good model fit according to SRMR as it is considered good between 0 and .08. Finally, the root mean square error of approximation (RMSEA) scored 0, which is also considered perfect fit. Overall, it can be concluded that the latent variable for employee wellbeing offered a good fit as all goodness of fit indices scored within their perfect, good or acceptable thresholds.

c. Factor loadings

Table 28 presents the standardised within and between factor loadings of the employee wellbeing scale. EWB_1 has a within standardised factor loading of .741 and a between standardised factor of .802. EWB_2's standardised factor loadings are .742 and .986, respectively. EWB_3 within standardised factor loading is .853 and the between standardised factor loading is .963. Finally, EWB_4's standardised factor loadings are .836 and .979, respectively.

Table 28. Standardised within and between factor loadings of the employee wellbeing scale

Item	Within	Between
EWB_1	.741	.802
EWB_2	.742	.986
EWB_3	.853	.963

EWB_4	.836	.979

Note. N=237; 41 clusters.

d. Reliability

The multilevel reliability of the employee wellbeing scale has been measured using the McDonald's omega (ω) as described in the section 3.4.5.8. A copy of the Mplus code used to calculate the McDonald's omega can be found in Appendix 5.

At the between level (team level), the McDonald's omega for employee wellbeing equals 0.968 with a correlation of 0.984 between the items. At the within level (employee level), the omega for EWB equals 0.866 with a correlation of 0.931 between the items at the individual level. Following the threshold levels suggested by Kline (2013) and Dunn et al. (2014), as stated in section 3.4.5.8, this scale presents a good reliability. A summary of all the calculated parameters to measure the McDonald's omega can be found in Table 29.

Table 29. Parameters to measure the McDonald's omega for the employee wellbeing scale

	Between level	**Within level**
$\sum(\lambda_i)^2$	5.785	8.452
$\sum(\varepsilon_i)$	0.190	1.309
ω	0.968	0.866
$\sqrt{\omega}$	0.984	0.931

4.3.4.2. Work stress

a. Observed intraclass correlation

The observed intraclass correlation of work stress was 24.4%, indicating a moderate to low multilevel effect. The intraclass correlation of each item of the work stress scale can be found on Table 30. All items present acceptable ICCs.

Table 30. Intraclass correlations of the work stress scale items

Item	**ICC**
WS_1	.201
WS_2	.206
WS_3	.225
WS_4	.127
W_5	.226

Note. N=237; 41 clusters.

b. Model fit

The threshold criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit of the latent variable for work stress. This study reports on four different model fit indices for the latent variables. First, comparative fit index (CFI) and Tucker Lewis index (TLI) scored 1, which is considered perfect fit. Mplus offers standardised root mean square residuals (SRMR) for both levels of analysis: between and within. The SRMR at the within level was .000, and at the between level was .003. Both levels offer a good model fit according to SRMR as it is considered good between 0 and .08. Finally, the root mean square error of approximation (RMSEA) scored 0, which is also considered perfect fit. Overall, it can be concluded that the latent variable for work stress offered a good fit as all goodness of fit indices scored within their perfect, good or acceptable thresholds.

c. Factor loadings

Table 31 presents the standardised within and between factor loadings of the work stress scale. WS_1 has a within standardised factor loading of .790 and a between standardised factor of .975. WS_2's standardised factor loadings are .731 and .988, respectively. WS_3 within standardised factor loading is .757 and the between standardised factor loading is .821. WS_4 within standardised factor loading is .698 and the between standardised factor loading is .814. Finally, WS_5's standardised factor loadings are .796 and .871, respectively.

Table 31. Standardised within and between factor loadings of the work stress scale

Item	Within	Between
WS_1	.790	.975
WS_2	.731	.988
WS_3	.757	.821
WS_4	.698	.814
WS_5	.796	.871

Note. N=237; 41 clusters.

d. Reliability

The multilevel reliability of the employee wellbeing scale has been measured using the McDonald's omega (ω) as described in section 3.4.5.8.

At the between level (team level), the McDonald's omega for WS equals 0.908 with a correlation of 0.953 between the items. At the within level (employee level), the omega equals 0.853 with a correlation of 0.923 between the items at the individual level. Following the threshold levels suggested by Kline (2013) and Dunn et al. (2014), as stated in the section 3.4.5.8, this scale

presents a good reliability. A summary of all the calculated parameters to measure the McDonald's omega can be found in the Table 32.

Table 32. Parameters to measure the McDonald's omega for the work stress scale

	Between level	**Within level**
$\sum(\lambda_i)^2$	1.603	3.314
$\sum(\varepsilon_i)$	0.162	0.571
ω	0.908	0.853
$\sqrt{\omega}$	0.953	0.923

4.3.4.3. Psychosocial safety climate

a. Observed intraclass correlation

The observed intraclass correlation of the psychosocial safety climate 4-item scale was 35%, indicating a moderate multilevel effect. The intraclass correlation of each item of the scale can be found on Table 33. All items present acceptable ICCs.

Table 33. Intraclass correlations of the psychosocial safety climate scale items

Item	**ICC**
PSC_1	.280
PSC_2	.292
PSC_3	.263
PSC_4	.315

Note. N=237; 41 clusters.

b. Model fit

The threshold criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit of the latent variable for psychosocial safety climate. This study reports on four different model fit indices for the latent variables. First, comparative fit index (CFI) scored .995 and Tucker Lewis index (TLI) scored 1, which are considered good and perfect fit, respectively. Mplus offers standardised root mean square residuals (SRMR) for both levels of analysis: between and within. The SRMR at the within level was .011, and at the between level was .015. Both levels offer a good model fit according to SRMR as it is considered good between 0 and .08. Finally, the root mean square error of approximation (RMSEA) scored 0, which is also considered perfect fit. Overall, it can be concluded that the latent variable for psychosocial safety climate offered a good fit as all goodness of fit indices scored within their perfect, good or acceptable thresholds.

c. Factor loadings

Table 34 presents the standardised within and between factor loadings of the psychosocial safety climate scale. PSC_1 has a within standardised factor loading of .769 and a between standardised factor of .912. PSC_2's standardised factor loadings are .756 and .881, respectively. PSC_3 within standardised factor loading is .765 and the between standardised factor loading is .901. Finally, PSC_4's standardised factor loadings are .753 and .881, respectively.

Table 34. Standardised within and between factor loadings of the psychosocial safety climate scale

Item	Within	Between
PSC_1	.769	.912
PSC_2	.756	.881
PSC_3	.765	.901
PSC_4	.753	.881

Note. N=237; 41 clusters.

d. Reliability

The multilevel reliability of the employee wellbeing scale has been measured using the McDonald's omega (ω) as described in section 3.4.5.8.

At the between level (team level), the McDonald's omega for PSC equals 0.978 with a correlation of 0.989 between the items. At the within level (employee level), the omega equals 0.861 with a correlation of 0.928 between the items at the individual level. Following the threshold levels suggested by Kline (2013) and Dunn et al. (2014), as stated in the section 3.4.5.8, this scale presents a good reliability. A summary of all the calculated parameters to measure the McDonald's omega can be found in the Table 35.

Table 35. Parameters to measure the McDonald's omega for the psychosocial safety climate scale

	Between level	Within level
$\sum(\lambda_i)^2$	4.629	7.685
$\sum(\varepsilon_i)$	0.106	1.245
ω	0.978	0.861
$\sqrt{\omega}$	0.989	0.928

4.3.4.4. Leader-member exchange

a. Observed intraclass correlation

The observed intraclass correlation of EWB was 44%, indicating a moderate multilevel effect. The intraclass correlation of each one of the seven items of the construct can be found in Table 36. All items present acceptable ICCs.

Table 36. Intraclass correlations of the employee wellbeing scale items

Item	ICC
LMX_1	.335
LMX_2	.315
LMX_3	.267
LMX_4	.434
LMX_5	.333
LMX_6	.393
LMX_7	.275

Note. N=237; 41 clusters.

b. Model fit

The threshold criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit of the latent variable for Leader-member exchange. This study reports on four different model fit indices for the latent variables. First, comparative fit index (CFI) scored .978 and Tucker Lewis index (TLI) scored .964, which are considered good above .95. Mplus offers standardised root mean square residuals (SRMR) for both levels of analysis: between and within. The SRMR at the within level was .036, and at the between level was .047. Both levels offer a good model fit according to SRMR as it is considered good between 0 and .08. Finally, the root mean square error of approximation (RMSEA) scored .056, which is considered acceptable below .08. Overall, it can be concluded that the latent variable for Leader-member exchange offered a good fit as all goodness of fit indices scored within their good or acceptable thresholds.

c. Factor loadings

Table 37 presents the standardised within and between factor loadings of the Leader-member exchange scale. LMX_1 has a within standardised factor loading of .793 and a between standardised factor of .970. LMX_2's standardised factor loadings are .748 and .963, respectively. LMX_3 within standardised factor loading is .801 and the between standardised factor loading is .968. LMX_4 within standardised factor loading is .701 and the between standardised factor loading is .984. LMX_5's standardised factor loadings are .795 and .820, respectively. LMX_6

within standardised factor loading is .790 and the between standardised factor loading is .989. Finally, LMX_7's standardised factor loadings are .730 and .774, respectively.

Table 37. Standardised within and between factor loadings of the Leader-member exchange scale

Item	Within	Between
LMX_1	.793	.970
LMX_2	.748	.963
LMX_3	.801	.968
LMX_4	.701	.984
LMX_5	.795	.820
LMX_6	.790	.989
LMX_7	.730	.885

Note. N=237; 41 clusters.

d. Reliability

The multilevel reliability of the employee wellbeing scale has been measured using the McDonald's omega (ω) as described in the section 3.4.5.8.

At the between level (team level), the McDonald's omega for LMX equals 0.984 with a correlation of 0.992 between the items. At the within level (employee level), the omega equals 0.869 with a correlation of 0.932 between the items at the individual level. Following the threshold levels suggested by Kline (2013) and Dunn et al. (2014), as stated in section 3.4.5.8, this scale presents a good reliability. A summary of all the calculated parameters to measure the McDonald's omega can be found in Table 38.

Table 38. Parameters to measure the McDonald's omega for the Leader-member exchange scale

	Between level	Within level
$\sum(\lambda_i)^2$	14.185	16.070
$\sum(\varepsilon_i)$	0.234	2.413
ω	0.984	0.869
$\sqrt{\omega}$	0.992	0.932

4.3.4.5. Emotional contagion

a. Observed intraclass correlation

The observed intraclass correlation of the emotional contagion scale was 37.9%, indicating a moderate multilevel effect. The intraclass correlation of each item can be found on Table 39. The only item that presents some initial problems is EC_2, as highlighted in the multilevel EFA.

