Psychosocial Safety Climate: Composition (Mean Level) and Dispersion (Climate Strength and Climate Ideal) at Team and Organisational Levels in Australian and Iranian Contexts

by

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A thesis submitted for the degree of

Doctor of Philosophy (Psychology)

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March 2018

Table of Contents

List of Figures ..... **vi**

List of Tables ..... **vii**

Glossary ..... **x**

Declaration ..... **i**

Acknowledgments ..... **ii**

Dedication ..... **iv**

Summary ..... **v**

Chapter 1: Introduction **1**

Psychosocial Safety Climate 4

PSC links to employee health, safety and productivity 5

How PSC reduces the impact of psychosocial factors on worker health 6

What does a high PSC workplace look like? 6

Research Questions and Rationale 7

Research Aims and Objectives 11

Contribution to Knowledge 11

Contribution to Practice 11

Research Overview 12

Chapter 2: Psychosocial Safety Climate and Climate Strength: Literature Review **15**

Introduction 16

PSC: the constructive elements and its significant role 17

Management commitment 17

Management priority 18

Organisational participation 18

Organisational communication 19

Review of Work Stress Theories 22

Job Demands-Resources (JD-R) Theory 22

JD-R Theory- How the Pathways Lead to Burnout 24

JD-R Theory: How the Pathways Lead to Work Engagement 26

Research Evidence on JD-R Model 27

Job Demand-Control (JD-C) Model 30

Research Evidence on JD-C model 32

The Effort–Reward Imbalance Model 34

Psychosocial Safety Climate Model 38
PSC as a predictor of ERI Theory 39
Research Evidence on PSC 40
Psychosocial Safety Climate Strength 46
Climate strength as new concept for PSC theory 47
Research Evidence on Climate Strength 48
How PSC strength predict JD-R, health and work outcomes 50
Chapter 3- Study One: Psychosocial Safety Climate from Composition and Dispersion Perspectives 51
Abstract 52
Introduction 53
Psychosocial Safety Climate 54
Derivation of PSC Strength 58
Determining PSC Consensus 60
PSC Level × PSC Strength Interactions 62
Study Design 62
Participants and Procedure 62
Methods 66
Measures 67
PSC level and Strength 67
Job Demands and Resources 68
Health and Work Engagement 70
Results 70
Hypothesis Testing 71
Discussion 83
Research Implications 85
Limitations and Directions for Future Research 86
Conclusion 87
Chapter 4- Study Two: Should Psychosocial Safety Climate Theory Be Extended to Include Climate Strength? 89
Abstract 90
Psychosocial Safety Climate 92
Organisational Climate Strength 95
PSC Strength 96
Operational Definition of PSC Strength 98
The Current Study 99

Method 101
Participants and Procedure 101
Design 102
Measures 102
PSC 102
Job Conditions 104
Job Resources 104
Psychological Health Outcome 104
Work Outcome 105
Statistical Analysis and Aggregation Procedure 105
Results 106
Discussion 115
Theoretical and Practical Implications 117
Strengths, Limitations and Future Research 120
Conclusion 122
Chapter 5- Study Three: Psychosocial Safety Climate from Two Different Cultural Perspectives in the Asia Pacific: Iran and Australia Hospitals 124
Abstract 124
Introduction 126
Psychosocial Safety Climate in the Asia Pacific Region 128
Theoretical Framework of Psychosocial Safety Climate 128
Method 132
Participants and Procedure 132
Instruments 133
PSC 133
Job Demands 133
Job Resources 134
Health and Work Outcomes 134
Statistical Analysis 134
Results 135
Discussion 140
Strength, Limitations and Practical Implication 141
Chapter 6- Study Four:The Beneficial Effects of PSC Ideal as a Clear and Strong PSC Message 143
Abstract 144
Introduction 145

Theoretical foundation 148
Psychosocial safety climate (PSC) 148
PSC from Level, Strength and Ideal Perspectives 149
Hypotheses 152
Method 153
Participants and Procedure 153
Statistical Analysis 154
Measures 154
Psychosocial Safety Climate (PSC-12) Scale 154
PSC Strength 155
PSC Ideal 156
Job Demands 156
Psychological Health Outcomes 157
Aggregation procedures 158
Data Analysis 159
Results 160
Hypothesis testing 162
Discussion 180
Strengths, limitations and future research 182
Conclusion 183
Chapter 7: Discussion and Conclusion 184
Introduction 185
Study One 186
Study Two 187
Study Three 188
Study Four 189
Theoretical Implications 189
Practical Implications 194
Study Limitations and Future Research Suggestions 197
Conclusion 202
References 205
Appendix 1: AWB Scale translated into Farsi 227

List of Figures

Figure 1.1 Theoretical Framework for the Thesis 7

Figure 1.2 Research Overview..... 14

Figure 2.1 Job Demand-Resources (JD-R) Model..... 23

Figure 2.2 Job Demand-Control (JD-C) Model..... 32

Figure 2.3 The Effort-Reward Imbalance (ERI) Model 35

Figure 2.4 Psychosocial Safety Climate (PSC) Model 39

Figure 3.1 PSC Level, PSC Strength and Job Demands-Resources Model (JD-R) 64

Figure 3.2 PSC Level and PSC Strength Interaction to Predict Organisational Rewards ……79

Figure 3.3 PSC Level and PSC Strength Interaction to Predict Supervisors Support 80

Figure 4.1 PSC Level, PSC Strength and Job Demand-Resources (JD-R) Model..... 100

Figure 4.2 PSC Level and PSC Strength Interaction to Predict Work Engagement.....115

Figure 5.1 PSC Model 132

Figure 6.1 The Theoretical Explanation behind PSC and PSC Ideal 147

Figure 6.2 PSC Level, PSC Strength and PSC Ideal: the theoretical model of research based on Job Demands-Resources model and PSC theory..... 152

Figure 6.3 PSC Level Interaction with Psychological Demands to Predict Psychological Distress..... 166

Figure 6.4 PSC Ideal Interaction with Psychological Demands to Predict Psychological Distress..... 166

Figure 6.5 PSC Strength Interaction with Psychological Demands to Predict Depression ……..170

Figure 6.6 PSC Ideal Interaction with Psychological Demands to Predict Depression …….…….171

Figure 6.7 PSC Strength Interaction with Emotional Demands to Predict Psychological Distress 173

Figure 6.8 PSC Ideal Interaction with Emotional Demands to Predict Emotional Exhaustion 175

Figure 6.9 PSC Strength Interaction with Emotional Demands to Predict Depression…….178

Figure 6.10 PSC Ideal Interaction with Emotional Demands to Predict Depression……178

List of Tables

Table 3.1 Descriptive Statistics: Means, SDs and Correlations between Research Variables 74

Table 3.2 Hierarchical Linear Modeling for Job Demands 76

Table 3.3 Hierarchical Linear Modeling for Job Resources 78

Table 3.4 Hierarchical Linear Modeling for Health and Work Outcomes 82

Table 4.1 Means, Standard Deviations and Correlations 108

Table 4.2 Hierarchical Linear Modeling for Job Demands 110

Table 4.3 Hierarchical Linear Modeling for Job Resources 112

Table 4.4 Hierarchical Linear Modeling for Health and Work Outcomes 114

Table 5.1 Means, Standard Deviations, Cronbach's alphas, and Correlations 137

Table 5.2 Differences (t-Test) between Iran and Australia on PSC, Demands, Resources, Health and Work Outcomes 138

Table 5.3 Multi-level Analysis of PSC Team Level (L2) as a Predictor of Level 1 Factors 139

Table 6.1 Means, Standard Deviations and Correlations 161

Table 6.2 Hierarchical Linear Modeling for Psychological Demands and Psychological Distress 164

Table 6.3 Hierarchical Linear Modeling for Psychological Demands and Emotional Exhaustion 167

Table 6.4 Hierarchical Linear Modeling for Psychological Demands and Depression 169

Table 6.5 Hierarchical Linear Modeling for Emotional Demands and Psychological Distress..... 172

Table 6.6 Hierarchical Linear Modeling for Emotional Demands and Emotional Exhaustion 174

Table 6.7 Hierarchical Linear Modeling for Emotional Demands and Depression 177

Table 6.8 Hierarchical Linear Modeling: Summary of PSC-1, PSC-S & PSC-I Results ……..179

Glossary

Absenteeism: Absence from work

Climate Strength: The amount of workers' agreements on their perceptions within a team-level.

Compilation: compilation is a model of emergent process grounded on discontinuities and differences in the structure of a construct in spite of the similarity in its function across levels. Therefore, the variability and configuration between the lower-level units within the collective entities are essential features for the process. So, Composition and compilation models of process are supreme types at polar ends of a continuum that may conceptualize several specific emergence methods.

Composition: in multilevel research composition concept is mainly utilized when data from a lower level are aggregated to be used as higher level constructs. Composition emergent process is based on isomorphism in terms of similarity in construct content across levels, and essential features of process are convergence and sharedness among the lower-level entities within the collective.

Depression: Mental health condition characterised by pervasive low mood.

Dispersion: a quantifiable variation of measurements of differing members of a population

Engagement (work): Fulfilment from work, characterised by vigour, dedication, and absorption.

ERI: Efforts and Rewards Imbalance Theory

HLM: Hierarchical Linear Modeling

ICC: Intraclass Correlation Coefficient

JD-C: Job Demands and Control Theory

JD-R: Job Demands and Resoureces Theory

Organisational Climate: Properties of the work environment as perceived by employees.

Organizational Level (micro and macro levels): Organisations are divided into three levels, organisational, process, and job or Performer. In multi-level social studies, the micro-level is the individual level. Meso level is the structure and culture (i.e. processes in organisations). Macro is the level of organisations, cultural traditions, organisational climate, leadership styles and the like.

PSC Ideal: PSC level (mean) devided by PSC standard deviation$\frac{PSC\ Level}{SD}$.

PSC Level: Psychosocial Safety Climate (mean) is a type of organisational climate, characterised by prioritising employee psychological health.

PSC Strength: PSC standard deviation multiplied by minus one (-1).

Psychological Distress: Negative emotional state including anxiety, sadness, and depression.

Resources: Resources are aspects of a job that assist in meeting demands.

r_{WG}: An interrater agreement indice

SPSS: Statistical Package for the Social Sciences

Declaration

This thesis presents work carried out by myself and does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; to the best of my knowledge it does not contain any materials previously published or written by another person except where due reference is made in the text; and all substantive contributions by others to the work presented, including jointly authored publications, are clearly acknowledged.

Ali Afsharian



14/02/2018

Acknowledgments

I would like to extend thanks to many people, from Iran to Australia, who have been generously contributed to the work presented in this thesis. I must offer my profoundest gratitude to principal supervisor, Professor Maureen Dollard. Special mention goes to her enthusiastic supervision. My PhD has been an amazing experience and I thank Maureen wholeheartedly, not only for her tremendous academic support, but also for giving me so many wonderful opportunities to learn.

Similar, profound gratitude goes to Professor Christian Dormann and Dr. Tahereh Ziaian, who have been truly dedicated associate supervisors in my PhD project. I am particularly indebted to Christian for his constant faith in teaching me multilevel organizational research using Mplus and for his generous hosting when I was in Mainz, Germany from where I have very fond memories.

I am also hugely appreciative to Dr. Tahereh Ziaian, especially for sharing her academic expertise and knowledge on nursing psychological issues so willingly, and for being so dedicated to her role as one of my secondary supervisors.

Many thanks to my fellow colleagues at Asia Pacific Centre for Work, Health and Safety at Work (APC-WHS); a collaborating centre with the WHO, especially Dr Amy Zadow.

I am grateful towards the university of South Australia scholars especially Dr Monica Behrend for her professional editions and Professor Tony Winefield for his supervisory support.

The Commonwealth's contribution in the form of the "Australian Government Research Training Program Scholarship" is acknowledged.

I would like to thanks Meredith Gavanon and Alireza Keshtkar, who have been both influential teachers in my life. Special mention goes to Dr. Alizadeh (senior manager of Atieh hospital in Tehran, Iran), Dr. Kakuee (Atieh hospital manager) and Dr. Ghaffari (Atieh hospital human recourse manager), Ms. Atefeh Karimzadeh (Research and development officer in Atieh hospital) and Dr. Farhad Gaffari for going far beyond the call of duty.

Finally, but by no means least, thanks go to Late mother, for her wishes for me to be successful and my father for his help to grow up independently and my wife, Sara and my daughter, Atrina for their support and patience. They have been the most important people in my world to whom I dedicate this thesis.

Dedication

I dedicate this thesis to my wife; for saving my life with her best marry decision with me. She is an adventurer and autodidact who learnt to.

This dissertation is dedicated to my brilliant and outrageously loving and supportive wife, Dr. Sara Shamsara, and our exuberant, sweet kind-hearted little girl, Atrina Afsharian. Indeed, I could not finish this long journey without their amazing support.

Summary

The Psychosocial Safety Climate (PSC) theory of work stress has been introduced and well progressed during the last decade. PSC refers to the managerial policies, procedures and practices to support employees' psychosocial health at work. In four studies, this thesis explored why, how, and when PSC predicts work conditions, health and engagement by examining PSC level (mean), PSC Strength (-1×SD) and PSC Ideal ($\frac{PSC\ Level}{SD}$).

PSC level refers to the mean level of PSC in a work group such as a team or organisation, and is associated with how jobs are designed. PSC Strength refers to the variation of PSC indicated by the standard deviation (SD) and reveals how consistent perceptions are within a group. PSC Ideal refers to the PSC level adjusted for by the standard deviation ($\frac{PSC\ Level}{SD}$). PSC Strength and PSC Ideal reveal the level of agreement in perceptions within the group. In work situations with high PSC strength or high PSC Ideal, there is likely low levels of ambiguity - employees perceive PSC similarly, and should have the same expectations of policies, practices and procedures in relation to worker psychological health, and more certainty about behaviour that will be rewarded. Conversely, in low PSC strength or PSC Ideal situations employees likely perceive PSC differently; therefore, they would have inconsistent expectations of PSC and less certainty about their own suitable behaviours.

In Study One, PSC level and PSC strength were investigated at the organisational level using a large multilevel data set of a longitudinal study, the Australian Workplace Barometer (AWB), collected from six states in Australia across a range of different industries. The AWB was a population based sample of 4242 participants of which 1389 participants could be nested into 305 organisations with at

least 5 employees in each. The results indicated that higher PSC strength was only important when PSC level was also high for organisational rewards and supervisors' support.

In Study Two, PSC level and PSC strength were investigated at the team level in private hospital work groups (n = 249 employees). The correlation between PSC mean levels and PSC strength or dispersion (-1×SD) was moderately high suggesting that ceiling effects of PSC scores were not problematic. PSC means, rather than PSC strength and their interactions, were better predictors of job demands (psychological and emotional demands) and resources (e.g., skill discretion, organisational support), and health (emotional exhaustion) – except for work engagement.

To expand the PSC boundaries to Middle East countries, testing its generalizability, Study Three investigated PSC levels testing the theoretical paths of the PSC extended Job Demands-Resources Model. In a comparison study between Iranian (N = 257, across 33 work groups) and Australian (N = 239, across 21 work groups) hospital work groups through the lens of internationality, this study investigated work groups in an Iranian private hospital. The findings revealed that PSC was a climate construct existed as a group phenomenon cross-culturally; PSC in Iran had group like properties with around 11% (cf 15% in Australia) of the variance in PSC due to group level factors, with high levels of homogeneity of perceptions of PSC within groups (.92 vs .94 Australia). Compared to the Iranian sample, Australian hospital employees reported higher levels of PSC, skill discretion and decision authority, and lower levels of emotional demands.

The major theoretical paths delineated in PSC theory were confirmed in the Iranian data. Multilevel analysis showed that team PSC was significantly negatively

related to psychological demands, and emotional exhaustion and significantly positively related to job resources, decision authority, and work engagement. In Australian, an additional significant positive relationship was found between team PSC and higher levels of the job resource, skill discretion.

In Study Four for the first time, this study investigated PSC level (mean), PSC Strength (-1×SD) and PSC Ideal $\frac{PSC\ Level}{SD}$ at the organisational level. AWB (a sample of 67 organisations including 632 participants) was used. PSC theoretical boundaries were expanded to include Climate Strength since this is a progressively growing interest in the organisational literature and also to introduce PSC Ideal $\frac{PSC\ Level}{SD}$ as a new concept in organisational studies. In contrast to PSC level, PSC Ideal showed the most significant 'interactive' effects on job demands (psychological and emotional) relationships with emotional exhaustion, psychological distress and depression at the individual level.

In conclusion, PSC mean level was supported in the research as the leading indicator of psychosocial hazards, psychological health problems and work engagement signifies a beneficial target for stakeholders to monitor, address and evaluate PSC within organisations and across industries. Theoretically, PSC level, PSC Strength and PSC Ideal reflect the level and consistency (or conversely, variability) respectively of employees' shared perceptions of managerial priority for workplace psychological health and safety. This PhD project delivered multilevel theoretical support for the interaction effects of PSC Strength (see Studies One and Two) on PSC level, PSC levels in different cultural contexts (see Study Three) and PSC Ideal interactions (see Study Four) on PSC level in relation to job demands (psychological and emotional) and psychological health (psychological distress, emotional exhaustion and depression). The

results imply that by considering PSC strategies, managers can improve the workplace environments to protect employees' health and safety.

Keywords:

Psychosocial Safety Climate, PSC Strength, PSC Ideal, Job Demands and Resources, psychological health and work engagement

Chapter 1

Introduction

Employee work health and safety is a basic human right, and reasonably should be a priority over and above productivity issues (Chernyak-Hai & Tziner, 2016; Dollard & Neser, 2013; Neira, 2013). Working populations are under the spotlight of global endeavours to provide safe and healthy workplaces. For instance, the *Worker's health: global plan of action 2008–2017* by the World Health Organisation guides international efforts to protect and promote policies aimed at workplace health and safety (World Health Organisation, 2013). The Psychosocial Safety Climate model, the centrepiece theory of this thesis, provides a framework within which work related stress and other psychosocial work risk factors could be prevented to reduce their health harming effects (Dollard et al., 2012).

Work stress is preventable particularly in developed countries (Clarke & Cooper, 2000; National Occupational Health and Safety Commission, 2012). Many countries have national policies that address psychological risk factors to improve workers' health and productivity (Dollard & Neser, 2013). However, a large gap exists between countries in relation to how work stress and psychosocial risks are managed (Lunau, Dragano, Siegrist, & Wahrendorf, 2017). There is a 'huge cost' to employees' health and productivity that is related to workplace stress (European Agency for Safety and Health at Work, 2011). The harmful impacts of stress on health and safety are recognised for both organisations (e.g., lost productivity, absenteeism and turnover) (Clarke & Cooper, 2000) and individuals (e.g., depression, burnout, and anxiety) (National Occupational Health and Safety Commission, 2012; Parker, 2013).

Many scholars have been interested in work stress theories to clarify why, how and when it occurs (Bakker, Killmer, Siegrist, & Schaufeli, 2000; Demerouti, Bakker, De Jonge, Janssen, & Schaufeli, 2001; Lamontagne, Keegel, Louie, Ostry, & Landsbergis, 2007). Leading models like Job Demand-Control (JD-C) (Karasek, 1979), the Effort-Reward Imbalance (ERI) (Siegrist, 1996; Siegrist et al., 1986) and more

recently, Job Demand-Resources (JD-R) (Demerouti et al., 2001) have considered the job design elements of job demands and job resources and their associations as essential for understanding work stress. Accordingly, workers exposed to work-related demands such as heavy work load, pressure, role uncertainty, and role conflict experience adverse effects on their health and safety (Gallery, Revicki, & Whitley, 1993; Murray & Lopez, 1996). Subsequently, work-related stress risk factors can lead to burnout (physical, mental and emotional exhaustion), job dissatisfaction, decreased staff productivity, work-related illness, injuries and mental health problems like depression and in the worst situation, suicide (Boxer, Burnett, & Swanson, 1995; Cabrera & Diaz, 1997). Moreover, different resource factors such as supportive social environments that emphasise planning and effectiveness, cohesive team members and supervisors, existing autonomy skills and reward system can significantly reduce the adverse impact of work-related stressors (Boxer, et al., 1995).

These main job stress theories disregard features of organisational context that influence job design characteristics (Morgeson, Dierdorff, & Hmurovic, 2010). This theoretical gap regarding the organisational features which affect the job design charactristics is addressed by the Psychosocial Safety Climate (PSC) construct in a multi-level way. PSC is an organisational level construct that precedes job design features that are experienced at the individual-level. The PSC construct specifically identifies the origins of job design features by reference to management values and concerns for psychological health and safety (Yulita, 2017).

The following section addresses the definition of PSC, its relationships with other workplace variables and its important role in promoting and improving the working environments and in reducing the impact of psychosocial factors on workers' health and safety.

Psychosocial Safety Climate

Psychosocial Safety Climate (PSC) is defined as the organizational climate for employees' psychological health and safety (Dollard & Bakker, 2010). PSC, as the managerial policies, procedures and practices, sustains employees' psychological health and safety at work. The PSC model comprises four basic dimensions; Management Commitment, Management Priority, Organisational Participation, and Organisational Communication (Dollard & Bakker, 2010).

According to Schneider and colleagues the predictive validity of climate is likely to be greater when facet-specific aspects of climate are delineated and linked to focal outcomes in the same domain (Schneider, Bowen, Ehrhart, & Holcombe, 2000). Over time organisational climate theory has progressed from a comprehensive construct to differentiating types of specific-facet climates that focus on a specific outcomes of interest (Ostroff et al., 2003), such as ethics (Victor & Cullen, 1987, 1988), innovation (Anderson & West, 1998), justice (Naumann & Bennett, 2000), voice (Morrison, Wheeler-Smith, & Kamdar, 2011), diversity (McKay, Avery, & Morris, 2008), safety (Zohar, 1980), and service (Schneider, White, & Paul, 1998) climates, to investigate workplace issues (D'Mello, 2015). Psychosocial safety climate is an example of a facet-specific aspect of organisational climate.

As an organizational level construct PSC is determined by shared perceptions of organisational "policies, practices and procedures" to protect worker psychological health and safety. Compared to previous studies which uncover the relationship between work stress and work safety (e.g., Glendon, Clarke, & McKenna, 2006), PSC deals with workers' psychological health and safety more specifically compared to other organizational climate constructs (Dollard & Bakker, 2010).

PSC has been referred to as the 'cause of the causes' of work stress by national and international scholars. From this perspective, PSC is considered as a prominent indicator of risk factors since it predicts psychosocial risk related to workplace demands and resources and to workers health and productivity at the same time. Accordingly, PSC studies have provided strong evidence that PSC predicts job design factors such as work pressure and emotional demands (Dollards & Bakker, 2010), work load (Dollard et al., 2012; Owen, Bailey, & Dollard, 2016), job strain (Bailey, Dollard, & Richards, 2015; Dollard & Bakker, 2010), and other psychosocial risk factors such as workplace bullying and harassment (Bailey, Dollard, McLinton, & Richards, 2015; Escartin, Dollard, & Zapf, 2013; Law, Dollard, Tuckey, & Dormann, 2011).

PSC also predicts other work-related resources such as skill discretion (Dollard & Bakker, 2010), work rewards (Law et al., 2011; Owen, et al., 2016), and job control and supervisor support (Dollard et al., 2012). In this way, PSC has been focused on as a central upstream point to prevent psychosocial risks and hazards at work.

PSC links to employee health, safety and productivity

PSC has been found to be associated with a variety of employees' health and productivity related factors ranging from psychological distress and emotional exhaustion to workplace injuries. Consistently research studies show PSC is related to psychological distress, emotional exhaustion (Idris, Dollard, Coward, & Dormann, 2012), depression (Bailey, Dollard, & Richards, 2015; Escartin, Dollard, & Zapf, 2013), sickness absence and presenteeism (Becher & Dollard, 2016), work performance and engagement (Idris, Dollard, & Winefield, 2011; Law et al., 2011), and workplace injuries (Bailey, Dollard, McLinton, & Richards, 2015).

How PSC reduces the impact of psychosocial factors on worker health

PSC also plays a secondary role, moderating the relationship between psychosocial risk factors and well-being outcomes. In order to facilitate the process mentioned, PSC buffers the impact of bullying on post-traumatic disorder (Bond, Tuckey, & Dollard, 2010), job demands on depression (Hall, Dollard, & Coward, 2012), emotional demands on workgroup distress (Dollard, Tuckey, & Dormann, 2012), and bullying and harassment on engagement (Law et al, 2011).

It is concluded that, to support employees in their psychological health management, high PSC can decrease the impact of undesirable conditions at work.

What does a high PSC workplace look like?

Following is a description of the outstanding features of a high PSC workplace. PSC results from management values about worker psychological health and involves management decisions to create a psychologically healthy work environment. A high PSC environment is conceptualised as having manageable demands and sufficient resources where policies and practices can efficiently control psychosocial risk factors to shape jobs. In such a workplace, individuals ranging from human resources to supervisors and managers will be aware of policies, practices and procedures to protect employees' mental health. Workers will be supported for example to arrange flexible working hours and report possible bullying and harassment. Stress prevention can be clearly communicated and psychosocial risk factors can be discussed at meetings regarding employees' safety. In conclusion, in order to take a good care of psychological health and well-being in the organization, related policies and procedures will be put in practice at the executive, middle management and worker levels.

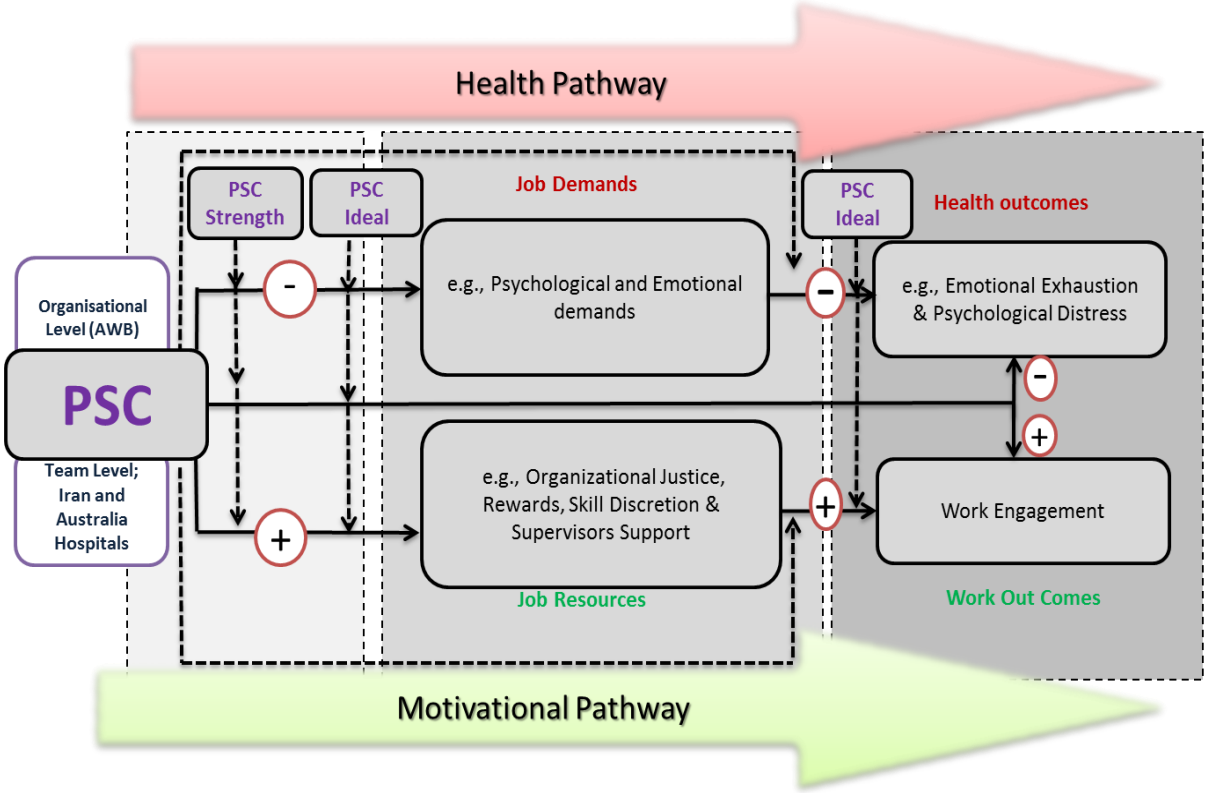


Figure 1.1 PSC Theoretical Framework for the Thesis

Research Questions and Rationale

This thesis will address existing gaps in literature by exploring the following research questions:

1) To what extent, does PSC level (mean) and PSC strength (dispersion) associate with job demands and resources to predict work and health outcomes at organisational level? Can PSC strength explain more variance than PSC level alone in predicting work and health outcomes? (see Chapter 3).