Table 39. Intraclass correlations of the emotional contagion scale items

Item	ICC
EC_1	.134
EC_2	.056
EC_3	.269
EC_4	.284
EC_5	.239
EC_6	.307

Note. N=237; 41 clusters.

b. Model fit

Following Wieland et al.'s (2017) recommendations for scale purification, the item EC_2 was removed from the scale to enhance model fit. After rechecking the item ("At work, if colleagues appear to be worried about something, I generally remain calm"), it appeared that it was the only item that was reversely worded and not in accordance with the other items of the scale. Therefore, it appeared appropriate to remove the item from the scale.

The threshold criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit of the latent variable for the purified emotional contagion. This study reports on four different model fit indices for the latent variables. First, both comparative fit index (CFI) and Tucker Lewis index (TLI) scored 1, which is considered perfect fit. Mplus offers standardised root mean square residuals (SRMR) for both levels of analysis: between and within. The SRMR at the within level was .000, which is also considered perfect fit. At the between level, SRMR was .001, which is considered good between 0 and .08. Finally, the root mean square error of approximation (RMSEA) scored .000, which is also considered perfect fit. Overall, it can be concluded that the latent variable for the purified emotional contagion offered a good fit as all goodness of fit indices scored within their perfect, good or acceptable thresholds.

c. Factor loadings

Table 40 presents the standardised within and between factor loadings of the purified emotional contagion scale. EC_1 has a within standardised factor loading of .736 and a between standardised factor of .827. EC_3's standardised factor loadings are .738 and .888, respectively. EC_4 within standardised factor loading is .768 and the between standardised factor loading is .939. EC_5 within standardised factor loading is .767 and the between standardised factor loading is .965. Finally, EC_6's standardised factor loadings are .606 and .918, respectively.

Table 40.Standardised within and between factor loadings of the purified emotional contagion scale

Item	Within	Between
EC_1	.736	.827
EC_3	.738	.888
EC_4	.768	.939
EC_5	.767	.965
EC_6	.606	.918

Note. N=237; 41 clusters.

d. Reliability

The multilevel reliability of the employee wellbeing scale was measured using the McDonald's omega (ω) as described in section 3.4.5.8.

At the between level (team level), the McDonald's omega for EC equals 0.918 with a correlation of 0.958 between the items. At the within level (employee level), the omega equals 0.800 with a correlation of 0.894 between the items at the individual level. Following the threshold levels suggested by Kline (2013) and Dunn et al. (2014), as stated in section 3.4.5.8, this scale presents a good reliability. A summary of all the calculated parameters to measure the McDonald's omega can be found in Table 41.

Table 41. Parameters to measure the McDonald's omega for the emotional contagion scale

	Between level	Within level
$\sum(\lambda_i)^2$	2.061	4.344
$\sum(\varepsilon_i)$	0.184	1.087
ω	0.918	0.800
$\sqrt{\omega}$	0.958	0.894

4.3.4.6. Discriminant validity and correlations

Discriminant validity is checked to ensure that each item measures only one construct (Simonoff et al., 2013). Different measures measuring different constructs cannot be strongly correlated. If they are, constructs may not be discriminating between each other, which can cause problems with the results of the model. According to Simonoff et al. (2013), correlation levels between variables above .7 present several complications. The study used the method developed by Gorsuch (1983) to assess the discriminant validity. To test for discriminant validity, Gorsuch (1983) suggests that the model fit of the freely estimated multilevel CFA against a model where all correlations are constrained to 1. If the model fit of the constraint model is significantly worse

than the freely estimated model, it can be concluded that the discriminant validation of the tested variables is supported. Since the dataset is small, this test for discriminant validity could not be run.

Due to the between-level sample size, this test was done with two variables at a time and in all cases the constrained model was statistically inferior. Therefore, it can be concluded that the discriminant validity of the tested variables was supported. Moreover, the correlation analysis yielded no significant associations between the tested variables at the between level or at the within level. At the within level, all correlations between items were below .4, whereas at the between group level, PSC_2 and LMX_6 had a correlation of .819, and EWB_2 and PSC_3 had a correlation of .819. While these two are high correlation levels, van de Schoot and Hox (2013) would argue that multilevel structural equation modelling could still be performed.

4.4. Results of the multilevel structural model

The multilevel structural equation model was built in Mplus adapting the complex syntax and methodology developed by Preacher et al. (2010; 2016) to test multilevel mediation and moderation using multilevel structural equation modelling. This study used multilevel double mediation and moderation with random slopes. The script can be found in Appendix 6. The output requested Tech8 to request the optimization history in estimating the model. The model ran with 10,000 iterations and the potential scale reduction converged to 1.003. The estimator used was Bayes and the justification for this can be found in section 4.4.1. This chapter also presents the model fit results for the multilevel structural model and the results of the hypothesis testing.

4.4.1. Bayes estimator

With any statistical analysis, it is necessary to use an estimator. An estimator is a statistic technique to estimate some characteristic about the population using a sample. In other words, an estimator is the technique employed to create estimates. As with theoretical frameworks, there are many estimators that can be utilised to estimate a fact about the population. This research project used the Bayes estimator. In particular, the Mplus default programming for the Bayes estimator was used. Although the Bayesian approach is not the default estimator used in the majority of structural equation modelling analyses, some argue that it is the best estimator (Lee, 2007).

Bayes estimator presents some important benefits in contrast to other estimators such as the default maximum likelihood estimator (Muthén, 2010). First, frequentists use estimators like the maximum likelihood estimator and view parameters as constants. While on the other hand, Bayesian analysts see parameters as variables and in order to compose posterior distributions for parameter estimates, they combine prior distributions for parameters with the data likelihood.

Second, maximum likelihood estimator assumes that the distribution of the parameter estimates is non-parametric based on asymptotic large-sample theory. As such, to use maximum likelihood, a large sample size in needed. As this is a two-level model with a small number of clusters, this assumption is false. In contrast, Bayes estimator does not depend on the large-sample theory and does not assume that the parameter estimates distribution is normal. This would allow parameter estimates distributions that are strongly skewed or that present tailedness different from the normal distribution. Third, Muthén (2010) suggests that Bayes is an optimal estimator in instances where maximum likelihood estimator would not be able to compute the parameter estimates. Fourth, Bayes estimator provides a natural approach that cannot be established using other estimators with models with a very large number of parameters.

In summary, the Bayes estimator is the best estimator to test this project's hypothesis. Bayes makes fewer assumptions with small samples and therefore, it reduces the potential error. Moreover, as this project uses multilevel moderation with random slopes, it is important to consider how Mplus treats them. Hoffman and Walters (2022) provide an in-depth analysis on current best practices for the specification of multilevel models. They suggest that when modelling multilevel moderation with random slopes, it is recommended to use Bayes as the model estimator. The primary reason is that with the maximum likelihood estimator, Mplus cannot take the latent mean centring and the within and between decomposition. This problem means that the between regression coefficient cannot predict the between effect and instead, it becomes a contextual effect. For this, Mplus software is ideally suited for this project because, with its implementation of the Bayes estimator, it gets the multilevel decomposition that is appropriate to use with random slopes (Asparouhov & Muthén, 2019; Hoffman, 2019; Hoffman & Walters, 2022). González-Romá & Hernández (2017) point out the significance of the Bayes estimator with small number of clusters. In their review of multilevel SEM, they state that with a small number of teams, Bayes estimator helps predict better estimates with random slopes. Finally, this project takes the Asparouhov and Muthén (2010) approach on Bayes estimator for multilevel moderation models with random slopes and two-level random interactions. Asparouhov and Muthén (2010) provide a technical discussion on how Bayes estimator has been implemented in Mplus, the statistical software package used to test the hypotheses.

4.4.2. Model fit

With Bayes estimator, it is not possible to obtain the traditional model fit indices using the methodology developed by Anderson and Gerbing (1988). However, as reporting on traditional fit indices is best practice when doing structural equation modelling, some Bayes statisticians suggest that it is recommended to remove the random slope and use maximum likelihood estimator to report on model fit (Levy, 2011). Moreover, it could be argued that when adding the

random slope, the model fit can only improve the model, which justifies removing it to report on traditional model fit indices. Therefore, the reported fit indices are for the model without random slopes.

The cut-off criteria for model fit published by Hu and Bentler (1999) were considered when analysing the goodness of fit. This study reports on five different model fit indices: Chi-square over degrees of freedom (CMIN/DF), comparative fit index (CFI), Tucker Lewis Index (TLI), standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA).

CMIN/DF had a score of 2.88 which is considered a good model fit as it is below 3. The CFI score was .994, which is considered good fit as it is above .95. The Tucker Lewis Index (TLI) score was .961 and it is considered good above .95. Mplus offers SRMR for both levels of analysis: between and within. The SRMR at the within level was .03, and at the between level was .005. Both levels offer a good model fit according to SRMR as it is considered good between 0 and .08. Finally, the RMSEA test offers a result of .06, which is considered acceptable below .08.

Overall, it can be concluded that the multilevel structural model offered a good fit as all goodness of fit indices scored within their good or acceptable thresholds.

4.4.3. Results of hypothesis testing

The results of the multilevel structural equation modelling indicated that when the variables were modelled as per the hypothesised model, significant relationships were apparent. These relationships are presented in this section which has been structured by hypothesis. As the estimator used was Bayes, there is no p-value as there would be with other estimators. Instead, Mplus gives the 95% credible interval for the estimate. If this interval does not contain the null value, the estimate is found to be significant. Both the non-standardised and standardised model results are presented in Table 42 and Table 43, respectively. The table contains the within and between-level estimates along with the 95% credible interval of the estimate.

Table 42. Between-level, and within-level effects between employee wellbeing, work stress, Leader-member exchange, psychosocial safety climate, and emotional contagion

		95% Credible Interval		
	Estimate	Lower 2.5%	Upper 2.5%	Significance
Between-level (work team) effects				
EC → Slope	-0.748	-1.476	-0.011	*
WS → EWB	-0.367	-0.557	-0.161	*

PSC → EWB	0.809	0.189	1.938	*
LMX → EWB	-0.109	-0.984	0.402	
PSC → WS	-1.557	-2.740	-0.667	*
LMX → WS	0.838	0.072	1.992	*
PSC → LMX	0.871	0.654	1.105	*
Within-level (employee) effects				
WS → EWB	-	-	-	
PSC → EWB	0.124	0.069	0.181	*
LMX → EWB	0.058	-0.011	0.125	
PSC → WS	0.007	-0.058	0.073	
LMX → WS	-0.076	-0.143	-0.009	*
PSC → LMX	0.514	0.397	0.629	*

Note. N=237; 41 clusters. EC = emotional contagion. EWB = employee wellbeing. WS = work stress. PSC = psychosocial safety climate. LMX = Leader-member exchange.