The existing body of research on Psychosocial Safety Climate (PSC) suggests that it is a significant precursor of work environment factors (e.g., Becher & Dollard, 2016; Idris & Dollard, 2016; Owen, Bailey, & Dollard, 2015). While the negative effects of stress and other psychosocial risk factors at work are now well- recognized and documented, little is known about how organisations contribute to levels of stress, and

how diversity of PSC perceptions can play an important role in moderating the PSC relationships with other workplace factors. All the PSC studies conducted at the organisational level so far (e.g., Bailey et al., 2015; Dollard et al., 2012a; Dollard & Bailey, 2014; Idris & Dollard, 2016; Law et al., 2011) have exposed that the role of PSC variability has been neglected by only considering the PSC mean levels of team or organisations. Regularly the variability of climate (strength) or unexplained variance distributed within groups have been recognized as the measurement errors (Kozlowski & Klein, 2000). Even though, climate strength is rarely measured in multi-level studies, it might signify an important concept at higher levels (Cole, Bedeian, Hirschfeld, & Vogel, 2011; Harrison & Klein, 2007). To this end, following Law et al. (2011) this study expands the PSC research model to include a bigger sample (six states of Australia) to investigate the role of climate strength by introducing the construct of PSC strength.

Paradoxical findings lead us to scrutinize PSC level and strength beyond organizational level effects, by asking the following question regarding team level effects;

2) Should Psychosocial Safety Climate theory be extended to include climate strength at the team level? Can PSC strength explain more variance than PSC level alone at the team level? (see Chapter 4).

Investigating PSC strength at the team level to see how it adds to the PSC level in relation to working conditions may require a different set of processes theorized. Largely influenced by leaders' attitudes and values (Howard-Grenville, Bertels, & Lahneman, 2014), PSC is conceived as a property of the organization which can be observed through aggregation of employees' responses at the unit (team or group) level. Therefore, this

study investigates hospital workgroups, as one the most demanding work evironments, specifically considering both PSC level and PSC strength in more groups. Regarding how PSC relates to work conditions, PSC strength may work by increasing the reliability of the "objective" PSC observation via employees' predictions of work conditions.

Next, the generalisability of PSC theory is evaluated by asking the following question;

3) Does PSC theory make sense in a Middle Eastern culture? Does PSC predict job design, psychological health and work engagement, as it does in an Australian sample? Are there any significant differences in PSC theory between Iran and Australia? (see Chapter 5).

Psychosocial Safety Climate (PSC) (Dollard & Bakker, 2010) is a construct that is distinct from other related climate measures (i.e., physical safety climate, team psychological safety, perceived organisational support) and is superior to other team level climate measures in terms of its ability to predict psychosocial risk factors such as job demands and resources, and also psychological health outcomes (Idris, Dollard, Coward, & Dormann, 2012). PSC theory has not been tested in an Iranian population. A recent study has found that the PSC main elements are negatively related to work place psychosocial risk factors (Amiri et al., 2015). PSC is anticipated to be a more effective predictor of psychosocial risk factors and psychological health in Iranian workplaces than previous general safety climate measures that are not specifically designed for psychological health. Greater research attention towards understanding the nature and influence of psychosocial risks, and the role of PSC (Dollard & Bakker, 2010) across differing sociocultural contexts is required. This research uses multilevel techniques to compare PSC theory in two separate counties in the Asia Pacific region; Iran, to bring new understanding into the role of the prevention of psychosocial risk in an unexplored

area, and Australia, a neo-liberal economy with a strong emphasis on profit and productivity (Kawakami, Park, Dollard, & Dai, 2014). Testing PSC theory in the Iranian population will add to the growing body of literature about the role of PSC across the Asia Pacific region which has been predominantly tested in Australia and Malaysia (i.e. Dollard & Bailey, 2014; Dollard & Bakker, 2010; Idris & Dollard, 2011, 2014b; Idris et al., 2012; Kwan, Tuckey, & Dollard, 2014) (see Chapter 6). This cross cultural research will bridge the gap on how PSC theory applies to alternative social-cultural contexts in the Asia Pacific Region.

4) Finally, to what extent does exploring the variability of PSC via indices like climate ideal, over and above the mean level concept of PSC, progress our understanding of the PSC theoretical model? Are there beneficial effects of the construct of PSC ideal as a clear and strong message of managerial policies (see Chapter 6)

This secondary role of PSC suggests that PSC performs as a safety signal representing some consequences and benefits for employees, and whether or not using job resources is safe to manage and control job demands (Law et al., 2011; Zadow, Dollard, McLinton, Lawrence, & Tuckey, 2017). However, it is expected that an ideal situation is when the PSC is high and almost all the employees have similar perceptions of PSC. In this condition, PSC mean level is high and its variability (standard deviation) within organisations is very low. The concept of PSC Ideal as an impeccable strong climate is represented by PSC level divided by PSC standard deviation which approaches zero (see Figure 1.1). Therefore, this study will explore the expansion of the PSC theoretical boundaries to include PSC ideal as a new concept to describe the most effective PSC situation. It is expected while high level of PSC mean is considerably important to reduce the psychosocial risk factors. However, PSC Ideal emphasises the role of uniform individual perceptions to low PSC variability at organisational level and potential benefits.

Research Aims and Objectives

The overall aims of this thesis are to:

1. Theoretically expand and empirically test PSC theory including PSC Strength and PSC Ideal concepts.
2. Examine these theoretical extensions at the organisational and team level.
3. Test the international cross-cultural generalisability of PSC theory in the Middle East for the first time.
4. Examine PSC theory and implications for worker health and safety in a comparison study between Iranian and Australian hospital work groups.

Contribution to Knowledge

Utilising direct consensus (mean level agreement within work group) methods, PSC is mostly investigated in the western countries. To bridge the existing gap in the litrature, this study not only expands the PSC boundaries to the Middle East, specifically Iran as a country at the edge of Asia-Pacific region, but also attempts to approach the PSC concept from both mean and dispersion perspectives. In terms of theoretical implications, this study will scrutinise PSC theory through the lens of cross-cultural and cross level (individual, team and organisational levels) approaches. Comparing Western (Australia) and Eastern (Iran) cultures, this study will introduce PSC concept as an essential feature of an ideal working situation in which the PSC message will be clear for all employees.

Contribution to Practice

In terms of practical implications, the results of this study attempt to open new vistas into PSC, as a new aspect of organisational climate, in Australia and Iran. Equally

important, the research findings will contribute to the impact of PSC on employees' mental and physical health which results in organisational improvement and personal achievementts in real organisational situations.

Research Overview

This research looks at the Psychosocial Safety Climate (PSC) model and PSC as a relatively new specific facet of organisational climate which has progressed well during the last decade and is based on aggregated employees' perception at the group and organisational levels. The PSC model and its relationship to underlying work stress theories like job demands and resources (JD-R) theory are explained in the literature review on PSC and climate strength concepts in Chapter 2.

Through the whole thesis, PSC level and PSC strength are conceived as higher level concepts manifest at the work group or organisational level. In Study One PSC level and PSC strength are investigated at the organisational level via an existing longitudinal data set Australian Workplace Barometer gathered from diverse range of Australian workplaces in six different states. This study has a large sample size (67 organisations including 632 participants) and looks at PSC and PSC strength from an upper level view including individual perceptions nested within large organisations. Mixed support was found for the PSC strength hypothesis so that higher PSC strength was only important when PSC level was also high for organizational rewards and supervisors' support (see Chapter 3).

Since supervisors and team leaders also likely influence PSC, in Study Two, a deeper and more specified investigation of PSC level and PSC strength was conducted at the team level. To test whether the new theoretical concepts would work within a specific industry, the analysis was conducted in the health care industry in private

hospital setting. This study used data collected by Zadow et al (2014) analysed previously for different and more comprehensive aims including the interplay between physical safety climate and PSC. Study Two examines PSC level and strength as main and interactive predictors of working conditions, health and engagement (see Chapter 4).

It is important that theories are tested for the cross-cultural validity. To this end, PSC theory was tested at the boundaries of the Asia Pacific, in Iran, as developing country in the heart of the Middle East. For the first time the PSC extended Job Demands-Resources Model was tested and important benchmarks for workplace health and safety investigations were established in order to make comparisons with other available data (see Chapter 5). In order to confirm the cross-cultural applicability of the Australian Workplace Barometer, a pilot study was first conducted to investigate psychometric characteristics of research scales on a small sample (n=15) health care workers in Iran as a test-retest design with two weeks interval. The pilot study was conducted to confirm the reliability (test-retest design) and validity (content and expert validity) of the scale (Farsi version) in a cross-cultural adjustment for the Iranian population. The the main study was conducted on a smple of hospital employees working in different clinical and none-clinical work groups (employees, n=283 and work groups, n= 35) (see Chapter 5).

Chapter 6 presents another empirical study on Australian Workplace Barometer to expand the PSC theoretical boundaries to go beyond the climate mean level to include Climate Strength (Dispersion/ Standard Deviation) and Climate Ideal ($\frac{PSC}{SD}$) (see Chapter 6). In this study, PSC level (mean), PSC Strength (SD×-1) and PSC Ideal ($\frac{PSC}{SD}$) at the organisational level are investigated. For the first time in this, PSC is theoretically expanded to consider not only mean level climate and its dispersion, but also to introduce PSC Ideal as a new concept via emphasising the PSC mean and PSC standard deviation ratio (see Figure 1.2).

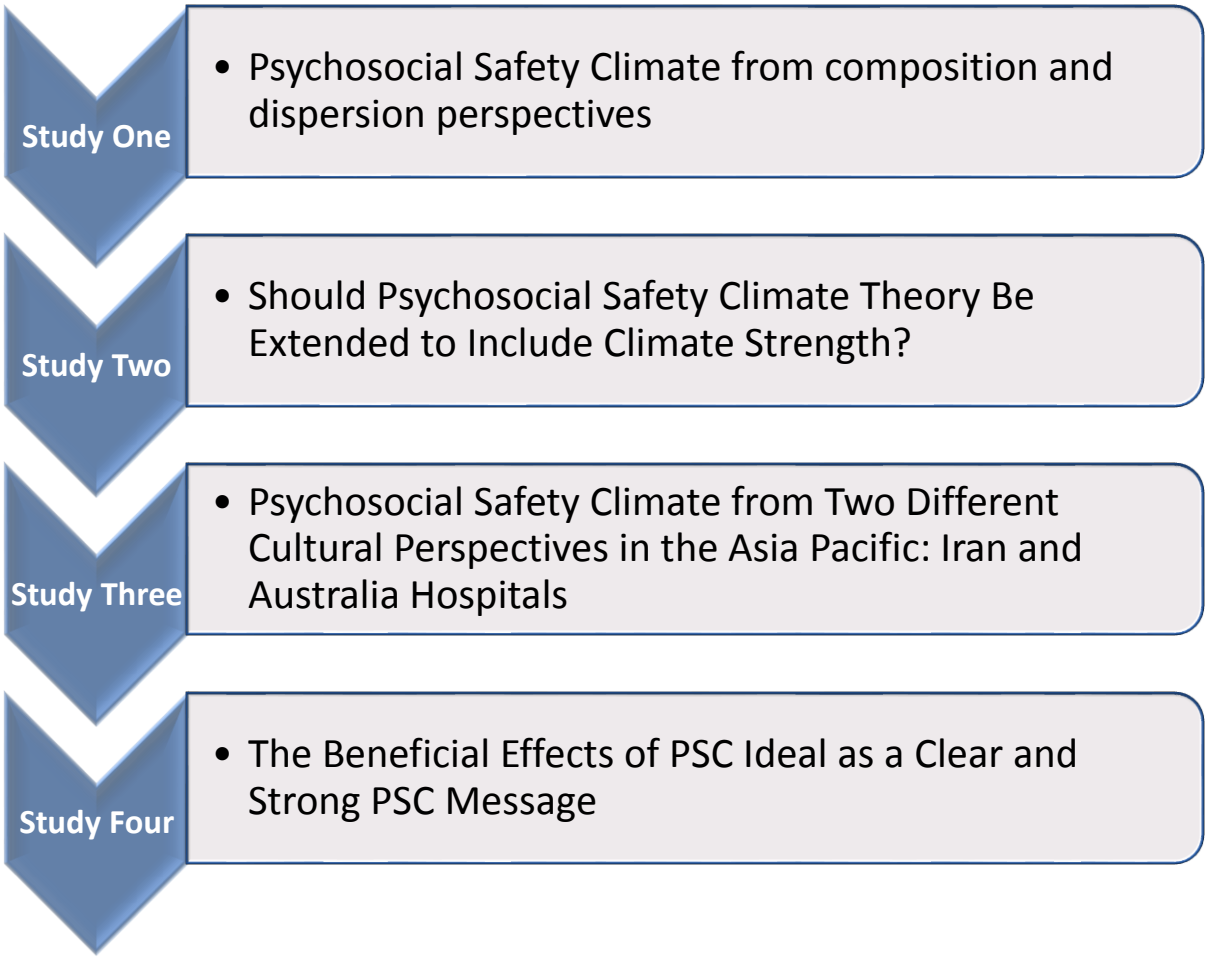


Figure 1.2 Research Overview

Finally, the results are discussed in holistic framework, conclusions drawn with respect to theoretical and practical implications and suggestions for future studies (see Chapter 7).

Chapter 2

Psychosocial Safety Climate and Climate Strength: Literature Review

Introduction

Over the last thirty years, organisational climate as a fundamental construct has become an important topic of investigation in the field of organisational studies broadly (e.g., Chen & Huang, 2007; Reichers & Schneider, 1990; Schneider et al., 2013) and more recently in relation to work-related stress (Dollard & Bakker, 2010). Organisational climate provides an appropriate framework within which to predict employees' behaviours at work (Neal, Griffin, & Hart, 2000) allowing the exploration of behaviours at both individual and group levels (Denison, 1996; Ostroff et al., 2003). As mentioned in the previous chapter, there has been a movement in organisational climate theory from a molar concept to more facet-specific concepts. Fast growing attention has been given to employees' health and safety that has subsequently resulted in a wide range of facet-specific organisational climate constructs, such as safety climate (Zohar, 1980). More recently, the *'psychosocial safety climate'* construct has been introduced to describe a climate for psychological health and safety (Dollard & Bakker, 2010). PSC construct has been described as a main upstream element and an effective target for intervention in prevention of work stress at organisational levels (Dollard & Bailey, 2014).

The main aim of this chapter is to scrutinise psychosocial safety climate (PSC) theory through a critical review of current work stress theories, to establish its unique contribution to the field, particularly outlining its distinction from other climate facets. In order to delve deeper into the understanding of PSC (mean level), we have emphasised the climate strength (Dispersion) concept which was introduced recently to identify and imply the other aspects of organisational climate concepts (González-Romá, Fortes-Ferreira, & Peiro, 2009). Beyond the mean levels of climate within organisations, the variability of the climate also has meaning and implications for organisational behaviour. Finally, the climate strength literature

is reveiwed and PSC strength (a measure of dispersion) and PSC Ideal (level and dispersion combined) concepts are introduced.

PSC: the constructive elements and its significant role

PSC was first introduced by Dollard and Bakker (2010) to focus on the importance of managerial behaviours and consideration for workers' psychological health and safety. Therefore, PSC is defined as "policies, practices and procedures for the protection of workers' psychological health and safety" (Dollard & Bakker, 2010, p. 580; Dollard, 2012). This progressively growing organisational theory from Australia has stimulated theory testing in more complicated and longitudinal studies such as in the Australian Workplace Barometer (AWB) within Australia and later in the Asia Pacific regions such as Malaysia and some European countries such as Germany, The Netherlands, Sweden, Finland, Norway and Denmark.

PSC embraces four principles: (1) Management commitment — the level of support provided by the senior managers to prevent the psychosocial risk factors that create stress at work; (2) Management priority — the importance given to the psychological health and safety over the work productivity by the senior managers at work; (3) Organisational communication — employees relations and communication in relation to psychological health and safety at work; and (4) Organisational participation — the extent to which people at different levels of the organisation get involved with health and safety concerns (Dollard & McTernan, 2011; Hall et al., 2010). PSC main principles are as follows:

Management commitment

Management commitment is a significant mechanism underlying organisational safety climate (Zohar & Luria, 2005). Management commitment refers to decisive and rapid

responses of senior management to prevent or overcome stress at work (Idris, Dollard, Coward, & Dormann, 2012). As safety climate differs in organisations at both organisational and team levels (Edmondson, 1999; Nembhard & Edmondson, 2006; Singer et al., 2003), PSC varies as a consequence of senior management priorities in different organisational levels (Dollard & Bakker, 2010).

Management priority

Most of managers prioritise the psychological health and safety in parrarell with productivity aims. However, Psychological health-related policies sometimes get conflicted with those related to productivity aims. Therefore, a strong indication of psychosocial safety climate at working conditions is needed regarding the importance and priority (Idris et al., 2012).

Operationally, challenging necessities regarding other facets like service climate vs. efficiency may be represented by the main aspects of organisational climate (Zohar & Luria, 2005).The best representatives of priorities in organisations have been identified as "the enacted policies, procedures, and practices" (Dollard & Karasek, 2010; Hall, Dollard, & Coward, 2010; Idris, Dollard, Coward, & Dormann, 2012; Law, Dollard, Tuckey, & Dormann, 2011).

Organisational participation

Organisational Participation has been characterised as consulting with related people from various workforces regarding work-related health and safety processes. Given the literature reviews on occupational stress, the factors mentioned are vital elements for organisations looking at effective intervention plans (Biron & Karanika-Murray, 2014; European Agency for Safety and Health at Work, 2011; Giga, Cooper, & Faragher, 2003; Idris, Dollard, &

Winefield, 2011).Participation is the main preventive strategy for occupational stress encompasses the organisational levels (Giga, Cooper, & Faragher, 2003).

Organisational communication

Organisational communication is known as employees' communications about problems which may influence their psychological health and safety (Idris et al., 2012). Organisational communication indicates the magnitude of listening to employees' contributions to occupational health and safety (Idris et al., 2012). Consequently, this component suggests that policies and practices should facilitate a mutual interaction aims at problem resolving to prevent stress in industries (Idris et al., 2012).

Since PSC is considered as a property of the organisation, it is operationalised by aggregating individual perceptions of managerial behaviours and work place issues related to workers' psychological health (i.e., PSC scores) into higher levels such as the team and organisational levels (Dollard & McTernan, 2011). Accordingly, many PSC studies conducted so far that have used this aggregated method have emphasised the mean level aggregated scores. Psychosocial Safety Climate is important to progress and develop the optimal conditions at work. Consequently, PSC will decrease the burnout rates and increase the work engagement and outcomes.

So far, the key constructive elements of PSC have been introduced and also the significant role of PSC has been explained as an upstream element to understand work designs and workplace risk factors. This next section reviews the literature on PSC and the importance of considering the role of employees' individual perceptions. Previous research on climate strength has argued the need for introducing this as a new variable to better predict the workplace health and safety issues (Cole et al., 2011; Dawson et al., 2008; González-

Romá et al., 2009; Schneider, Salvaggio, & Subirats, 2002) and we introduce for the first time the construct of PSC strength.

Psychosocial Safety Climate (PSC) (Dollard & Bakker, 2010) is a growing perspective in the work stress literature on employees' psychological health. From both national and international perspectives, health and safety have been developed as important elements to prevent stress at work (Kendall, Murphy, O'Neill, & Bursnall, 2000). Continuous exposure to psychosocial risk factors is a robust predictor of physical and psychological health problems as indicated in numerous studies (Biron, Cooper, & Gibbs, 2011). Workplace psychosocial risk factors also reduce workplace productivity because of their effects on absenteeism and presenteeism (Dollard & Bakker, 2010). Research suggests that organisational climate is a potential predictor of organisational performance playing an important role in potential workers' exposure to health risks (Luthans, Norman, Avolio, & Avey, 2008). Organisational climate is specified as the shared perceptions of managerial policies, procedures and practices among employees and the workplace behaviours which can be expected, rewarded, and supported (Ostroff et al., 2003; Schneider et al., 2013). It is also an important factor in how jobs are designed regarding the level of work pressure and emotional demands (Glendon, Clarke, & McKenna, 2016).

Schneider (2013) argued that organisational climate constructs should be specific to be theoretically and practically useful, such as a climate specified in relation to safety. Safety climate refers to shared perceptions, policies, procedures, and practices of workers on safety (Zohar, 2010). This construct emphasises the role of the work environment and job design in order to manage, control, and remove the physical risk factors as much as it is possible (Zohar, 1980).

According to the literature, PSC is related to different aspects of mental health issues such as emotional exhaustion and depression (Dollard & Bakker, 2010; Idris & Dollard, 2011; Law et al., 2011). Even though, other organisational climates are also related to psychological and wellbeing aspects mentioned, PSC differs from other climates by specially emphasising on psychosocial risk factors at work that result in employees' psychological health issues (Dollard & Bakker, 2010; Hall, Dollard, & Coward, 2010; Dollard & Karasek, 2010).

Psychosocial safety climate as a significant element provides a broader and more comprehensive view on workers' work-related perceptions such as safety at work and integrates the individual aspects of safety and the social context which affect their behaviours (psychological and sociological features).

In spite of having the same theoretical background, 'Psychosocial Safety Climate' and 'Safety Climate' follow different aims regarding the psychosocial risk factors and psychological well-being. Consequently, the focus of Psychosocial Safety Climate is mainly on psychosocial risk factors in working environments and designs rather than physical risk factors (Law et al., 2011). Similarly, PSC considers integrity, strength, concerns, and the function of the policies, procedures and practices of the mental health and safety perspective. However, psychosocial safety climate remains quite parallel to the safety climate which is resulted from the employees' environmental perceptions and understandings (Dollard & Bakker, 2010; Dollard & Karasek, 2010; Weick, 1995; Zohar, 2010).

From the theoretical perspective, PSC precedes the job stress theories that propose job design as the starting point for work stress. For instance the PSC model extends the Job Demands-Resources (JD-R) theory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Regarding PSC theory, Dollard et al., (2012) proposed that PSC reflects management concern

for worker psychological health: “in high PSC contexts where demands are manageable, and resources are adequate, managers will be cognizant of risk factors and will help shape jobs. Therefore, levels of demands and resources can be predicted by PSC assessment (Dollard et al., 2012, p. 16).

In the next section, the work stress theories including Job Demand-Resources (JD-R), Job Demand-Control (JD-C), Effort–Reward Imbalance (ERI) and Psychosocial Safety Climate (PSC) are discussed.

Review of Work Stress Theories

Job Demands-Resources (JD-R) Theory

Theoretically, the JD-R model emphasises work-related stress as an imbalance between job demands and resources that individuals deal with in their work environments (Bakker & Demerouti, 2007; Bakker & Demerouti, 2016a). As the JD-R model states, psychosocial aspects of the working environment can be categorised into two main clusters; *job demands* which are defined as “those physical, social, or organisational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs” (Demerouti et al., 2000, p. 501) and *Job resources* including workplace authority and co-worker social support, reward and job control received by employees to achieve their work goals are described as “those physical, social, or organisational aspects of the job that may involve any of the following: (a) be functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth and development” (Demerouti et al. 2000, p. 501). It has also been assumed that job resources can mitigate the negative impact of job demands and other workplace risk factors (Dollard, Tuckey, & Dormann, 2012).

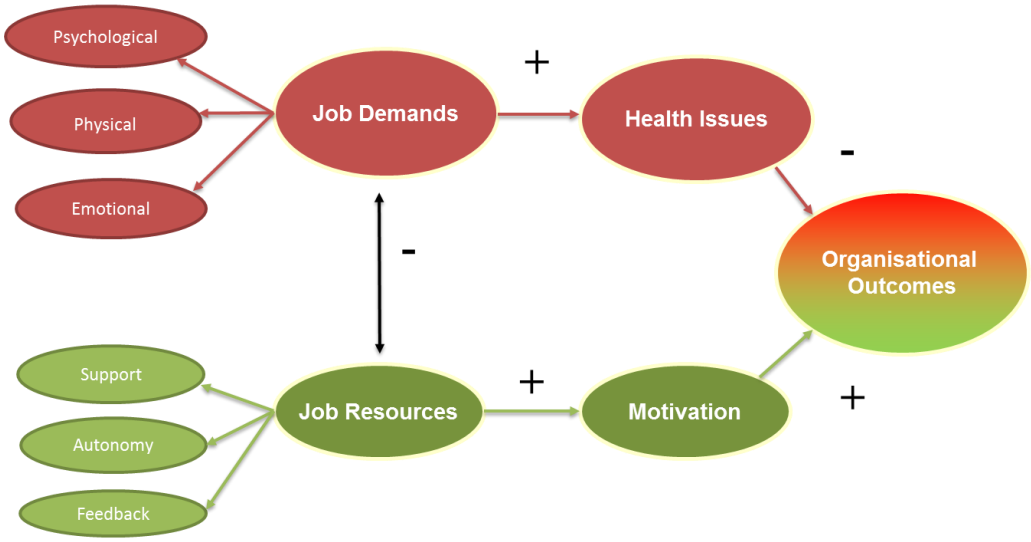


Figure 0.1 Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007)

Job Demands-Resources (JD-R) theory was introduced as an alternative to other workplace stress theories like Effort–Reward Imbalance model and the Job Demand-Control model which are well-known work-stress models (Bakker & Demerouti 2007). However, the JD-R is different from the other workplace health and safety models such as the JD-C model (Karasek, 1979) and the ERI model (Siegrist, 1996; Siegrist, Siegrist, & Weber, 1986). Indeed, these models "have been restricted to a given and limited set of predictor variables that may not be relevant for all job positions" (Bakker & Demerouti, 2007, p. 309). Thus, the JD-R integrates a wide range of positive aspects of working designs and considers both individual and organisational issues such as health and well-being while concentrating on undesirable and/or harmful consequences (i.e., emotional exhaustion, occupational burnout, poor health, and repetitive strain) at the same time through both health and motivational pathways (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

In conclusion, the JD-R model deals with job demands and job resources which lead to burnout and work engagement through different pathways known as health and motivation pathways respectively (Schaufeli & Taris, 2014).

Based on JD-R theory, following this chapter will be discussed how the pathways of Job demands and job resoources will lead to burnout and work angagement.

JD-R Theory- How the Pathways Lead to Burnout

The JD-R model (Demerouti et al., 2001) was primarily introduced in 2000 to investigate the antecedents of job burnout (Schaufeli & Taris 2014). Accordingly, a meta-analysis based on the structural equation modelling has recognised eight demands and thirteen resources that could cause job burnout (Maslach, Jackson, & Leiter, 1996, p. 36).