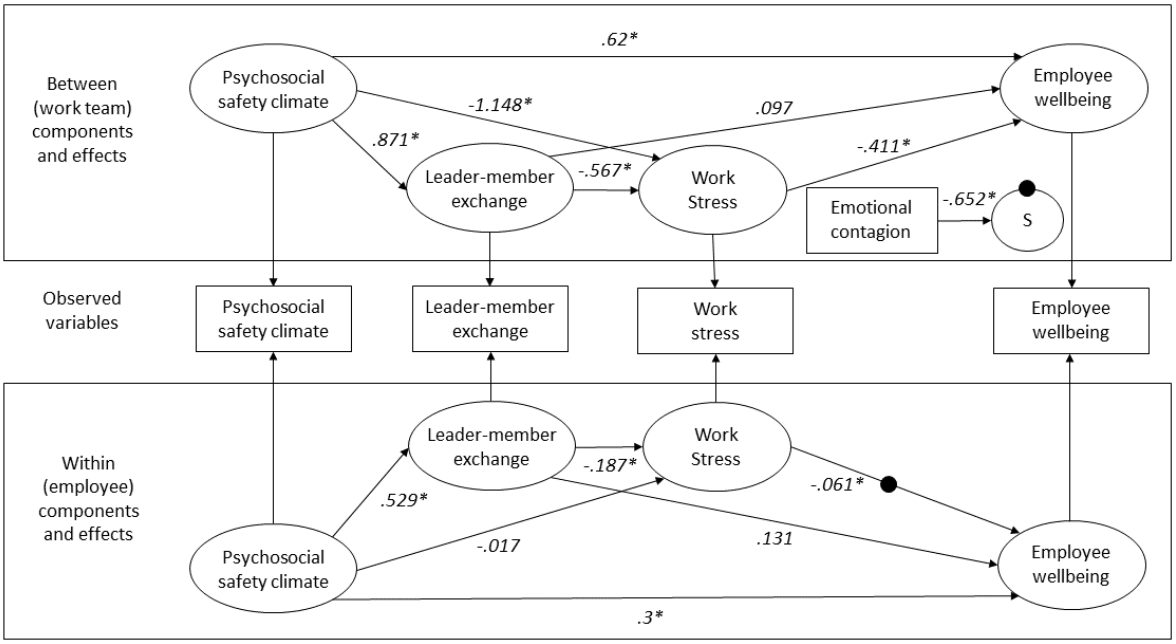
Table 43. Between-level, and within-level standardised effects between employee wellbeing, work stress, Leader-member exchange, psychosocial safety climate, and emotional contagion

		95% Credible Interval		
	Estimate	Lower 2.5%	Upper 2.5%	Significance
Between-level (work team) effects				
EC → Slope	-0.652	-0.958	-0.019	*
WS → EWB	-0.411	-0.625	-0.176	*
PSC → EWB	0.620	0.403	0.817	*
LMX → EWB	0.097	-0.884	0.356	
PSC → WS	-1.148	-1.852	-0.508	*
LMX → WS	0.567	0.079	1.326	*
PSC → LMX	0.871	0.721	0.946	*
Within-level (employee) effects				
WS → EWB	-0.061	-.200	-.060	*
PSC → EWB	0.300	0.175	0.419	*
LMX → EWB	0.131	-0.018	0.285	
PSC → WS	-0.017	-0.141	0.177	
LMX → WS	-0.187	-0.343	-0.025	*
PSC → LMX	0.529	0.411	0.622	*

Note. N=237; 41 clusters. EC = emotional contagion. EWB = employee wellbeing. WS = work stress. PSC = psychosocial safety climate. LMX = Leader-member exchange.

The hypothesised model with the standardised results can be found on Figure 10.

Figure 10. Hypothesised model with standardised parameter estimates



Note. N=237; 41 clusters. Multilevel research model with the between and within effects as well as the observed variables. The model contains the standardised estimators. * Significant path at the 0.05 level.

4.4.3.1. Hypothesis 1. Emotional contagion moderates the relationship between work stress and employee wellbeing

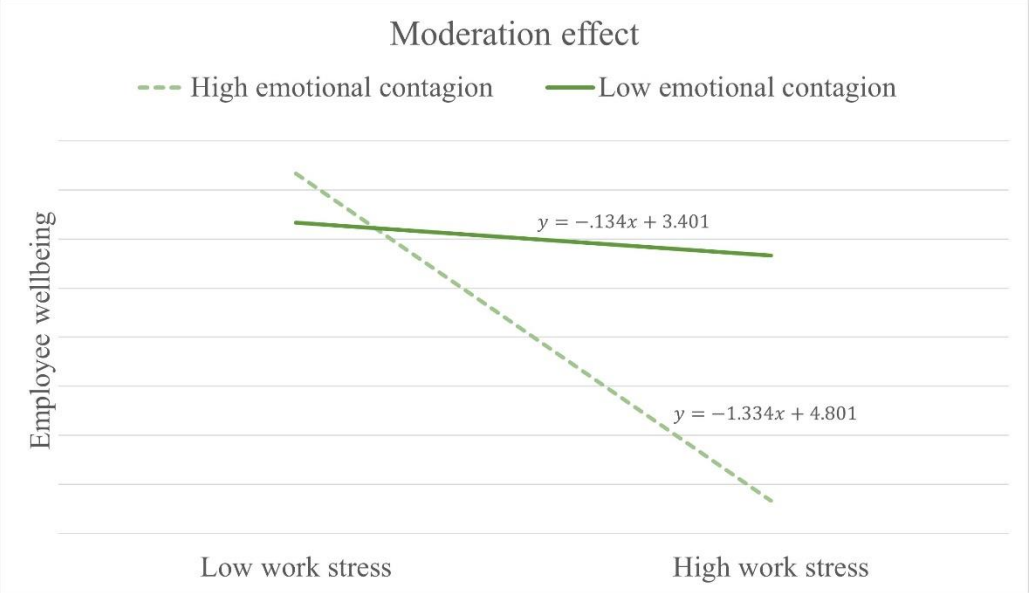
The first hypothesis of this research project aimed at testing whether there is a cross-level moderation of emotional contagion on the relationship between work stress and employee wellbeing. To test this moderation effect, we utilised random slopes in the regression between work stress and employee wellbeing. Emotional contagion is understood as a team-level variable, and it is hypothesised that this has an impact on the employee-level individual slopes.

At the between level, a significant effect was found linking emotional contagion with the slope of the relationship between work stress and employee wellbeing. The between-level non-standardised estimate of the direct effect of emotional contagion on the within-level slope between work stress and employee wellbeing was -.748, with a credible interval range from -1.476 and -.011. As the credible interval does not contain 0, the estimate is found to be significant. The

between-level standardised estimate was -.652, with a credible interval range from -.958 and -.019. This parameter estimate is also significant.

The significant estimate for the relationship between emotional contagion and the slope of the relationship between work stress and employee wellbeing, accepts the hypothesis that emotional contagion moderates the relationship between work stress and employee wellbeing. The moderation effect was plotted (see Figure 11). The results indicate than when emotional contagion is high, the negative relationship between work stress and employee wellbeing is strengthened. In effect, this means that employees who work in teams with higher emotional contagion, and low levels of work stress are likely to experience higher levels of employee wellbeing. In contrast, employees who work in teams with higher levels of emotional contagion, and high levels of work stress, are likely to experience very low levels of employee wellbeing.

Figure 11. Moderation effect



Note. Emotional contagion strengthens the negative relationship between work stress and employee wellbeing.

4.4.3.2. Hypothesis 2. Work stress is negatively associated with employee wellbeing

The second hypothesis of this study proposes that there is a negative association between work stress and employee wellbeing. This hypothesis affects both the within level and the between level and suggests that when employees experience high levels of work stress, are likely to experience lower levels of employee wellbeing.

This hypothesis was accepted at both levels of analysis. At the between level, a significant effect was found with a non-standardised estimate of the negative relationship between work stress and employee wellbeing of -.367, with a credible interval range from -.557 and -.161. As the credible

interval does not contain 0, the estimate is found to be significant. The between-level standardised estimate was -.411, with a credible interval range from -.625 and -.176, which is also significant with a 95% confidence level. At the within level, the non-standardised significant effect cannot be reported since that relationship was randomised to report on the moderation effect. However, the within-level standardised estimates can be reported. The standardised parameter estimate was -.061, with a credible interval range from -.2 and -.06, which is also significant with a 95% confidence level.

4.4.3.3. Hypothesis 3. Psychosocial safety climate is positively associated with employee wellbeing

The third hypothesis of this study proposes that there is a positive association between psychosocial safety climate and employee wellbeing. This hypothesis affects both the within level and the between level and assumes that when employees perceive that their organisation and mangers prioritise their wellbeing above business outputs, employees will have a higher level of wellbeing.

This hypothesis was accepted at both levels of analysis. At the between level, a significant effect was found with a non-standardised estimate of the positive relationship between psychosocial safety climate and employee wellbeing of .809, with a credible interval range from .189 and 1.938. As the credible interval does not contain 0, the estimate is found to be significant. The between-level standardised estimate was .62, with a credible interval range from .403 and .817, which is also significant with a 95% confidence level. At the within level, a significant effect was found with a non-standardised estimate of the positive relationship between psychosocial safety climate and employee wellbeing of .124, with a credible interval range from .069 and .181. As the credible interval does not contain 0, the estimate is found to be significant. The within-level standardised estimate was .3, with a credible interval range from .175 and .419, which is also significant with a 95% confidence level.

4.4.3.4. Hypothesis 4. Psychosocial safety climate is negatively associated with work stress

The fourth hypothesis of this study proposes that there is a negative association between psychosocial safety climate and work stress. The hypothesis related to both the within level and the between level and assumes that when employees perceive that their organisation and mangers prioritise their wellbeing above business outputs, employees will have lower levels of work stress.

Hypothesis 4 was partially accepted. At the between level, a significant effect was found with a non-standardised estimate of the negative relationship between psychosocial safety climate work stress of -1.557, with a credible interval range from -2.74 and -.667. As the credible interval does

not contain 0, the estimate is found to be significant. The between-level standardised estimate was -1.148, with a credible interval range from -1.852 and -.508, which is also significant with a 95% confidence level. At the within level, this relationship was found non-significant at a 95% credible interval.

4.4.3.5. Hypothesis 5. Psychosocial safety climate is positively associated with Leader-member exchange

The fifth hypothesis of this study proposes that there is a positive association between psychosocial safety climate and Leader-member exchange. This hypothesis affects both the within level and the between level and assumes that when employees perceive that their organisation and mangers prioritise their wellbeing above business outputs, employees are more likely to perceive that their line manager is supporting them.

This hypothesis was accepted at both levels of analysis. At the between level, a significant effect was found with a non-standardised estimate of the positive relationship between psychosocial safety climate and Leader-member exchange of .871, with a credible interval range from .654 and 1.105. As the credible interval does not contain 0, the estimate is found to be significant. The between-level standardised estimate was .871, with a credible interval range from .721 and .946, which is also significant with a 95% confidence level. At the within level, a significant effect was found with a non-standardised estimate of the positive relationship between psychosocial safety climate and Leader-member exchange of .514, with a credible interval range from .397 and .629. As the credible interval does not contain 0, the estimate is found to be significant. The within-level standardised estimate was .529, with a credible interval range from .411 and .622, which is also significant with a 95% confidence level.