Health Pathway

According to the health pathway, continuous exposure (without taking enough recovery) to the workplace risk factors and too many demands like doing lots of emotionally demanding tasks quickly and suppressing genuine emotions may lead to job strain and subsequently may contribute to the emotional exhaustion which is the motivation of job burnout (Bakker & Demerouti, 2007). As in the primary studies of JD-R model mentioned, working environments with high demands and low resources may ultimately result in mental and physical issues like emotional exhaustion and subsequently job burnout (Demerouti et al. 2000).

Consequently, job resources can moderate the relationship between job demands and exhaustion in the health pathway. Thus, it would be necessary for employees to recover from taxing demands by diverting to a different subject, task or even by taking a break for instance.

Nevertheless, sustained activity and inadequate recovery significantly impact the employees' work outcomes and may also drain their physical and psychological health.

Motivation Pathway

Alternatively, the motivation pathway emphasises the role of workplace resources such as supervisors' decision authority and co-worker support which help workers handle job demands and motivates them to become more engaged with their work and finally reduces the potential withdraw of employees from their efforts, or from their jobs (i.e., turnover). In line with compensatory control model —external effort to compensate the low control (Robert & Hockey, 1997), the job demands model assumes that employees are required to put supplementary effort and energy to accomplish tasks and set the job goals to consequently prevent the low performance results (Schaufeli & Taris 2014).Considering the inevitable consequences and costs of workplace demands, the JD-R model has emphasised the imperative role of job resources. Thus, working environments with higher levels of support and resources are expected to help with employees' recovery from energy depletion. Therefore, both *job demands* and *job resources* play important roles in the design of a 'safe work environment' in which JD-Rs are considered as reliable predictors of emotional exhaustion and job burnout. Similarly, numerous studies (e.g., Bakker, Demerouti & Euwema, 2005; Bakker, Demerouti & Verbeke, 2004; Jourdain & Chênevert, 2010; Wingerden, Bakker & Derks, 2016) have used the JD-R model to reveal the interplay between job demands and resources to predict job burnout.

Motivational pathway has some direct cross effects on the health erosion pathway. Cinsequently, the health erosion pathway is theorised to positively predict job burnout via demandswhile the motivation pathway is theorised to positively predict engagement via resources. Both pathways may work interactively to affect workplaces outcomes. As earlier

mentioned, job resources may reduce the perception of job demands, may reduce the impact of job demands, or beyond this may reduce the perception of emotional exhaustion. Similarly, by mitigating job demands, workplace support significantly interacts with job demands to predict job burnout (e.g., Metin, Taris, Peeters, Beek, & Van den Bosch, 2016; Wingerden, Bakker, & Derks 2016).

JD-R Theory: How the Pathways Lead to Work Engagement

Even though, the JD-R model was primarily designed to predict job burnout (e.g., Bakker et al., 2005, 2008; Demerouti et al., 2001), its relationship with some other factors like connectedness (Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007), work engagement (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Schaufeli, 2006) sickness absenteeism (e.g., Bakker, Demerouti, De Boer, & Schaufeli, 2003; Clausen, Nielsen, Gomes Carneiro, & Borg, 2012; Schaufeli, Bakker, & Van Rhenen, 2009), job performance (e.g., Bakker et al., 2008; Bakker, Demerouti, & Verbeke, 2004) and organisational commitment, job satisfaction (Bakker, Van Veldhoven, & Xanthopoulou, 2010) have been investigated so far. A few years after the introduction of JD-R model in 2001, it was revised by Schaufeli and Bakker (2004) to include work engagement (Fig. 2.1). Consequently, Schaufeli and Bakker (2004) have provided a positive-psychological aspect to the JD-R model.

Therefore, the JD-R model including work engagement and burnout were considered as the mediators of job demands and health issues relationships, and job resources and intention to leave, respectively (Schaufeli & Bakker, 2004). Specifically, the revised model not only clarifies the negative psychological aspects like burnout, but also addresses the positive psychological aspects like work engagement.

Work engagement refers to a positive, satisfying, work-related state of mind that comprises three main elements — vigour or bursting with energy; dedication job inspiration; and absorption or immersed by job (Schaufeli, Bakker, & Salanova, 2006). Accordingly, vigour is characterised as being highly energetic and psychologically flexible at work. Dedication provides a sense of passion and challenge and finally, absorption is referred to as a situation where employees are favourably engrossed in the job.

Consequently, work engagement is expected to mediate the relationship between job resources and work outcomes (Schaufeli & Taris, 2014). During the last 15 years, many investigations have been conducted on the job demands–resources (JD-R) model which are still progressively increasing in different countries (e.g., Bakker, 2011; Bakker & Demerouti, 2014; Law, Dollard, Tuckey, & Dormann, 2011; van Woerkom, Bakker, & Nishii, 2016).

Research Evidence on JD-R Model

There is a growing body of literature that recognises the importance of work stress. Since the JD-R model was introduced in 2000, job demands and resources have been the center of attention in a wide range of studies based on the health erosion and/or motivational pathways (e.g., Bakker, Demerouti, & Euwema, 2005; Hakanen et al., 2006; Law, Dollard, Tuckey, & Dormann, 2011). Empirical studies have provided consistent evidence that wide range of job demands (e.g., physical, psychological and emotional demands) trigger the health erosion pathway that consequently results in psychological health issues, such as emotional exhaustion and psychological distress (e.g., Bakker, Demerouti, & Euwema, 2005; Hakanen et al., 2006; Law, Dollard, Tuckey, & Dormann, 2011). Howevr, it has been found that psychological health and motivation can manage the job demands levels (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Cross-sectional studies (e.g., Grau-Alberola, Gil-Monte, García-Juesas, & Figueiredo-Ferraz, 2010; Hansen, Sverke, & Näswall, 2009; Santos, Chambel, & Castanheira, 2016) have validated the JD-R model and pathways to predict work and health outcomes in public and private health care industries especially in hospital nurses. Several investigations have found significant interaction effects existed between job demands and resources at the individual level. While no unexpected significant interaction effects were found, around 60 % of the potential interactions confirmed the direction of the interactions hypothesised (Bakker, Demerouti, & Euwema, 2005; Bakker, Schaufeli, Leiter, & Taris, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Accordingly, the research evidence (Bakker, Demerouti, & Schaufeli, 2003; Bakker & Demerouti, 2014, 2016b) on the JD-R model has supported both pathways to employees' health and wellbeing. It has been shown that the JD-R model can predict significant organisational outcomes (Bakker, Demerouti, & Schaufeli, 2003; Bakker & Demerouti, 2014, 2016b). Based on the JD-R model's basic assumptions, research findings have confirmed that job demands and job resources establish two alternative psychological routes which ultimately affect the organisational outcomes (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Van Rhenen, 2009). Therefore, in working conditions with high level of demands and low level of resources, higher levels of poor psychological health are expected to be accompanied by lower levels of motivation. Similarly, significant effects of job resources on reducing cynicism are found when employees were struggling with high levels of job demands (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003).

The low job demands and high job resources conditions are considered as the optimal situation of low job strain and also high motivation at organisations. Regarding the buffering effects of job resources, investigations support the anticipated interaction effects between job

demands and job resources that are associated to employees' health and well-being (e.g., Bakker, Demerouti, & Euwema, 2005; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). These interaction effects were found in an extensive study (Bakker, Van Veldhoven, & Xanthopoulou, 2010) on job resources (e.g., skill utilisation, autonomy, decision making, learning opportunities, and colleague support) and job demands (workload and emotional demands) at the organisational level that under conditions of high demands and resources, higher task enjoyment and commitment were anticipated (Bakker, Van Veldhoven, & Xanthopoulou, 2010).

The JD-R model expects that the relationship between job demands and individual health, safety and well-being is mediated by suffering from job burnout when workplace resources are reduced.

According to effort-recovery theory (Meijman, Mulder, Drenth, & Thierry, 1998), workplaces that provide many resources cultivate employees' enthusiasm to dedicate their hard work and abilities for getting the job done. Consequently, job resources initiating the enthusiasm to devote compensatory efforts play an important role in extrinsic motivational pathway. In that way, job demands decreased and goal accomplishment nurtured; specifically, job resources are influential in attaining work goals. Nevertheless, they also play a fundamental motivational role, since they gratify basic human needs for relatedness, autonomy, and competence (Deci & Ryan, 2000; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008).

This distinction has been further exemplified in studies that indicated learning may be promoted by the individuals' feedback (Crawford, LePine, & Rich, 2010; Halbesleben, 2010; Nahrgang, Morgeson, & Hofmann, 2011). It may also increase the employees' competency at work, while decision autonomy and social support gratify the needs for workplace autonomy

and relatedness, respectively. In both circumstances job resources motivate a satisfying, positive state of mind which is related to work outcomes like engagement, either through the satisfaction of basic needs or the achievement of work goals. Consecutively, this affective-motivational state promotes positive organisational outcomes, such as job performance and organisational commitment.Therefore, a considerable amount of studies have been published on the JD-R model in relation to to other work outcomes such as job performance which may be perceived as an inevitable outcome of job burnout and emotional exhaustion (Schaufeli & Taris, 2014).

Bakker et al. (2004) found that cynicism and emotional exhaustion are related to extra-role and in-role job performance. Similarly, Bakker, Van Emmerrik, and Van Riet (2008) showed the team level performance could be also predicted by cynicism.

In conclusion, the majority of studies published on the JD-R model did not either test or demonstrate such interaction effects, implying that the practical significance of these interaction effects – if they exist – is generally small. Overall, these growing studies, new perspectives and meta-analysis investigations (Crawford, LePine, & Rich, 2010; Halbesleben, 2010; Nahrgang, Morgeson, & Hofmann, 2011) highlighted the need to consider the JD-R model as a new organisational theory based on strong built upon prior theories such as Job Demand–Control (JD-C) model. Job Demand–Control (JD–C) model (Karasek, 1979) is one of the earlier theories on work-related stress which has been mainly emphasised to construct the JD-R theory.

Job Demand-Control (JD-C) Model

The Job Demand-Control (JD-C) model was primarily proposed to describe and explain how psychological distress occurs at work (Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010). A fundamental assumption in the JD-C model (Karasek, 1979; Karasek & Theorell, 1990) is

that the health (including psychological health) of workers may be understood by considering the way the work is designed in terms of levels of demands and control (Bakker & Demerouti 2014). According to the JD-C model (Karasek 1979), the level of demands and control classify jobs into different levels of job strain (a specific term used by Karasek). Job positions are categorised by the extent of demands, such as workload, working hard, intensive tasks and time pressure, and also the extent of employees' control within the job through job authority and skill discretion. According to the JDC model, job demands and control interaction give rise to four possible situations; a) *low-strain jobs* that consist of jobs with lower levels of demands and also higher employee control over workplace issues and decisions, b) *passive jobs* with lower level of demands and lower employee control, c) *active jobs* that comprise higher levels of demands and also higher levels of employee control, and d) *high-strain jobs* that consist of higher levels of demands and lower levels of control. Based on the relationships between job demands and control and outcomes like employees' well-being, the JD-C model suggests two main hypothesises; the *strain hypothesis* and the *active learning hypothesis*.

According to the *strain hypothesis*, the JD-C model proposes that working situations with high demands are expected to result in reduced health, whereas job control is positively associated with health. Moreover, a combination of low job control and high job demands (known as high-strain) typifies a work situation likely to create the highest levels of job strain (Häusser, Schulz-Hardt, & Mojzisch, 2014).

The JD-C theory proposes the *active learning hypothesis* that advocates that "active jobs" are the ideal jobs. The active learning hypothesis proposes that high job demands and high control will create high job satisfaction, self-motivated learning, and individual development at work via the possibility to develop and utilise new skills. Even though jobs may be highly demanding, workers who have adequate decision authority and discretion to

utilise their skills (i.e., to problem solve) will flourish (make the best action out of existing energy) (Figure 2.2).

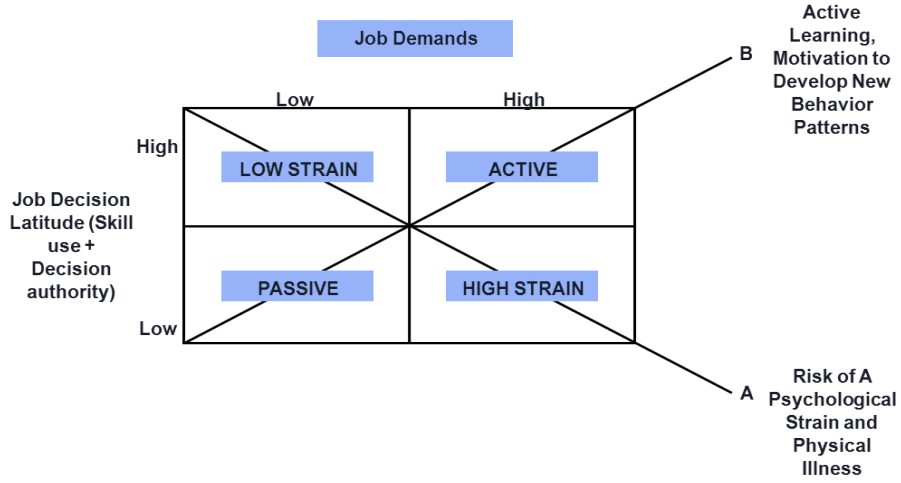


Figure 2.2 Job Demand-Control (JD-C) Model

Research Evidence on JD-C model

Studies have attempted to explain the interaction effects of job demand and job control as proposed in the JD-C job strain hypothesis; however tests have received mixed empirical support (Bakker & Demerouti, 2014; De Lange, Taris, Kompier, Houtman, & Bongers, 2003; Van der Doef & Maes, 1999). Revisiting a meta-analysis of 64 studies on JD-C conducted by Van der Doef and Maes (1999), Taris (2006) resported that only 10 percent (9 out of 90) of the examinations supported the interactions hypothesis between job demands and control. This lack of evidence has been attributed by scholars (e.g., Carayon, 1994; Jonge, Janseen, & Van Breukelen, 1996; Taris, Kompier, De Lange, Schaufeli, & Schreurs, 2003) to limitations related to conceptual issues of JD-C model and methodological issues (Bakker & Demerouti, 2014).

There is evidence for the main effects of job control. In a study conducted by Jimmieson, Hobman, Tucker, and Bordia (2016), it was shown that insufficient job control

results in higher levels of psychological distress, sleep troubles, and stress-remedial intentions in workers. Low job control was also found to be related to more negative outcomes, like emotional exhaustion and lack of job satisfaction. Similarly, the negative association between work-related stress and self-employment was found to be fully mediated by the job control (Hessels, Rietveld, & van der Zwan, 2017). Accordingly, job control depends on the changes occur over time that might be linked to employees' outcome. Therefore, increasing the job control would be aimed as a prevention and intervention role for the work-related stress (Mauno, Mäkikangas, & Kinnunen, 2016).

By utilising data set existed from a longitudinal investigation on AWB, Bailey et al. (2015b) have assessed job strain antecedents and consequences through the lens of JD-C model to discover the workplace stress. As earlier mentioned, JD-C model (Karasek 1979) classified jobs by the levels of demands like workload, density and time pressure and the amount of control on the position trough job authority, organisational support and skill discretion. Therefore, the interaction of job demands and job controls came up with four potential work situations a) low-strain jobs, b) passive jobs, c) active jobs, and, d) high-strain jobs (Ahola et al. 2006; Lerner et al. 1994; Häusser et al. 2010; Karasek 1979).

Experimental studies (Searle, Bright, and Bochner, 2001) have found mixed support for the JD-C active learning hypotheses. They have found that high demand jobs having high levels of workers' controls positively influenced performance in mail sorting tasks. Likewise, using a mental mathematics accuracy task, Flynn and James (2009) found that high control played a buffering role against the negative impact of job demands on accuracy. Consistently, Hockey and Earle (2006) have tested the main effects of demands and found that in high demands working environments the level of accuracy was reduced in office simulation.

High level of job demands was found (Jimmieson & Terry, 1998; O'Brien, Terry, & Jimmieson, 2008) to negatively affect the quantifiable productivity in a secondary task (editing). Investigations (e.g., Jimmieson & Terry, 1998; O'Brien, Terry, & Jimmieson, 2008) have confirmed the buffering impact of high control on job demands in working designs. Correspondingly, high demands situations have been found to negatively predict the quantifiable performance. To some extent, these studies were limited by the less time given in high demands conditions to be completed comparing with low-demands working environments. Accordingly, employees with constant low job control reported more emotional exhaustion (Jimmieson & Terry, 1998; O'Brien, Terry, & Jimmieson, 2008).

The Effort–Reward Imbalance Model

A generally accepted definition of ERI model considers efforts and rewards as two main psychosocial aspects of working environments. However, some components at the individual level like over-commitment are also emphasised. Over commitment as a personal aspect of this theory, is referred to as "a set of attitudes, behaviors and emotions reflecting excessive striving in combination with a strong desire of being approved and esteemed" (Bakker & Demerouti, 2007, p.310).

The construct of ERI model first articulated by Siegrist (1996), is now well-established in organisational studies. The Effort–Reward Imbalance (ERI) model (Siegrist, Klein, & Voigt, 1996) claims that "failed reciprocity in terms of high efforts spent and low rewards received likely to elicit recurrent negative emotions and sustained stress responses in exposed people. Conversely, positive emotions evoked by appropriate social rewards promote well-being, health and survival" (Siegrist, 1996, p.2). Compared to the JD-C model, the ERI model highlights the important role of workplace reward rather than the employees' control and the authority structure at work (Siegrist, 1996). In ERI work stress theory, rewards refers

to salary, esteem, and job opportunities including job promotion, consistency and security for external job demands/ obligations and inherent motivation (over commitment) (Siegrist, 1996) (see Figure 2.3).

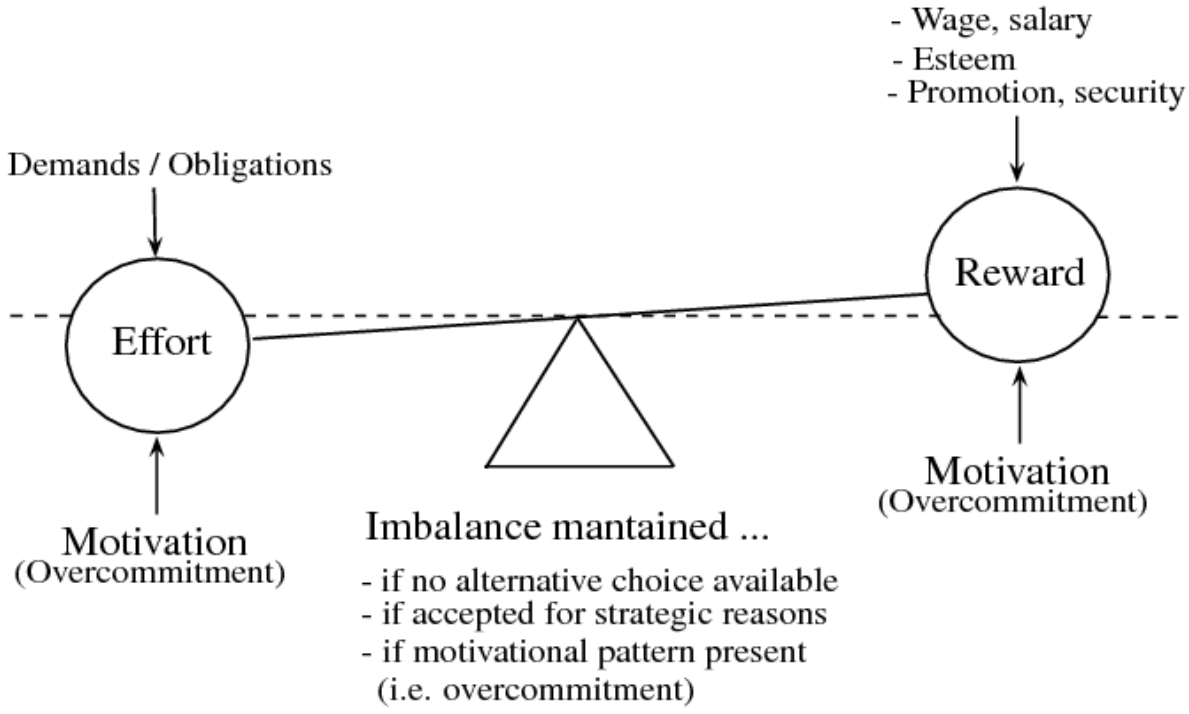


Figure 2.3 The Effort–Reward Imbalance Model

The basic assumption of the ERI model is that job stress occurs in working environments with high levels of effort and low levels of reward when there is a lack of exchange between job effort and reward (Siegrist, Klein, & Voigt, 1996). Based on this theory, personality is expected to further affect the quality of the interaction between effort and reward.

Globally, in the context of the current changes on workplace health and safety, the workplace rewards have become the salient components. Recently, huge changes like globalisation, fast growing technologies, economic recession and amplified flexibility of working environments have been occurred (Dollard 2007; Siegrist 2008). These changes as

well as intensified job market and competition, have pressured organisations to downsize and restructure work designs. These recent changes are mostly recognised with increased work load and time spent (overemployment), underutilisation of employees due to reliance upon equipment and technologies (underemployment) and low job security (Dollard 2007; Dollard et al. 2014).

In working environments with the changes mentioned and macro-level impacts like economic globalisation, workers who require the labour market (Kawakami, Park, Dollard, & Dai, 2014), may be visibly motivated to continue working in high effort conditions. ERI model also addresses the job rewards (e.g., job security and career promotion), which are the significant and relevant components of insecurity of labour market in the Australaian working context (Owen et al., 2016). Accordingly, the negative impacts of workplace psychosocial risk factors on various health and work outcomes are commonly illustrated in the ERI model to provide a better understanding of working conditions.

ERI theory proposes that a relationship exists between employees' health and wellbeing and effort–reward imbalance at work that could be moderated by over commitment (Bakker & Demerouti, 2014). Evidence for this moderating pattern has been reported (e.g., De Jonge, Bosma, Peter, & Siegrist, 2000).

In line with the fundamental imbalance hypothesis of the ERI Model, high effort and low reward at work, have been found to be a risk factor for cardiovascular health, subjective health, mild psychiatric disorders, and burnout (Siegrist, 2008; Tsutsumi & Kawakami, 2004).

In conclusion, the shared assumption of all the work stress theories above mentioned is that the stressful situations consist of high demands (efforts) and low resources (such as support, reward and control) that potentially result in undesirable outcomes at both individual

(e.g., psychological and physical health) and organisational (low work engagement and compensation) levels. However, in contrast with the Job Demand–Control model, the ERI model introduces a personal component – overcommitment (Bakker & Demerouti, 2014).

The most well-known work-stress theories like the Job Demand–Resources model (Demerouti et al., 2001), the Job Demand–Control model (Karasek, 1979) and Effort–Reward Imbalance model (Siegrist, 1996) have been shown to be highly influential in knowledge development in the area and in understanding of how work factors affect health and motivation at work. A common thread through the models is that adequate job resources may reduce otherwise negative impacts of high job demands. In working environments with higher levels of job resources, employees may be empowered by the energy aroused to have higher resilience and control over the job demands that consequently may have otherwise contributed to health and work outcomes (Dollard, Tuckey, & Dormann, 2012).

The question however, "where does the job design come from?" has not been adequately addressed by the prevailing work stress theories. Since PSC is proposed to predict working conditions, the theoretical basis of the PSC model could be as an upstream predictor of Job Demands-Resources theory (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001) which is grounded on earlier organisational models such as the Job Demand-Control model (Karasek, 1979) and Effort–Reward Imbalance model (Siegrist, Klein, & Voigt, 1996). The process of interaction between job demands and resources (e.g., Bakker et al., 2005; Xanthopoulou et al., 2007) may be helpful to demonstrate the process via which PSC relates to worker health and motivation.

Psychosocial Safety Climate Model

PSC as a new facet of organisational climate concept aims at psychological health in working environments. Indeed, theoretical and practical gaps existed have provided sufficient reasons for Dollard and Bakker to introduce psychosocial safety climate (PSC) model as a parallel concept that focuses on safety climate in terms of psychosocial health and issues. The PSC theory deals with work stress and employees' psychological health (Owen et al., 2016; Opie et al., 2012). PSC theory proposes that PSC knowledge can predict job design factors (Dollard & McTernan, 2011). The job design literature suggests that job design is created by higher level initiatives, mainly from leadership and organisational culture (Dollard & McTernan, 2011). Recently, Clark (2015) argued that job characteristics are not a feature as per se, but they are designed under the direction of management. Therefore, when PSC is high, psychosocial risk factors at work can be prevented.

Since PSC precedes job design, it is likely to predict the level of psychological health problems such as psychological distress and emotional exhaustion via its relationship with job demands, and work engagement through its relationships with resources (Figure. 2.4). Consequently, PSC is a main upstream factor to target for the prevention of work stress (Dollard & Bakker, 2010). PSC as an antecedent of the job demands and resources articulated in JD-R model to prevent the development of high levels of job demands and insufficient job resources in managerial and organisational conditions.

By focusing on the health (e.g., PSC → job demands → health issues) and the motivation pathways (e.g., PSC → job resources → work engagement) (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), PSC extends Job Demands-Resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), which is built on earlier work stress theories including Job Demand-Control model (Karasek, 1979). As mentioned earllier in JD-

R model, the health erosion pathway describes the negative effects of excessive job demands leading to poor psychological health and well-being while the motivational pathway focuses on the role of high levels of workplace resources that improve work engagement.

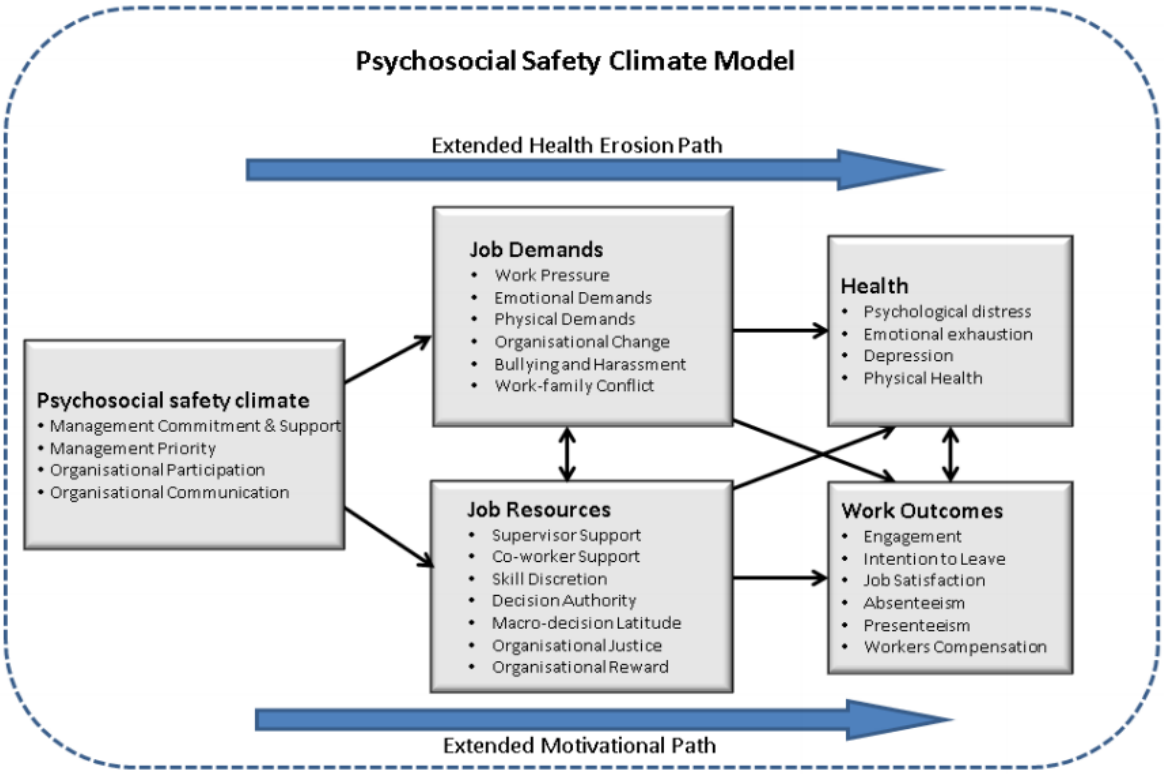


Figure 2.4 Psychosocial Safety Climate Model

PSC as a predictor of ERI Theory

Turning to the experimental evidence on the ERI model indicates that PSC can be considered as one of the upstream concept which provides a better understanding of workplace designs according to ERI model which suggests a possible robust link exists between PSC and ERI. Indeed, PSC may develop balanced working environments in terms of efforts and rewards.