4.4.3.6. Hypothesis 6. Leader-member exchange is positively associated with employee wellbeing

The sixth hypothesis of this study proposes that there is a positive association between Leader-member exchange and employee wellbeing. The hypothesis related to both the within level and the between level and suggests that when employees perceive that their manager support them, employees are likely to experience higher levels of employee wellbeing

Hypothesis 6 was not accepted at any of the two levels with a 95% confidence level.

4.4.3.7. Hypothesis 7. Leader-member exchange is negatively associated with work stress

The seventh hypothesis of this study proposes that there is a negative association between Leader-member exchange and work stress. This hypothesis affects both the within level and the between

level and assumes that when employees perceive their managers supports them, employees experience lower levels of work stress.

This hypothesis was accepted at both levels of analysis. At the between level, a significant effect was found with a non-standardised estimate of the negative relationship between Leader-member exchange and work stress of -.838, with a credible interval range from -1.992 and -.072. As the credible interval does not contain 0, the estimate is found to be significant. The between-level standardised estimate was -.567, with a credible interval range from -1.326 and -.079, which is also significant with a 95% confidence level. At the within level, a significant effect was found with a non-standardised estimate of the negative relationship between Leader-member exchange and work stress of -.076, with a credible interval range from -.143 and -.009. As the credible interval does not contain 0, the estimate is found to be significant. The within-level standardised estimate was -.187, with a credible interval range from -.343 and -.025, which is also significant with a 95% confidence level.

4.4.3.8. Hypothesis 8. Negative mediation between psychosocial safety climate and work stress through Leader-member exchange

The model also reflected a full mediation in the relationship between Leader-member exchange and employee wellbeing through work stress at the single level of analysis (within). This means that at the individual level, employees' perceptions of how their organisation prioritises their wellbeing is fully mediated through their perception on how their manager supports them.

4.4.3.9. Hypothesis 9. Positive mediation between Leader-member exchange and employee wellbeing through work stress

The model also reflected a full mediation in the relationship between Leader-member exchange and employee wellbeing through work stress at both levels of analysis (between and within). Specifically, the results indicated a full mediation effect, indicating that the impact of employees' perceptions of how their manager supports their wellbeing on their wellbeing is entirely mediated through their experience of work stress. This mediation effect was observed at both the between-level (team-level) and within-level (individual-level) analyses. To provide further clarification, this means that when employees perceive a high level of support from their manager in terms of their wellbeing (as captured by the Leader-member exchange measure), it leads to lower levels of work stress. In turn, reduced work stress is associated with higher levels of employee wellbeing. In other words, employees' perceptions of managerial support play a significant role in shaping their experience of work stress. When employees feel supported by their manager, it contributes to a lower level of stress in their work environment. This reduced work stress, in turn, has a positive impact on their overall wellbeing.

4.4.3.10. Hypothesis 10. Positive mediation between managerial priority and employee wellbeing through Leader-member exchange and work stress

The model also reflected a double mediation in the relationship between psychosocial safety climate and employee wellbeing. First, the relationship between psychosocial safety climate and work stress is fully mediated by Leader-member exchange at the within level. This means that employees' perceptions of how their organisation prioritises their wellbeing is fully mediated through employees' perceptions of managerial support. At the between level, this is only partially mediated since the direct relationship between psychosocial safety climate and work stress is significant. Second, the relationship between Leader-member exchange and employee wellbeing is fully mediated by work stress at both levels of analysis (between and within). This means that employees' perceptions of managerial support are fully mediated through their self-reported work stress level.

4.5. Conclusion of the chapter

This chapter has presented the results of the statistical analysis of the collected data. The chapter commenced with a presentation of several descriptive statistics to understand the sample dataset. The demographic statistics are minimum, maximum, mean and standard deviation for the variables included in the hypothesised model: employee wellbeing, work stress, psychosocial safety climate, Leader-member exchange, and emotional contagion. Then, the chapter presented the sample demographics including gender, tenure, and year of birth. The section following presented the results of the measurement model, including multivariate normality test, intraclass correlations, results from the multilevel exploratory factor analysis, and multilevel confirmatory factor analysis. The multilevel confirmatory factor analysis included the observed intraclass correlation, the latent variable model fit, its factor loadings, and the McDonald's omega reliability index for each variable along with the discriminant validity and correlation analysis amongst all variables.

The chapter concluded with the results of the multilevel structural equation model. This section began with a presentation of the estimator used: Bayes, and then the model fit of the structural model was presented. This chapter finished with the results of the hypothesis testing and a detailed presentation of each significant relationship.

Chapter 5. General Discussion and Implications

Chapter 4 has presented the results from the multilevel quantitative analysis in response to the research questions: *RQ1. Does emotional contagion among team members influence the levels of individual work stress and employee wellbeing?* and *RQ2. To what extend do organisational resources impact the level of employee wellbeing?*

The results from the statistical analysis evidence the impact of organisational resources and work teams on employee wellbeing. This chapter reflects on the results presented in Chapter 4 and discusses how these results contribute to the current body of scholarly knowledge, policy and to business practice. The first section presents an overview of the research questions and the hypotheses that were used to answer the research questions. The second section explores the theoretical implications of the results to understand how employees influence each other's wellbeing when working together and how the organisational resources impact the level of employee wellbeing. The third and final section develops the practical and policy implications of this thesis and how it contributes to practice.

5.1. Overview of the research questions and hypotheses

The main aim of this research project is to identify the influence of co-workers, and organisational resources, on employee wellbeing. This goal has the objective of making wellbeing more accessible for those organisations that try to support the wellbeing of their employees. Additionally, at least in Australia, the need for organisations to support employee wellbeing and reduce psychosocial risk is laid out in the framework published by Safe Work Australia in July 2022. The Work Health and Safety Act makes it mandatory for organisations to eliminate or, when this is not possible, minimise all hazards that pose a psychosocial risk (Safe Work Australia, 2022). Therefore, it is necessary to know how organisations can effectively address employee wellbeing and eliminate or reduce psychosocial hazards.

Until now, wellbeing, and more specifically, employee wellbeing, have been mainly studied from the individual perspective and considering employees as isolated units within a team. This individual analysis of employee wellbeing only offers a partial perspective and neglects the team influence - as if those teams had no impact on the individual. However, the academic literature provides extensive evidence that as humans are social animals, the relationships and interactions between humans have an impact on the way we operate, think, behave, and express (Robinson et al., 2019). By analysing employee wellbeing through an individual lens, organisations and policy makers have been implementing interventions targeting the individual employee. As such, to date there has been insufficient analysis of the impact of those employees who are not captured by those individual interventions on other employees. There is no research on the emotional

contagion among team members on employee wellbeing and work stress and the impact of a distressed employee on others. Those distressed employees could be reducing, or even eliminating the positive impact of those individual interventions and dragging their colleagues' wellbeing down. Moreover, many organisations do not even know how to provide resources that support employees' wellbeing or if they do, they do not feel that these resources fully support wellbeing (Volini et al., 2021). Within this context, this research project has the main aim of contributing to the current knowledge on employee wellbeing and studying a collective conceptualisation of employee wellbeing and its "contagiousness" between team members.

To operationalise the aim of this thesis, two research questions have been posited (see Table 44). The first research question sought to analyse the emotional contagion among team members on work stress and employee wellbeing. The second research question studies the association between organisational resources and their impact on employee wellbeing. In combination, the two research questions build on previous research to offer an individual, collective, and organisational conceptualisation of employee wellbeing. The following section provides a discussion of each of these questions and their corresponding hypothesis.

Table 44. Research questions

RQ1	Does emotional contagion among team members influence the levels of individual work stress and employee wellbeing?
RQ2	To what extent do organisational resources impact the level of employee wellbeing?

5.1.1. Does emotional contagion among team members influence the levels of individual work stress and employee wellbeing?

The main aim of this study was to make employee wellbeing more accessible for policy makers and business practitioners. Since most research on employee wellbeing has examined it from the individual perspective, this research project sought to break with tradition to conceptualise a collective influence on employee wellbeing. Using a multilevel statistical lens, the first research question sought to understand the emotional contagion among co-workers on employee wellbeing and work stress. This influence was studied using two important relationships. First, the relationship between work stress and employee wellbeing was studied. The impact of emotional contagion on this relationship was then examined. This research question had two corresponding hypotheses, one for each relationship that was under examination. These hypotheses and the discussion of the findings associated with them are explored in the below two sections.

5.1.1.1. Work stress and employee wellbeing

The literature suggested a negative relationship between work stress and employee wellbeing at both levels of analysis. At the individual level, employees experiencing high levels of work stress

are likely to experience lower levels of employee wellbeing. In contrast, employees whose levels of work stress are under control are likely to experience higher levels of wellbeing. This relationship is also assumed at the team level, where teams with high levels of stress are likely to experience lower levels of collective wellbeing, and vice versa. As such, interventions aiming to reduce work stress would also support employee wellbeing. Csikszentmihalyi (1991) suggests that work stress is caused when employees do not have the necessary skills for the work challenge that they are facing. This dichotomy could be addressed from two different fronts. On one hand, interventions that look at improving the skill competencies of employees would be likely to reduce the levels of work stress and, therefore, improve their wellbeing levels (Brassington & Lomas, 2021). On the other hand, from a task management perspective, tasks assigned to an employee, or a team should fit their skill level so that they can achieve the flow level described by Csikszentmihalyi (1991). A flow level with a healthy and appropriate level of work stress is achieved when the challenge level is high, but it also matches the high level of skills for that employee or team.

The negative relationship between work stress and employee wellbeing was expressed in Hypothesis 2, where it was hypothesised that work stress is negatively associated with employee wellbeing. The results from the statistical analysis confirmed the expected negative association between work stress and employee wellbeing at both levels of analysis (see Chapter 4, section 4.4.3.2). As such, it is argued that employees who are exposed to high levels of work stress are likely to experience lower levels of wellbeing. In particular, organisations should focus on reducing or eliminating the levels of structural work stress that are not due to a particular moment in time or a specific project but intrinsic to an individual and their role. Those structural levels of work stress, in the medium term, have a very negative impact on employee wellbeing (Davies, 2021). Therefore, because organisations have a responsibility to reduce (to the maximum possible extent) the impact of psychosocial hazards, it is the organisation's responsibility to ensure that there are strategies in place to minimise the levels of structural work stress. Managing psychosocial hazards, according to Parker and Jorritsma (2021), can be achieved by fitting the tasks with the appropriate skill level of the worker and designing work to be mentally healthy. When this alignment exists, employees will be able to draw from organisational resources to protect their level of work stress and consequently, their wellbeing.