Owen et al. (2016) conducted a multilevel investigation on PSC extending ERI model — PSC was conceived as an upstream factor affecting outcomes over and above the effects of the ERI model (the effects of efforts and rewards). They found that in high PSC situations

at both organisational and individual levels (considered simultaneously), that employees reported lower levels of imbalance of workplace efforts and rewards (ERI). The individual level of PSC affected employees' physical and psychological health and motivational outcomes through the ERI model.

Work engagement and satisfaction were found to be indirectly influenced by organisational ERI and especially job rewards. Accordingly, PSC as an upstreaming factor in job designs could also signify an important role in predicting ERI. In terms of physical and psychological health, negative moderating effects of PSC were found via job demands (efforts). In conclusion, PSC as a supportive working climate could be rewarding to employees which consequently has a negative impact on job efforts (demands).

Research Evidence on PSC

Strong evidence shows that high PSC is related to psychological health in working condition dealing with the high levels of productivity at performance levels that have been objectively assessed (Bond, Flaxman, & Loivette, 2006). Robust evidence depicted PSC as a cross-cultural phenomenon resulted from research findings achieved in different country and cultures (mainly Australia and Malaysia). The findings showed that PSC has a key role as a psychosocial indicator of hazards, psychological health and well-being within the working environments (Idris, Dollard, & Winefield, 2011).

According to PSC research conducted, PSC level is high when managers concern about employees' psychological and physical health and well-being (Dollard & McTernan, 2011). Future studies on the Psychosocial Safety Climate will recommend a new assumption which considers PSC as the 'cause of the causes' for the majority of workplace psychosocial risk factors (Law et al., 2011), e.g. work design, organisation and management and the environmental and social contexts, which may potentially cause the psychosocial or physical

injuries (Cox et al., 2000). Accordingly, Psychosocial Safety Climate is caused by the job demands to predict the work stress consequences.

Despite the fact that the negative effects of work-related stress and risk factors are now well- identified and documented (e.g. Bakker et al., 2000; Bakker & Leiter, 2010; Demerouti et al., 2001b; Dollard & Bakker, 2010; González-Romá, Schaufeli, Bakker, & Lloret, 2006), little is known about how organisations contribute to the levels of stress, and how stress levels can be lowered. PSC studies conducted so far (e.g., Dollard, Bailey, McLinton, & Richards, 2012a; Dollard & Bakker, 2010; Dollard, Tuckey, & Dormann, 2012b; Idris & Dollard, 2011; Law et al., 2011; Tuckey, Winwood, & Dollard, 2012) have revealed that variability of employees' scores has been neglected by considering the mean of groups only. Usually the variability of employees' scores (strength) or unexplained within-group variance have been attributed to measurement errors (Kozlowski & Klein, 2000); however it might represent a significant construct at higher levels even though this is rarely considered in multilevel studies (Cole, Bedeian, Hirschfeld, & Vogel, 2011; Harrison & Klein, 2007).

The majority of PSC investigations conducted so far have computed PSC mean level based on the aggregatin of individual scores at team and organisational levels. In the same direction with the previous research studies,the current thesis focuses on the importance of within-group agreements on the PSC perception as a new variable of interest which has been known as climate strength in recent organisational studies.

DeRue et al. (2010) have indicated that similar work groups mean might be dissimilar in dispersion and variability of perception of workplace issues. In high dispersion, new perceptions such as new shared expectations, procedures, communications and job status will probably be created by workers (Earley & Mosakowski, 2000). Hence, employees'

agreements on climate known as climate strength might also be imperative for the organisational climate studies that emphasise on the association of the climate with workplace issues like psychosocial risk factors and work-related stress that predict the individual and organisational outcomes (e.g., Bakker, Killmer, Siegrist, & Schaufeli, 2000; Bakker & Leiter, 2010; Demerouti et al., 2001b; Dollard & Bakker, 2010; González-Romá, Schaufeli, Bakker, & Lloret, 2006).

The studies conducted on PSC in private and public organisations (e.g., Dollard et al., 2012a; Dollard & Bakker, 2010; Dollard et al., 2012b; Idris & Dollard, 2011) it was revealed that PSC was related to job demands negatively while its relationship with job resources was positive. In an empirical survey on PSC among Australian nurses from 48 work groups, which was measured at two different times (Time 1, N = 202; Time 2, N = 163), it was found that the workers' unit classification was responsible for around 24% of the variance in PSC, which indicated that at the team-level, supervisors created variation in PSC. Research has revealed that PSC affected well-being and occupational outputs in working situations (Dollard et al., 2014). In a longitudinal study on Australian education employees, (Time 1, N = 209; Time 2, N = 288) regarding work engagement and outcomes (health and productivity), the relationship between PSC and job resources has been measured two times with a 12 month interval. The results showed that PSC level could predict the work engagement and psychosocial risk factors like emotional exhaustion and psychological distress through its relationships with job demands such as emotional demands and work pressure (Dollard and Bakker 2010).

In agreement with the previous study and to support the main principles of PSC, in a more comprehensive research, the same results have been heavily emphasised (Dollard et al. 2012). This study provides a framework to investigate and compare PSC in western and eastern contexts. Similarly, in a study comparing between Australia and Malaysia, Idris

Dollard, Coward, & Doemann (2012) an existing negative relationships were found between PSC, job demand and psychological risk factors. Moreover, the physical and psychosocial safety climate has been found to be stronger in Australian population compared to Malaysian context; however in both contexts physical safety climate were considerably higher than psychosocial safety climate (Idris et al., 2012).

It has been found that with the high levels of PSC, the positive relationship between emotional demands and workplace distress is moderated by high emotional resources (Dollard et al., 2012b; Law et al., 2011). On the same page with the previous studies, the employees' scores aggregated have been used to compute climate without considering the importance of PSC strength.

Accordingly, Garrick et al. (2014) conducted a multilevel investigation of PSC model on Australian schools. This study indicated the moderating role of PSC existed between the job demands and fatigue relationships, along with the same moderating effects between job demands and work engagement. Multiple regression analysis revealed that PSC could perform as a barrier against the harmful impacts of regular demands at work. Moreover, a moderating effect of PSC was also found in relations existed between recovery, fatigue, and work engagement. Therefore, the higher levels of PSC perceived, the more intensified the school teachers could get from the profits of daily recovery (Garrick et al., 2014).

In a multilevel longitudinal investigation (Idris and Dollard, 2014), PSC cross-level effects (Time (T) 1) were found on emotional demands and emotional exhaustion (T2); however PSC (T1) could not regress on depression (T2). Evidence indicated that there were lagged mediating effects of PSC; the relationship between PSC and emotional exhaustion mediated by emotional demands. Nevertheless, depression could be predicted by emotional exhaustion (Idris and Dollard, 2014). This finding supported Dollard and Neser (2013) who

have found that PSC was the most significant contributing factor of worker health regarding the national differences and also suggests that PSC construct is a significant specific-facet organisational climate.

Idris, Dollard and Tuckey (2015) have investigated PSC at the team level as a predictor of job design and outcomes. They have found that PSC can positively predict the work engagement trough the mediating effects of learning opportunities; however, work engagement was found to play an important moderating role in the relationships existed between PSC and job performance (Idris, Dollard, & Tuckey, 2015). Another multilevel study of PSC at the team level utilised a sample of 909 police staffs from 58 sections (Idris & Dollard, 2014). It has been recognised that the team level PSC was negatively associated with hindrance demands. Indeed, they scrutinised how PSC team level influences on the demands like hindrance demands and challenge demands (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Hindrance demands (e.g., role conflict and low job security) were measured as job demands that might be perceived as dangerous to personal growth and authority while challenge demands (e.g., high amount of work and complexity) refer to the demands perceived that can not only lead to personal growth but also employees' creativity at work and innovative performance (LePine, Podsakoff, & LePine, 2005).

A systematic review (Idris & Dollard, 2016) on psychosocial safety climate concluded that PSC had direct and moderating effects (rather than being a mediator) on work-related stress. PSC was mainly related to psychological health as a facet-specific climate having explicit effects.

Comparing PSC at the team level in hospitals in two different contexts, Iran and Australia, Afsharian, Zadow, and Dollard (2016) have revealed that not only PSC could be

considered as an international theory of organisational climate but also it can significantly predict the job design and outcomes (see Chapter 6).

Accordingly, it has been found that PSC significantly predicts the job strain and depression among Australian workers (N = 1081) followed by a bigger cross sectional data analysis of AWB (N = 2097 and (N = 1043) to create benchmarks for PSC range (12-60) as an organisational tool. Similarly, Bailey et al. (2015b) could formulate high PSC scores (41 or above) into low risk positions, medium PSC (37-41) into moderate job strain and low PSC (37 0r less) into high strain positions which also might be the indication of depression symptoms (Bailey et al, 2015b). Using the recently shaped benchmarks, the Population Attributable Risk (PAR) indicated that increasing PSC above 37 in Australian working environments might decrease 16% of employees' depressive symptoms and 14% of job strain (Bailey et al. 2015b). These national standards provided suggest that organisations and supervisory agencies can utilise PSC in order to uphold workplace health and safety and reduce the risk of illness or work-related injuries.

Winwood, Stevens, and Bowden (2015) have investigated the role of PSC in stress and workplace injuries. They have found that Low PSC was related to some negative risk factors like workplace bullying, absenteeism, turnover and commitment in Australian aged care industry. Moreover, higher levels of PSC were found to be related to less work-related injuries (frequency, duration and compensation coasts). Therefore, the role of PSC has been agreed in increasing the employees' efficiency and profitability and in decreasing the psychosocial risk factors (Winwood, Stevens, & Bowden 2015).

Regarding the importance of workplaces risk factors like bullying, Kwan, Tuckey, and Dollard (2016), have found that workers have a tendency to express more about the work occurrences in situations with higher levels of PSC. Therefore, it may immediately control

the work place issues by undertaking bullying. In low PSC situations, a tendency to neglect or accept bullying as a part of the position before leaving the organisation was found because of the unsolved bullying. These results highlight the impacts of PSC as an organisational climate to determine the existing coping strategies against bullying at work and the success of workplace health and safety expected. Moreover, one of the recent PSC studies found the same so that results in low level PSC working environments, employees had significantly higher levels of absenteesim (sickness absence) and presenteeism compared to working environments with higher PSC level (Becher & Dollard 2016).

Psychosocial Safety Climate Strength

Psychosocial Safety Climate Strength refers to the amount of agreements and consistency exist in employees' perceptions of the policies, procedures, and practices concerning safety at work within a team level (Beus, Bergman, & Payne, 2010; González-Romá, Fortes-Ferreira, & Peiró, 2009; Schneider et al., 2013; Sowinski, Fortmann, & Lezotte, 2008).

As earlier mentioned, as a result of the intrinsic discretion in leadership roles, cross-level configuration does not globally prevent the between-group deviation within an organisation (Zohar & Luria, 2005). While a permissible border is defined by organisational policies and procedures, a steady managerial action will cause significant variation. This type of between-group dispersion identified as the climate variability which outlines a new dimenssion to look at climate as a multilevel concept. Strictly, a new variable at the organisational level (climate strength) has been operationally defined as the variance of group climate levels in individual companies (Zohar & Luria, 2005).

PSC could vary at organisational or at team level; however, it is expected that team level and organisational level safety climates are associated, and it is likely that team climate level mediates the effects of organisational safety climate on safety outputs and employees'

behaviours (Zohar & Luria, 2005). Accordingly, investigating the employees' behaviours in organisations can reveal the importance of interdependence of the level and dispersion factors.

The dispersion model (between work groups' variation rather than within group variation in climate levels) has been suggested to interpret the organisational climate in a multilevel perspective (Zohar & Luria, 2005). Subsequently, PSC might be expected to anticipate an internally stable job design.Therefore a clear indication for work priorities suggests strong conditions characterised by a restricted variability of perceptions (Zohar & Luria, 2005).

Therefore, the correlation between the aggregated mean (level) and variance (dispersion) of the climate is important to examine the amount of interdependency at individual and organisational (macro and micro) levels (Cole, Bedeian, Hirschfeld, & Vogel, 2011).

Climate strength as new concept for PSC theory

Organisational climate theory hypothesises that organisational settings have a characteristic climate which can be recognised through the substantial variance in organisational climate between groups and a significant perception of agreement within groups —indeed this is the rationale for aggregating individual statistics into group level mean (James, 1982). However, there is an alternative type of composition model (not focused on the mean) known as climate strength which has increasingly become the focus of recent climate studies. Measuring the extent of agreement in individual, group and organisational levels is reasonably a new area of research.