At the team level, there are particular positions or business areas that are more likely to experience higher levels of work stress (Davies, 2021). Such teams are likely to experience lower levels of wellbeing and therefore require higher levels of support from organisations and policy makers. This thesis found that the negative relationship between work stress and employee wellbeing is also significant at the team level. This has implications for practitioners – in particular, for

professional services, as those teams could be exposed to higher psychosocial risks and, therefore, require prompt action to reduce their levels of stress and mitigate the impact of stress on wellbeing.

According to conservation of resources theory, employees will strive to maintain, protect or acquire resources that will reduce their stress levels (Halbesleben et al., 2014). In particular, when an employee faces a resource draining event where they are likely to experience high levels of work stress, they are likely to use their current resources to protect themselves and experience lower levels of work stress. A resource draining event could be any circumstance where they are required to work above their skill level or their abilities. As such, minimising resource draining events is essential to guarantee healthy skill levels at both the individual and the team level.

5.1.1.2. The team influence on employee wellbeing

The statistical analysis found a negative relationship between work stress and employee wellbeing at both levels of analysis. Moreover, it is also theorised that the work team (between level) has an influence in such a relationship at the employee level (within level). In other words, emotional contagion among co-workers has an influence on the individual relationship between work stress and employee wellbeing. This influence is covered in Hypothesis 1, where it is hypothesised that emotional contagion moderates the relationship between work stress and employee wellbeing. This hypothesis aims to address the first research question of this thesis by testing if the emotional contagion between co-workers influences the individual relationship between work stress and employee wellbeing. For example, employees within teams with high levels of emotional contagion and with high levels of work stress are likely to have even lower levels of individual wellbeing due to the contagious effect of those co-workers who are also experiencing lower levels of work stress. In contrast, employees nested within teams with high levels of emotional contagion and with low levels of work stress may experience even higher levels of individual wellbeing as they would 'catch' the wellbeing of those around them.

The results from the statistical analysis confirmed the expected cross-level moderation of collective emotional contagion in the individual relationship between work stress and employee wellbeing (see Chapter 4, section 4.4.3.1). The significance of this moderation influence of the team's emotions on the relationship between work stress and employee wellbeing offers important theoretical and practical implications. Specifically, these results highlight the importance of the emotional contagion among team members on wellbeing and the influence that co-workers have on work stress and employee wellbeing. While the previous section mentioned the need for workplace interventions that aim to reduce the levels of work stress to improve wellbeing levels,

it is essential to consider the team influence on such relationship to ensure that those interventions achieve their full potential.

According to social exchange theory, there is a reciprocal dynamic between two or more employees (Eisenberger et al., 1987). When one employee gives, their co-workers would normally receive and give back. As such, from a positive action, the receiver is likely to also respond in a positive way, which could trigger a loop of positive actions. On the other hand, if there is a negative action or the receiver perceives it as negative, colleagues are likely to also respond in a negative way which could become a loop of negative actions within a work team. This dynamic explains the influence of the team on workplace behaviours. However, it misses an important factor. A practical contribution of this thesis is that employees not only respond to others' actions and behaviours, according to emotional contagion theory, employees with high levels of emotional contagion tend to 'catch' colleagues' emotions and synchronise with those. As such, ensuring that there is a positive environment within a work team is essential for its success.

Person-team fit theory outlines key factors that are necessary for team selection to maximise team performance (Ellis et al., 2022). Intrinsically, human resources and hiring managers have considered the team culture and ensure that new members "fit" or "add" to the team. The concept of cultural add and fit aligns with the new trends in diversity and inclusion (Liera, 2020) and tries to promote the idea of supporting the team or at least not dragging it down. If employees are likely to synchronise emotions and moods with those around them, it is important to guarantee a good environment for each individual member of a team. The need to find employees that add to the culture of the team has important limitations. With the current skill shortage in the Australian labour market, it appears that a number of organisations across all industries and sectors are even offering positions on the first interview if the interviewee meets the legal requirements for the position (Crouch, 2022). Having compliance requirements does not guarantee that the candidate will add to the team, which makes it even more urgent to address the current skill shortage and "the Great Resignation" that is currently affecting the Australian economy (Serenko, 2022). However, the findings from this research go beyond this theory. The results highlight that the solution does not uniquely fit within the hiring process, but instead it is a day-to-day maintenance of team wellbeing.

The results point out that it is the responsibility of managers to strive for consensus in team stress and wellbeing – to date, frameworks (such as employee engagement, and Leader-member exchange) take it for granted that there will be an "in-group" and "out-group" (Mejia et al., 2021). This study questions this assumption. With a significant cross-level moderation of emotional

contagion on the individual relationship between work stress and employee wellbeing, if there is an "out-group", the whole team's wellbeing is at risk. This also questions the way modern management searches for the most amount of happiness for the most amount of people. A group of employees that work together form a team, and if that team is well-maintained, it is stronger than the sum of individuals in the team. But, if something, i.e., stress, perforates the alloy, the degradation will spread across the team, reducing their individual and collective levels of wellbeing.

The results from this thesis prompt actions for Governments, and regulators and a stakeholder with a vested interest in safe and productive workplaces. First, it would be necessary to work closely with organisations and sectors affected by the skill shortage to understand their talent needs. Second, there is a role for regulators in supporting public, private and non-for-profit sector organisations to build work teams which are more conductive to collective wellbeing. The Government should apply the talent needs to educational institutions at secondary, vocational, and higher education levels so that the curriculum meets the talent requirements. Regulators can also generate resources, guides and promote further research to support organisations in implementing the day-to-day maintenance of team wellbeing.

5.1.2. To what extent do organisational resources impact the level of employee wellbeing?

The second research question sought to understand how organisational resources impact the employee wellbeing level. This influence was studied using two organisational resources. First, managerial priority was captured by psychosocial safety climate. Second, managerial support was conceptualised using Leader-member exchange. These two organisational resources are theorised as influencers on employee wellbeing through five different hypotheses. The first hypothesis (*H3*) tested the relationship between managerial priority and employee wellbeing. The second hypothesis (*H4*) tested the relationship between managerial priority and work stress. This relationship also proposed a mediated influence of managerial priority on employee wellbeing through work stress. The third hypothesis (*H5*) tested the relationship between managerial priority and support. The fourth hypothesis (*H6*) tested the relationship between leader-member exchange and employee wellbeing, which also implies a mediated relationship between managerial priority and employee wellbeing though leader-member exchange . The fifth and last hypothesis (*H7*) tested the relationship between leader-member exchange and work stress. This relationship also proposed a mediated relationship between leader-member exchange and employee wellbeing through work stress. Overall, there was a double or chain mediation between managerial priority and employee wellbeing though leader-member exchange and work stress. These hypotheses and the discussion of their findings are explored below.

5.1.2.1. Managerial priority and employee wellbeing

In addressing Hypothesis 3, the present data indicated a positive relationship between psychosocial safety climate and employee wellbeing at both levels of analysis. Managerial priority was conceptualised by psychosocial safety climate, and it serves as a high-level organisational resource. At the employee level, when employees perceive that their managers prioritise their wellbeing, they are likely to experience higher levels of employee wellbeing. This positive impact is due to managerial priority being an essential resource for employees, according to conservation of resources theory. In contrast, employees who perceive lower levels of managerial priority within their organisation are likely to experience low levels of employee wellbeing. At the team level, when co-workers perceive that their organisation is prioritising the wellbeing of the team above productivity and other outputs, there are likely to also experience higher levels of collective wellbeing. Similarly, when the team perceive low levels of psychosocial safety climate, they are also likely to experience lower levels of wellbeing. The results from the statistical analysis confirmed the expected positive relationship between psychosocial safety climate and employee wellbeing at both levels of analysis (see Chapter 4, section 4.4.3.3).

This finding is particularly important as it suggests a new approach that organisations can adopt to manage wellbeing – through the provision of the resources of managerial priority and support. According to conservation of resources theory, managerial priority is an organisational resource used by employees to reduce their levels of work stress and boost their wellbeing (Dollard & Bakker, 2010). Managerial priority and support can minimise certain psychosocial hazards and act as resources to balance the demands created by others.

5.1.2.2. Managerial priority and work stress

Hypothesis 4 tested the negative relationship between psychosocial safety climate and work stress at both levels of analysis. As psychosocial safety climate serves as a high-level organisational resource, it is expected that at the individual level, employees perceiving that their organisation prioritises their wellbeing, are likely to experience lower levels of work stress. In contrast, employees who perceive low levels of managerial priority would be likely to experience higher levels of work stress. However, this hypothesised relationship was not supported (see Chapter 4, section, 4.4.3.4). According to conservation of resources theory, employees are likely to do anything to maintain, preserve or acquire resources to protect their levels of wellbeing (Hobfoll, 2001). However, Salanova et al. (2010) argue that high-level organisational resources require some means of transport from the organisation to the employee. Without such transport, those organisational resources may not be able to reach their final destination, the employee.

On the other hand, it is also theorised that at the team level, work teams who perceive that their organisation is prioritising their wellbeing above productivity are likely to experience lower levels of work stress. In contrast, if the team perceives low levels of prioritisation by their organisation, the team members are likely to experience higher levels of work stress. The analysis supported this negative relationship at the team level (see Chapter 4, section, 4.4.3.4). According to social exchange theory, teams with high levels of psychosocial safety climate are likely to respond in a more positive way towards their organisation. As such, several research projects have linked higher levels of psychosocial safety climate with the optimal level of work stress to perform at the highest level (Farr-Wharton et al., 2022a). In contrast, teams who perceive that their organisation is not prioritising them above profitability are likely to experience higher levels of work stress, which leads to lower levels of employee wellbeing as seen in previous sections.

While, according to social exchange theory, both individuals and teams with high levels of psychosocial safety climate are likely to respond in a more positive way towards their organisation, this statement was only supported at the team level in this thesis. Clearly, this is a story about the key role of the direct manager's support as the vector through with managerial priority or psychosocial safety climate acts. This has been demonstrated through the Leader-member exchange mediation between psychosocial safety climate and work stress through Leader-member exchange and which is elaborated later in this chapter.

5.1.2.3. Managerial priority and managerial support

Conservation of resources theory suggests that managers are the social mechanism by which employees receive organisational resources as support (Salanova et al., 2010). This key role of managers as the vector between organisational resources and the employee is a key contribution of this thesis. As such, it is theorised that there is a positive relationship between psychosocial safety climate and Leader-member exchange at both levels of analysis (Hypothesis 5). The results from the statistical analysis confirmed the expected relationship between Leader-member exchange and work stress at both levels of analysis (see Chapter 4, section 4.4.3.5).

At the individual level, employees who perceive that their manager is supporting their wellbeing, are likely to also perceive that their organisation is prioritising their health by using the manager as a driver of organisational resources. Some even argue that regardless of how much the organisation is prioritising the wellbeing of employees, unless their manager supports their mental and physical health, they are not likely to perceive that their organisation is prioritising them (Salanova et al., 2010). At the team level, teams are also likely to perceive that their organisation is prioritising their wellbeing if their manager is supporting their collective wellbeing. The findings on both levels of analysis are a key contribution of this thesis as, no matter how much

effort the human resources department or senior management put in developing policies and practices to support their employees' wellbeing, employees will not feel supported unless they have a supporting line manager.

5.1.2.4. Managerial support and employee wellbeing

This project tested the relationship between leader-member exchange and employee wellbeing. It was theorised that there is a positive relationship between the perception of employees who believe that their manager supports their role and their wellbeing, and employee wellbeing. Additionally, such a relationship was also theorised at the team level, where teams that perceive high levels of leader-member exchange would be likely to experience higher levels of employee wellbeing. However, in addressing Hypothesis 6, the present data indicates no significant relationship between leader-member exchange and employee wellbeing at any of the two levels of analysis (see section 4.4.3.6). Instead, the influence of leader-member exchange on employee wellbeing operates indirectly through work stress as presented in the following section.

According to conservation of resources theory, employees and work teams are likely to do anything to protect their resources to protect themselves from high stress levels (Xerri et al., 2022). And as showed earlier, work stress is negatively related to employee wellbeing. Therefore, as previously mentioned, this thesis argues that leader-member exchange acts as an organisational agent to take organisational resources to employees and work teams and reduce their stress levels. Employees and teams get support from their line manager to draw upon organisational resources and reduce their levels of work stress, which ultimately, positively impacts their level of employee wellbeing. Therefore, the role of line managers in supporting the wellbeing of their employees must be a key consideration for organisations in eliminating psychosocial hazards and having a mentally healthy job.

5.1.2.5. Managerial support and work stress

In addressing Hypothesis 7, the present data indicates a negative relationship between Leader-member exchange and work stress at both levels of analysis. Managerial support is conceptualised by Leader-member exchange, and it serves as a vector of organisational resources from the organisation to the employee. At the employee level, when employees perceive that their manager supports their wellbeing, they are likely to experience lower levels of work stress. This impact is due to leader-member exchange being an essential resource for employees to draw upon organisational resources, according to conservation of resources theory. In contrast, employees who perceive lower levels of leader-member exchange are likely to experience high levels of work stress. At the team level, when co-workers perceive that their manager is supporting the wellbeing of the team, they are likely to also experience lower levels of collective stress. Similarly, when the team perceive low levels of leader-member exchange, they are not able to use

organisational resources and are likely to experience higher levels of stress. The results from the statistical analysis confirmed the expected relationship between Leader-member exchange and work stress at both levels of analysis (see Chapter 4, section 4.4.3.7).

5.2. Contributions and implications for theory and research

This thesis moves knowledge in the field forward by providing a more nuanced perspective on how organisational resources and co-workers' emotional contagion contribute to employee wellbeing. Within this advancement of the scholarly knowledge, this thesis provides three key points. (1) By theoretically blending social exchange, emotional contagion, and conservation of resources theories, this study offers a unique approach to understanding the dynamics behind employee wellbeing. The complexity of this research project has presented the need to use theoretical blending (Cornelissen & Durand, 2012) between three theoretical lenses to understand the dynamics behind employee wellbeing. To this end, this multilevel statistical analysis has been able to account for the team influence on employee wellbeing and the team dynamics of wellbeing at work. This implies that the paradigm typically associated with the influencers of employee wellbeing and its individual responsibility may have been challenged and associated with the environment in which the employee works. Instead of being an individual responsibility, this study demonstrates that employee wellbeing is also a collective obligation as the team has an important influence on the individual levels of wellbeing. In this way, supportive organisational resources and a positive team are important contributors to wellbeing at work.

(2) This research also challenges the paradigm typically associated with the influencers of employee wellbeing and its individual responsibility, demonstrating that employee wellbeing is also a collective obligation as the team has an important influence on the individual levels of wellbeing. This implies that supportive organisational resources and a positive team are important contributors to wellbeing at work. (3) Furthermore, this study provides a methodologically sound process for demonstrating how a team that cares and supports, with high contagion, is a team with higher employee wellbeing and lower work stress. This dynamic challenges the relationship between employee wellbeing and organisational resources, as they are presented within Hobfoll's conservation of resources theory. From a theoretical standpoint, your results support the notion that team emotional contagion moderates the individual-level relationship between work stress and employee wellbeing. Therefore, this research project contributes to the field of employee wellbeing by highlighting the importance of accounting for the team impact on organisational practices and expanding emotional contagion theory.

The findings contribute to improving and extending the adopted theories in several ways. Firstly, the study blends social exchange, emotional contagion, and conservation of resources theories to

provide a more nuanced perspective on how organisational resources and co-workers contribute to employee wellbeing. This theoretical blending enables an understanding of how team contagion for wellbeing and the key role of the line manager as the transporter of organisational resources can impact employee wellbeing. Secondly, the study challenges the paradigm typically associated with the influencers of employee wellbeing and its individual responsibility, demonstrating that employee wellbeing is also a collective obligation as the team has an important influence on the individual levels of wellbeing. This implies that supportive organisational resources and a positive team are important contributors to wellbeing at work. Thirdly, the study provides a methodologically sound process for demonstrating how a team that cares and supports, with high contagion, is a team with higher employee wellbeing and lower work stress. Fourthly, the study supports the notion that team emotional contagion moderates the individual-level relationship between work stress and employee wellbeing. Finally, the study highlights the importance of accounting for the team impact on organisational practices and expanding emotional contagion theory.

5.3. Contributions and implications for practice and policy

This thesis contains several findings around the key role of the line manager as the vector of organisational resources and the collective contagion of wellbeing. As such, several contributions and implications for professional service practitioners and policy-makers are presented in this section. First, this thesis highlights the important role of line managers as transporters of organisational resources from the organisation to the employees. These line managers are also key in maintaining the day-to-day wellbeing of the team and not assuming that there will always be an "in-group" and an "out-group". Second, this thesis suggests that both practitioners and policy makers should add to their individual interventions collective or team-designed projects to further support their employees' levels of wellbeing. This section further develops these two contributions and points out their implications from a practical standpoint.

This thesis highlights the important role organisational support as a resource for employees to influence their level of wellbeing. The significant team influence on strengthening the relationship between work stress and employee wellbeing poses important implications for both business practitioners and policy makers. Organisations need to ensure that their practices to reduce work stress and support employee wellbeing are not only based on the unique individual, but also on the team, while maintaining wellbeing consensus. It has been found that for those teams with high levels of emotional contagion, the influence of the individual work stress is very high. Therefore, distressed employees could reduce the impact of any wellbeing interventions, causing important losses for the organisation. These implications are not only financial losses, but they also carry a huge social cost and decline in mental health. As seen, the economic cost of poor mental health

in Australia has been estimated at between AUD$200 and AUD$220 billion a year according to the Australian Productivity Commission (King, 2021). This thesis suggests that both professional service practitioners and policy makers should move from individual interventions to collective or team-designed projects to further support their employees' levels of wellbeing.

A lot can be said about primary interventions for wellbeing versus other non-primary interventions. Primary interventions include those that address the psychosocial hazard directly, usually at the organisational level using psychosocial safety climate and appropriate work design. On the other hand, secondary or tertiary interventions act after the employee has been exposed to a psychosocial risk and aim at reducing their level of stress and negative impact on their wellbeing. This thesis points to the fact that the collective wellbeing has a role and may indeed be very important. Future research is necessary to establish how important it is and how beneficial could be for organisations to implement collective interventions to support the team's wellbeing.

These organisational resources require the support from line managers who act as transporters of organisational resources from the organisation to the employees. The role of line managers is particularly important in the role of organisations in eliminating psychosocial hazards at work. Yet, most line managers are not human resources professionals and may have not received the appropriate training or may not have the necessary soft skills to be a supportive manager. Without an appropriate level of managerial support, employees may not perceive that their organisation is prioritising them, which could have important negative implications for the wellbeing of the employees. Following the narrative about the crucial role of managers, this thesis suggests that there is a need to change the management style from a majority to a general consensus. By doing so, managers could be able to avoid the negative impact of the "out-group" in terms of stress or wellbeing, on the team's wellbeing. For all these reasons, this study highlights the importance of ensuring that managers are also trained and evaluated on non-productivity skills. Additionally, organisations should pay particular attention to those teams that are exposed to inevitable psychosocial hazards as those require prompt action to reduce their levels of stress, because, as this thesis has pointed out, team emotional contagion impacts the relationship between work stress and employee wellbeing. Finally, team interventions may be a mechanism that allow organisations to support the wellbeing of their employees and account for the contagious effect of employee wellbeing.

For policy makers, these findings also have significant implications. First, workplace regulations that seek to protect the wellbeing of employees should not solely focus on the individual but instead on the team. Most legislation recommends or even requires primary interventions as a priority to eliminate psychosocial hazards before they impact on work stress. However,

organisations find it easier and more cost-effective to apply individual and non-primary approaches. Yet, this study shows that organisational resources are fundamental and that the interventions should take place at the team level due to the contagious nature of employee wellbeing. The team has important implications for employee wellbeing and as such, regulations on team interventions should be a mechanism to support it even further. Second, the need to hire employees who add to the work team poses an important pressure due to the current skill shortage and the "War for Talent" (Goldstone et al., 2021; Serenko, 2022). As such, policy makers should prioritise policies that regulate the current skill shortage not only in the short term but also in the medium and long term. For instance, policies should focus on moving to a model of training leadership which maintains consensus wellbeing, and not majority wellbeing. This thesis can inform wellbeing interventions as well as wellbeing interventions research by incorporating a more nuanced conceptualisation of collective wellbeing and its antecedents.

Finally, all these implications pose important consequences for the future of work. While this may be stepping a little beyond the scope of this project, it is important to note that our work environments keep evolving and changing constantly. As such, continuous research is needed to understand the impact of new psychosocial hazards (e.g., the relationship between employees and artificial intelligence, remote teams, and so on) and how organisations can address them.

5.4. Conclusion of the chapter

This chapter has discussed the findings of the study along with its theoretical, methodological, practical and policy contributions and implications. To sum up, this thesis has made four important contributions. First, there is the theoretical blending of social exchange theory, emotional contagion theory and conservation of resources theory which has enabled the understanding of how organisational resources and co-workers contribute to employee wellbeing. Second, this thesis has used a new methodological approach to study the antecedents of employee wellbeing and its collectiveness by using multilevel structural equation modelling. Third, this thesis highlights the important role of line managers as transporters of organisational resources from the organisation to the employees. The role of line managers is particularly important considering that in general, they are not human resources professionals, and they get promoted on their technical skills but once promoted, they are required to have strong interpersonal skills to be able to support the wellbeing of their employees. And fourth, this thesis suggests that both practitioners and policy makers should add to the individual interventions, collective or team-designed projects to further support their employees' levels of wellbeing. In doing so, organisations should leave the idea that there will always be an "out-group" and focus on moving to a model of training leadership which maintains consensus wellbeing, and not majority wellbeing

Chapter 6. Conclusions

This thesis has studied the role of organisational resources and teams on employee wellbeing through a multilevel lens. The aim of this final chapter is to conclude the research project by offering a brief recapitulation the main points of this study. First, it offers a summary of the main findings, and it continues with the limitations of this research project and recommendations for future research.

6.1. Important findings

This thesis contributes to the body of scholarly knowledge associated with employee wellbeing. Specifically, this research project studied the influence of organisational resources and co-workers on employee wellbeing using a multilevel lens. The study aimed to develop a more nuanced understanding concerning the collective drivers of wellbeing. This thesis sought to move the current discourse beyond its almost exclusive focus on individual mental disposition. Moreover, the thesis also aimed to assist in developing workplace interventions that focus on the maintenance and acquisition of better levels of collective wellbeing. An improved understanding of employee wellbeing and its antecedents contributes to the development of robust workplace interventions that aim at reducing the current rise of work-related stress, anxiety, and depression.

This project has been carried out during the COVID-19 pandemic, which has caused many workplace changes and an increased level of work stress and psychological distress. All data was collected in the professional services industry as employees within this industry kept working in teams during the Australian lockdowns. Moreover, the current "War for Talent", with the increasing competition between recruiters and the prominent skill shortage that the Australian economy is currently facing, adds extra pressures for managers and organisations (Goldstone et al., 2021; Serenko, 2022). Given these pressures, some organisations try to create a competitive advantage and be at the forefront of the employee value proposition. This thesis has proposed several practical contributions that can assist supporting employee wellbeing and reducing work stress. On the theoretical side, the project offers a nuanced theoretical insight on employee wellbeing research. The study uses the theoretical blending of three different and complementary theories (social exchange theory, emotional contagion theory, and conservation of resources theory) to integrate plausible reasoning and provide new insights while avoiding silos of knowledge (Cornelissen & Durand, 2012). Moreover, it proposes an advanced quantitative methodological approach to employee wellbeing research by using multilevel structural equaition modelling.

Psychosocial safety climate as managerial priority and Leader-member exchange as managerial support served as organisational resources to understand how these contribute to reducing work stress and to improving employees' wellbeing. Moreover, the vital importance of the line managers has been proven. The literature argued that there is an important disconnection between the technical and interpersonal skills of line managers. These managers serve as organisational agents who transport the organisation's resources from the organisation to the employees. Therefore, when the link between the line manager and the employee and/or the team is broken, those organisational resources do not fully arrive at their destination (the employee), and do not serve their purpose (to reduce the employee level of stress and support their level of wellbeing). Since line managers do not necessarily have human resources training (as documented in the literature), it is important for the human resources department and the organisation to ensure that they have the necessary skills and resources to serve as organisational agents.

Emotional contagion between co-workers served as a moderator in the negative relationship between work stress and employee wellbeing. The significant moderation of emotional contagion between co-workers on the relationship between work stress and employee wellbeing served to answer the first research question. This result asserts the contagious effect between co-workers and the collective conceptualisation of employee wellbeing. This implies that there is an urgent need for practices and policies that incorporate the idea of collective wellbeing instead of exclusively considering it an individual and non-transferable concept. The Australian regulation makes it mandatory for organisations to eliminate or, if not possible, reduce workplace hazards that present a psychosocial risk for employees and other stakeholders. If organisations and policy makers wish to comply with this regulation, it is necessary to design interventions and roles/positions that consider wellbeing as a collective variable which is impacted by the team in which the employee works.

Finally, this thesis also highlights the need to shift the current management design from a majority approach to a consensus approach. Until now, managers are trained to maintain a majority approach in aspects such as employee wellbeing. If the majority presents good or acceptable levels of wellbeing, it is a sufficient effort from a managerial perspective. However, due to the significant contagious effect that this thesis highlights, these managerial practices should shift to a consensus approach where nobody is left as an "out-group". Current practices take for granted that there will always be an "out-group" and an "in-group". Yet, as this thesis has found, there is a significant moderation impact of team emotional contagion on the individual level relationship between work stress and employee wellbeing. If managers assume and accepts that there will always be an "out-group", those individuals within that group could drag their co-workers' levels

of wellbeing. Further research is necessary to understand the degree of the impact of these employees with negative work experiences on their co-workers.

6.2. Limitations and recommendations for future research

As in all research projects, this study is not free from limitations. An important limitation of this study is the number of teams that participated in the project. As discussed on Chapter 3, while there are no concerns with the validity of the results of this study, it is worth noting that future research could benefit from using a larger sample. In particular, a larger sample of work teams would have been useful for the two-level data analysis given the current limitations of statistical packages that test for multilevel analysis using cross-level moderation and use Bayes estimator. For this particular project, getting a larger sample was impossible due to several factors. First, the engagement strategy and data collection processes were done with no funds. Second, the data had to be collected during several COVID-19 outbreaks that impacted Australian society, causing many participants to drop out of the study. As the concepts measured rely on employee perceptions and these are subject to the current circumstances, the employees' mood at the time of their participation could have an impact on their responses. COVID-19 has had an important impact on mental health, and therefore, collecting data at another time would be interesting and serve as a comparison with this study. Third, there was a limited and specific amount of time to collect data. To combat this limitation, subsequent studies could look at introducing several waves of data collection. A time-lagged approach would further validate the results of this thesis and offer a more dynamic and representative picture of the influence of teams and organisational resources on employee wellbeing.

Further research should explore other potential levels of analysis such as organisational influence, a comparison between different industries or even a cross-cultural analysis. Moreover, further research should drill down deeper, possibly through qualitative approaches, to understand more about how wellbeing contagion works within work teams. Other studies could look at how line managers serve as transporters of organisational resources to enhance the impacts of psychosocial safety climate in employee and collective wellbeing. Future quantitative research might usefully look at some of those things, and perhaps expand the nested multilevel analysis to include organisational, team and individual level in the same model. And last but not least, other studies should look at new psychosocial hazards that appear as the work environment evolves over time. These include but are not limited to the impact of virtual or flexible work groups or the relationship between intelligent robots and employees.

Multilevel statistical analysis is an emerging analysis paradigm, and it presents important limitations in the transferability while building highly complex models which offer nuance.

Kozlowski and Klein (2000) considered multilevel organisational theory within the pragmatic research philosophy. They argue that while it is a quantitative research methodology, it was born within a reality that is in constant debate and interpreted as new situations arise, which falls under the pragmatism ontology. Moreover, according to Kozlowski and Klein (2000), when building a multilevel model from a literature review, values play a large role as researcher adopts both objective and subjective points of view. Further research is needed in this area to keep developing the multilevel organisational theory and multilevel statistical methods.

6.3. Conclusion of the chapter

This study has investigated the impact of organisational resources and co-workers on employee wellbeing through a multilevel lens. The findings conclude that team emotional contagion influences the individual level relationship between work stress and employee wellbeing. In this sense, managers play a crucial role in incorporating consensus wellbeing practices and avoid assuming that there will always be an "in-group" and an "out-group". In addition, organisational resources play a key role for employees to draw upon to support their levels of wellbeing. These organisational resources only get to the employees that they target though line managers. As such, the role of line managers is essential for organisations to support the wellbeing of their employees. This chapter has offered a review of the important findings of this thesis as well as the limitations and recommendations for further research.

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Appendices

Appendix 1. Survey

Team Influence on Employee Wellbeing
UTS Ethics Approval Number: ETH21-5814
As an employee working at ORGANISATION NAME, we warmly invite you to complete this survey. I am a PhD student at UTS and this survey is part of the data collection of my research, where I am studying the team enablers of employee wellbeing. The survey has been designed to capture data regarding your wellbeing at work. There are no right or wrong answers, please seek to be completely honest in your answers. It takes about 7 to 14 minutes to complete and all of your responses will be anonymous and treated confidentially. For more information about how your data will be used, please click here.

Do you consent to participate in this survey online?
- Yes, I consent to participate in this survey
- No, I do not consent to participate in this survey

While care has been taken to ensure the survey is as brief as possible and non-confrontational in style if at any stage the content makes you feel uncomfortable you may cease giving data. If this survey causes you distress and/or if you would like to speak to someone about how you feel, you may like to refer to free services such as Head to Health (headtohealth.gov.au), Beyond Blue (1300 22 4636 / beyondblue.org.au) or Lifeline (13 11 14 / lifeline.org.au).

What is your Employee Code?
This survey is trying to capture the team enablers of employee wellbeing. To be able to link your responses with your work team, you have been asked to supply the following 'code'. This code will be stripped out of your response after your work team has been linked, and the code will not be disclosed at any time to your organisation.
- First 3 letters of your Manager's first name
- First 3 letters of your Manager's last name

Psychosocial Safety Climate
This scale is designed to capture the shared perceptions regarding policies, practices and procedures for the protection of worker psychological health and safety.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Managers show support for stress prevention through involvement and commitment (PSC_1)					
Management clearly considers the psychological health of employees to be of great importance (PSC_2)					
There is good communication here about psychological safety issues which affect me (PSC_3)					
In my organisation, the prevention of stress involves all levels of the organisation (PSC_4)					

Supervisor Relationship
This questionnaire contains items that ask you to describe your relationship with your direct supervisor.
For each one of the items, please indicate the degree to which you think the item is true for you by clicking one of the responses that appear below the item.
LMX_1 Do you know where you stand with your direct supervisor and do you usually know how satisfied your direct supervisor is with what you do?
- Rarely
- Occasionally
- Sometimes
- Fairly often
- Very often

LMX_2 How well does your direct supervisor understand your job problems and needs?
- Not a bit
- A little
- A fair amount
- Quite a bit
- A great deal

LMX_3 How well does your direct supervisor recognise your potential?

- Not at all
- A little
- A fair amount
- Fairly often
- Very often

LMX_4 Regardless of how much formal authority your direct supervisor has built into his or her position, what are the chances that your direct supervisor would use his or her power to help you solve problems in your work?

- None
- Small
- Moderate
- High
- Very high

LMX_5 Again, regardless of the amount of formal authority your direct supervisor has, what are the chances that he or she would "bail you out" at his or her expense?

- None
- Small
- Moderate
- High
- Very high

LMX_6 I have enough confidence in my direct supervisor that I would defend and justify his or her decision if he or she were not present to do so.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

LMX_7 How would you characterize your working relationship with your direct supervisor?

- Extremely ineffective
- Worse than average
- Average
- Better than average
- Extremly effective

Emotional Contagion

This is a scale that measures a variety of feelings and behaviours in the workplace.
There are no right or wrong answers, please try to be completely honest in your answers.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
When there is excitement happening around me at work, I remain cool (EC_1)						
At work, if colleagues appear to be worried about something, I generally remain calm (EC_2)						
If colleagues around me feel depressed, I also tend to feel depressed (EC_3)						
If a colleague felt upset, I would also feel upset (EC_4)						
At work, I would become nervous if colleagues around me appear nervous (EC_5)						
The colleagues around me have a strong influence on my mood (EC_6)						

Employee Wellbeing
This construct is designed to capture the level of employee wellbeing.
There are no right or wrong answers, please try to be completely honest in your answers.

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Overall, I am reasonably happy with my work life (EWB_1)						
Most days I feel a sense of accomplishment in what I do at work (EWB_2)						
I feel content with my work (EWB_3)						
I get a sense of joy from my work (EWB_4n)						

Work Stress
This construct is designed to capture the level of work stress.
There are no right or wrong answers, please try to be completely honest in your answers.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
A lot of the time my job makes me very frustrated or angry (WS_1)					
I am usually under a lot of pressure when I am at work (WS_2)					
When I am at work I often feel tense or uptight (WS_3)					
I am usually calm and at ease when I'm at work (WS_4)					
There are a lot of aspects of my job that make me upset (WS_5)					

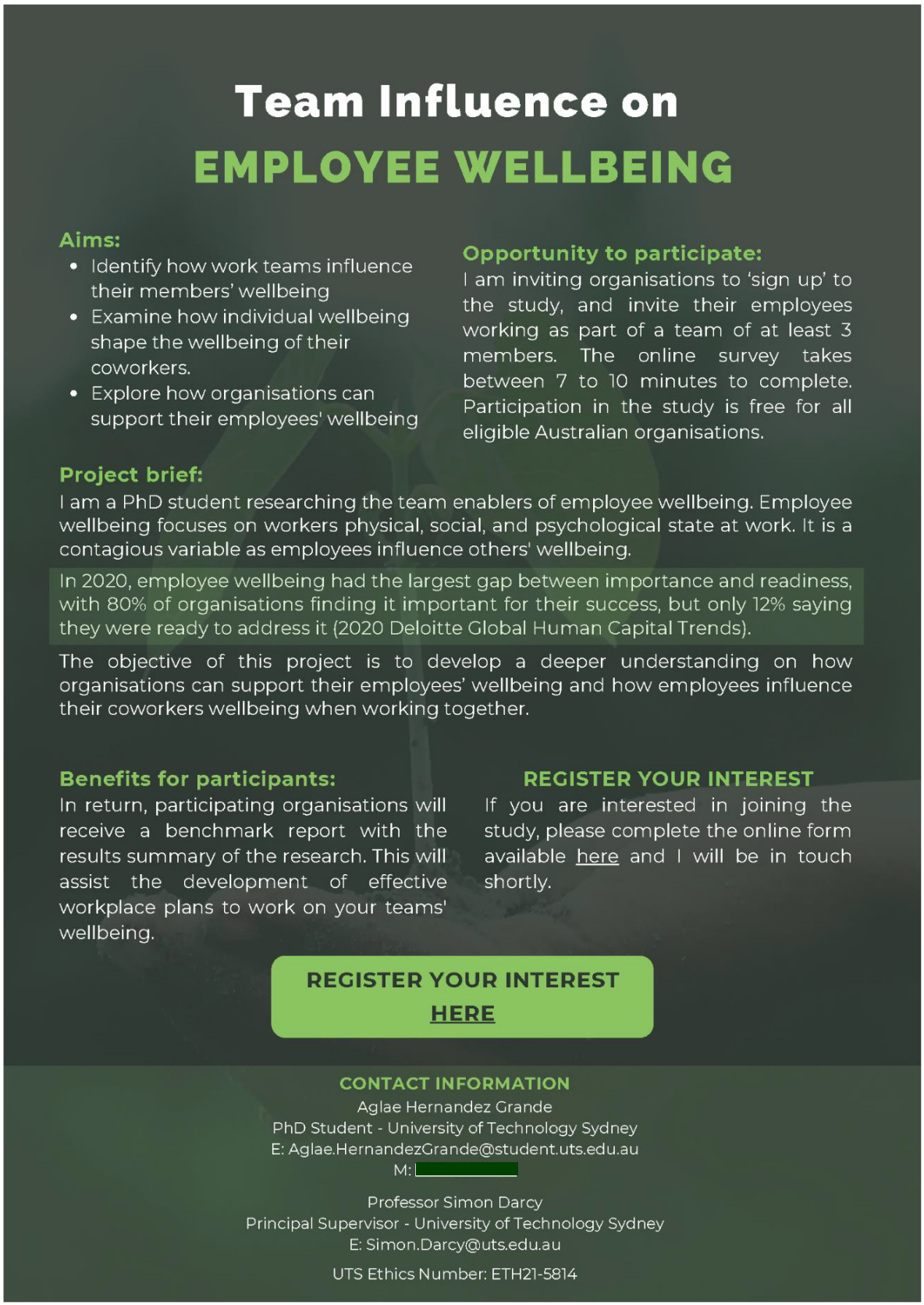
You're almost at the end. You've already completed 85% of the survey!

What is your gender?
- Female
- Male
- Intersex
- Transgender
- Prefer not to say
- Other

What is your year of birth?
▼ 21 (2008) ... 1900 (1900)

Approximately, how many years have you been working in this organisation?
- Less than 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- 11-15 years
- More than 15 years

Appendix 2. Recruitment flyer and video link



YouTube video link: https://www.youtube.com/watch?v=Xcm7gARRmF4

Appendix 3. Generic participant information sheet

This participant information sheet was adapted to each participant organisation.

UTS UNIVERSITY OF TECHNOLOGY SYDNEY

INFORMATION SHEET AND CONSENT FORM FOR ONLINE SURVEYS

UTS HREC ETH21-5814 – TEAM ANTECEDENTS OF EMPLOYEE WELLBEING

What is the research study about?
The purpose of this research is to establish a better understanding of employee wellbeing as well as a deeper awareness of its team enablers. With this research, I wish to help developing healthier and better workplaces, where employee wellbeing is a crucial aim of every organisation.

You have been invited to participate to this study as an employee of NAME OF THE ORGANISATION; however, individual participation is voluntary, and it will not have any impact on employment.

Who is conducting this research?
My name is Aglae Hernandez Grande, and I am a PhD student at UTS. My principal supervisor is Professor Simon Darcy, and he can be contacted via email at simon.darcy@uts.edu.au.

Do I have to take part in this research study?
Participation in this study is voluntary. It is completely up to you whether or not you decide to take part.
If you decide to participate, I will invite you to read this information carefully, and complete an online survey that will take approximately 7-14 minutes to complete. The survey uses a rating scale and will ask you questions about your relationship with your supervisor, how others' feelings and behaviours influence you, as well as questions on your own wellbeing, for example, '*Overall, I am reasonably happy with my work life*'.

In order for the study to be valid, all questions should be answered, however, you can change your mind at any time and stop completing the survey without consequences and your already-given responses will be deleted and not used in any analysis.

Are there any risks/inconvenience?
While care has been taken to ensure the survey is as brief as possible and non-confrontational in style, if at any stage the content makes you feel uncomfortable you may stop the survey. If answering or considering the survey questions causes you distress and/or if you would like to speak to someone about how you feel, you may like to refer to free services such as Head to Health (headtohealth.gov.au), Beyond Blue (1300 22 4636 / beyondblue.org.au) or Lifeline (13 11 14 / lifeline.org.au). You can also contact your employee assistance program (DETAILS HERE).

What will happen to information about me?
The survey is anonymous and confidential. It is collected by an external research team and all data will be stored in a secure location at UTS. We don't collect any identifiable data that it is not provided by you in the survey. By clicking the *Yes, I consent to participate in this survey*, you consent to the research team using the information you give for the research project. You will then be able to progress to the survey questions. At the beginning of the survey, you will be asked to confirm you have read and understood this information sheet. You will then be asked to provide a six-letter code, with the three first letters of your manager's first and last name. This code will be used to identify the team in which you belong so we can study the team's influence on employee wellbeing. To ensure your identity remains anonymous, the six-letter code will be stripped out of your response as soon as the team has been linked and stored on a secure storage within UTS. The code will never be shared with anyone outside of the research team. All this information will be treated confidentially and will not have any impact on employment. Your information will only be used for the purpose of this research project. Participating organisations may receive a benchmark report with the aggregated results of the study, but your individual response will not be disclosed at any stage to anyone, except as required by law.

What if I have concerns or a complaint?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact us on:

- Aglae Hernandez Grande (PhD Student): aglae.hernandezgrande@student.uts.edu.au
- Professor Simon Darcy (Principal Supervisor): simon.darcy@uts.edu.au

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on 02 9514 9772 or Research.ethics@uts.edu.au and quote this number *ETH21-5814*.

Appendix 4. Multilevel exploratory factor analysis for psychosocial safety climate and emotional contagion

```
VARIABLE:
      NAME = …;
      USEVARIABLES = PSC_1 PSC_2 PSC_3 PSC_4
                     EC_1 EC_2 EC_3 EC_4 EC_5 EC_6;
      CLUSTER = Group;
ANALYSIS:
      TYPE IS TWOLEVEL EFA 1 2 1 2;
```

Appendix 5. Multilevel McDonald's omega code for the scale of employee wellbeing

```
VARIABLE:
      NAME = …;
      USEVARIABLES = EWB_1 EWB_2 EWB_3 EWB_4;
      CLUSTER = Group;
ANALYSIS:
      TYPE IS TWOLEVEL;
      PROCESSOR = 2;
MODEL:
      %WITHIN%
            EWB_W by EWB_1* EWB_2* EWB_3* EWB_4* (lW1-lW4);
            EWB_W@1;
            EWB_1 EWB_2 EWB_3 EWB_4 (eW1-eW4);
            %BETWEEN%
            EWB_B by EWB_1* EWB_2* EWB_3* EWB_4* (lB1-lB4);
            EWB_B@1;
            EWB_1 EWB_2 EWB_3 EWB_3 (eB1-eB4);

Model Constraint:
New(suml2B sumeB omegaB corB suml2W sumeW omegaW corW);
suml2B =(lB1+lB2+lB3+lB4)**2;
sumeB = eB1+eB2+eB3+eB4;
omegaB = suml2B/(suml2B+sumeB);
corB = sqrt(omegaB);
suml2W =(lW1+lW2+lW3+lW4)**2;
sumeW = eW1+eW2+eW3+eW4;
omegaW = suml2W/(suml2W+sumeW);
corW = sqrt(omegaW);
```

Appendix 6. Multilevel structural equation code to test the hypothesised model

```
VARIABLE:
      NAME = …;
      USEVARIABLES = EWB WS PSC LMX EC;
      CLUSTER = Group;
DEFINE:
    CENTER EC (GRANDMEAN);
ANALYSIS:
```

```
    TYPE IS TWOLEVEL RANDOM;
    ESTIMATOR = BAYES;
    FBITERATIONS = 10000;
    PROCESSORS = 2;
MODEL:
    %WITHIN%
    S | EWB ON WS;
    EWB ON PSC LMX;
    WS ON PSC LMX;
    LMX ON PSC;

    %BETWEEN%
    S ON EC;
    EWB ON WS PSC LMX;
    WS ON PSC LMX;
    LMX ON PSC;
OUTPUT:
    STDYX TECH8;
```