Climate strength plays three main roles in the relationships between climate, health and work outcomes. First, climate strength has a direct and linear effect on performance and outcomes. Second, a moderating effect exists in the relationship between climate and outcomes and third, a direct but curvilinear relationship has been assumed between climate strength and job performance (Dawson et al., 2008). Therefore, besides the above mentioned that PSC is the cause and moderator of the job demands and resources, this project will consider PSC strength or employees' variability percieving climate as a significant variable of interest. PSC strength affects the job demands and resources that will be demonstrated firstly in direct and linear effects on performance and outcomes. Secondly, it is expected that PSC strength has moderating effects on the relationship between PSC and outcomes. Finally, having a positive effect on job outcomes, it is assumed that PSC strength has a direct curvilinear correlation with outcomes and occupational performance until a certain level is achieved then it will have a negative influence (inverted U shape relationship).

Investigating the supplementary effects of climate strength within organisations is one of the applications of the climate variability. In this case, it can be contended that comprehensible, consistent and repeated pattern of strategies, practices and techniques is the origin of a strong PSC. This pattern will not only encourage the robust climate at the group-level but also moderates the variations of between-groups climate.

Research Evidence on Climate Strength

Research on climate strength suggests that the employees' perceptions may be different in various groups (Cole et al., 2011; Dawson et al., 2008; González-Romá et al., 2009; Schneider, Salvaggio, & Subirats, 2002). Therefore, in a situation with low level of ambiguity (high PSC strength), employees may perceive the events similarly and aslo have the same expectations of suitable behaviours (e.g. less bullying). Conversely, in low PSC with high

level of ambiguity, employees should not perceive similarly; therefore they might have different and inconsistent expectations of suitable behaviour.

Within organisations with high levels of PSC and high PSC strength, it is anticipated that job resources would be more likely to be utilised by workers since high level of PSC is related to lower emotional demands and work pressure (Dollard & Bakker, 2010). Job resources utilisation depends on the employees' perceptions of management activities. Therefore, this shared preceptions might create a greater implemented consistency among co-workers which also encourage a more fostering shared perspective on the degree of resources provided at their work environment.

Several studies have shown that high level of PSC moderates the negative effects of job demands on psychological health. Robust evidence for the relationship between PSC and health outcomes has also been provided by scholars (e.g., Bailey, Dollard, McLinton, & Richards, 2015; Dollard & Bailey, 2014; Idris, Dollard, & Tuckey, 2015; Kwan, Tuckey, & Dollard, 2016; Owen, Bailey, & Dollard, 2016). This relationship is likely applied through policies, practices and procedures regarding the job design (Dollard & Bakker, 2010; Law et al., 2011). Therefore, by considering the moderating role of PSC strength in explaining the relationship between PSC, job demands and resources, health and work outcomes, climate strength is important for PSC and will be the focus of this study. The interplay between climate strength and levels of PSC in predicting demands and resources and outcomes is also an aim of this project.

Psychosocial safety climate (mean level) and PSC strength (variability) respectively, which are focused in this thesis, are ways to consider both mean of employees' scores and employee's variability in perceptions of managerial concerns to protect health and safety issues at work. Therefore, the current research concerns employees' health and safety by

focusing on PSC mean and strength rather than just considering the mean of groups or organisations which is commonly used in climate studies. Additionally, it considers the role of individual perceptions of the work situation and management concerns as a new variable of interest, known as PSC strength.

How PSC strength predict JD-R, health and work outcomes

Psychosocial safety climate strength as a new variable is operationally defined by considered the average deviation of PSC at the organisational levels. Researchers have aggregated individual workers' responses to determine the climate to examine the relations between organisational climate and outcomes (Dollard & Bakker, 2010; Dollard & McTernan, 2011).

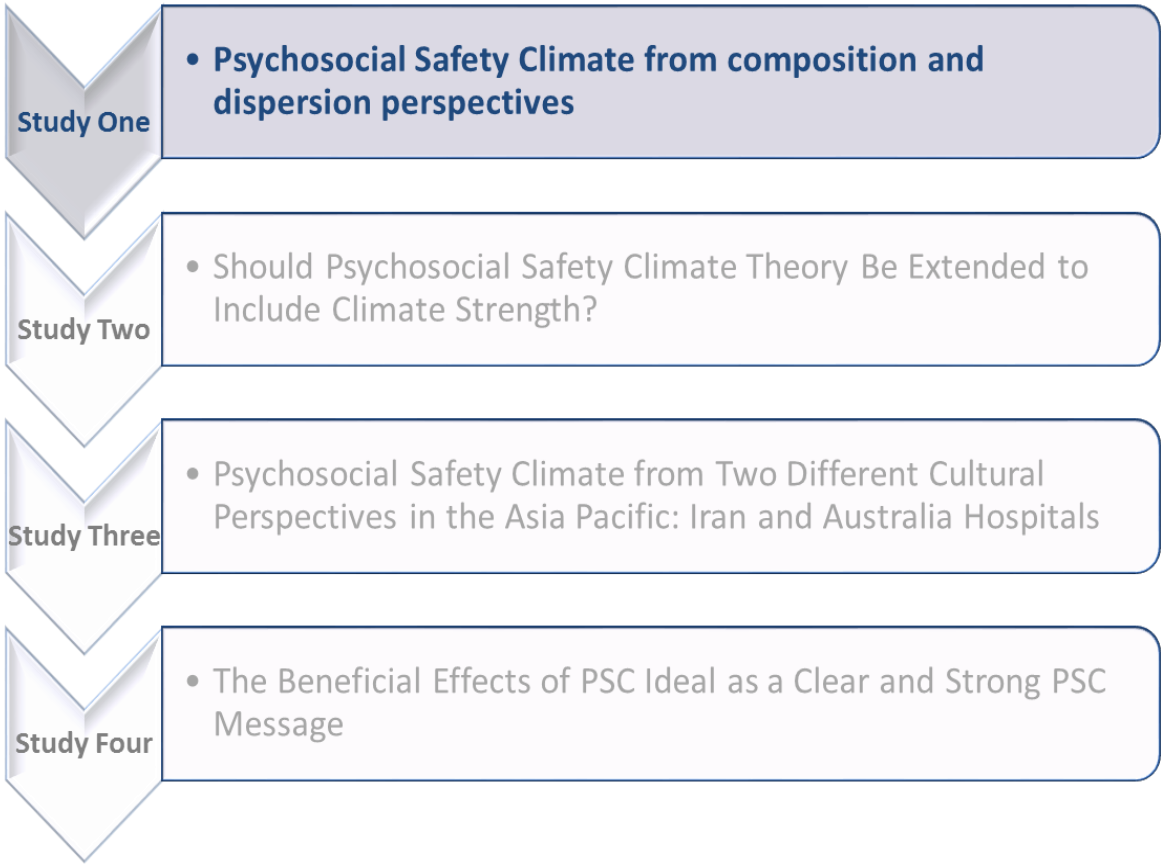
The hypothesis that organisational settings have specified climates and it can be recognised through the substantial variances in organisational climate between groups and a significant perception agreement within groups is the rationale for aggregating individual statistics into a group level (James, 1982).

This project attempts to address the gap in the organisational literature regarding the role of PSC level and PSC strength at both different levels (teams and organisations) and context (Australian and Iranian).

Chapter 3

Study One:

Psychosocial Safety Climate from Composition and Dispersion Perspectives



Abstract

Psychosocial Safety Climate, (PSC), is defined as the managerial "policies, procedures and practises" to protect and support psychological and social health at work. PSC is a beneficial set of basic elements including management priorities and commitment, organisational participations and communications related to various outcomes at micro (e.g., individual) and macro (e.g., work units and organisation) levels. While most of the PSC studies have aggregated the individual perceptions to create mean level climate, climate strength has been obviously neglected. PSC strength assumes that within group agreement (High PSC strength) moderates the PSC relationships with workplace factors and issues like psychological health and work outcomes. The interaction effect of climate strength (dispersion) on climate level (mean/composition) has been identified in majority of empirical studies. Such relationships could not be found; mostly they were limited by sample sizes and groups at the upper level. Utilising an existing data set from a longitudinal study– Australian Workplace Barometer (AWB) as a large multi-level data set collected from different states in Australia, this study had a large sample size looking at PSC and PSC strength from an upper level perspective including individual perceptions nested within large organisations. Demographic information including workers' age, gender, educational level and organisations were presented. From a descriptive perspective, the research variables mean, standard deviation, alphas, ICCs and correlations were discussed in PSC model framework. Then, associations of PSC level and PSC strength with the individual-level health and work outcomes were examined at higher levels. Hypothesis testing of PSC strength, demonstrated that PSC was still a better predictor than PSC Strength of job demands, resources and psychological health and work engagement in large organisations. PSC level (organisations mean) was found to be related to outcomes like psychological distress, emotional exhaustion and work engagement. Mixed support was found for the PSC strength interaction hypothesis, and not as expected. In relation to rewards the interaction was not interpretable. When supervisor support was the outcome, it appeared that supervisors worked to provide support in situations when PSC was high, but the variability was high too (i.e., low PSC strength). Research implications, limitations and suggestions for future PSC research were discussed.

Key words: PSC Level and Strength, Job Demands and Resources, Bullying, Harassment, psychological health and work outcomes

Introduction

Exposure to high levels of job demands such as psychological, emotional, physical demands, bullying and harassment have been broadly amplified (Eurofound, 2014). Job demands have been found to be not only related to lower levels of health and well-being among employees who are targeted (e.g., Einarsen, Skogstad, Rørvik, Lande, & Nielsen, 2016; Kwan, Tuckey, & Dollard, 2016; Nielsen, Magerøy, Gjerstad, & Einarsen, 2014) but also have been highly linked with the outcomes such as job performance, efficiency and creativity (Mathisen, Einarsen, & Mykletun, 2008), higher rates of employees' absenteeism (Bailey, Dollard, & Richards, 2015; Popov, Majstorović, Matanović, Jelić, & Raković, 2016; Vignoli, Guglielmi, Bonfiglioli, & Violante, 2016), more turnover (Berthelsen, Skogstad, Lau, & Einarsen, 2011; Glambek, Skogstad, & EINARSEN, 2016) and lower levels of work engagement (Idris, Dollard, & Tuckey, 2015; Santos, Chambel, & Castanheira, 2016; Van De Voorde, Veld, & Van Veldhoven, 2016) at both individual and organisational levels. High level of job demands and occupational risk factors could be considered as serious threats to individual and organisational work outcomes (Bakker & Demerouti, 2016; Christian, Bradley, Wallace, & Burke, 2009; Dollard, Tuckey, & Dormann, 2012b). Managers should be aware of both prevention and intervention of work place psychosocial risk factors and their potential undesirable consequences.

Among the negative consequences, work stress and psychosocial risk factors having significant coasts (World Health Organization, 2015) are mostly considered to be preventable in many developed countries (Clarke & Cooper, 2000). For instance, over 20 million people have experienced health-related issues due to workplace incidents in European countries between 1999–2007 from which over 5,500 workplace accidents resulted in workers' death in 2007 (Eurofound, 2014).

Many work stress theories have been developed to identify the role of workplace designs to predict health and work outcomes (Zohar & Luria, 2005). Despite the fact that workplace bullying and harassment might be related to employees personality and individual underlying characteristics (Nielsen, Glasø, & Einarsen, 2017; Nielsen & Knardahl, 2015), the main anticipatory of such risk factors at work are job design (Parker, 2014) and the managerial policy, practice and procedure based on high level of job resources known as "organisational climate" (Alfes, Shantz, Truss, & Soane, 2013). Organisational climate deals with employees perceptions about the managerial attempts towards workplace health and safety (Schneider, Bowen, Ehrhart, & Holcombe, 2000).

Psychosocial Safety Climate

Psychosocial Safety Climate (Dollard & Karasek, 2010), as a facet-specific climate, is one of the most progressively growing theories investigating psychosocial risk factors in the light of extending Job Demands–Resources (JD-R) theory (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). This paper adds to the PSC literature in two ways as follows:

Extending the JD-R model (Bakker & Demerouti, 2007), PSC relationship with employees' psychological health and work engagement at the organisational level will be investigated in all states of Australia.

According to our knowledge, the majority of PSC studies have considered PSC level by aggregating employees' scores (mean Level PSC) while none of them have investigated the role of PSC strength or the role of individual perceptions of PSC (PSC dispersion). The current study investigates the possible interactive role of group dispersion on PSC associations with workplace factors at the organisational level.

As a broad concept, "organisational climate" was first developed in 1939 by Lewin, Lippitt, and White in the field of organisational science. This inclusive concept became a

more facet-specific concept such as ethics (Victor & Cullen, 1987, 1988), innovation (Anderson & West, 1998), justice (Naumann & Bennett, 2000), voice (Morrison, Wheeler-Smith, & Kamdar, 2011), diversity (McKay, Avery, & Morris, 2008), service (Schneider, White, & Paul, 1998), and safety climate (Zohar & Luria, 2005). "Safety climate" is a pioneer climate supporting workplace safety against risk factors and physical injuries at work. In contrast to the existing emphasise on physical injuries, scholars (e.g., Dollard & Karasek, 2010) have recently argued that the safety climate should also include the psychological and the social aspects as well as the workplace physical injuries. Psychosocial Safety Climate (PSC) has been defined as the "policies, practices, and procedures" to support and protect employees' psychological health and safety (Dollard & Bakker, 2010). Focusing on prevention strategies and specific ultimate outcomes, PSC is different from other facet-specific climate like safety climate. While PSC attempts to decrease psychosocial risk factors (Dollard and Bakker 2010), safety climate emphasises the prevention and/or reduction of possible physical hazards at work (Idris & Dollard, 2016).

In order to protect employees' psychological health and safety, psychosocial safety climate (PSC) focuses on higher level components in team and organisational contexts (Bailey et al., 2015). PSC comprises of four principles: a) management commitment — managerial support and consideration to prevent psychosocial hazards like work-related stress, b) management priority — psychological health and safety are considered equally important as other work outcomes like productivity by senior managers and supervisors, c) organisational communication — workers' discussing health and safety at work to resolve psychological issues, and d) organisational participation — employees' contribution to health and safety concerns at work at different working levels (Dollard & Bailey, 2014; Hall, Dollard, & Coward, 2010).

In a high PSC organisation, the principles and benefits of psychological health and safety at work are discussed through the managerial psychosocial communicates (Dollard & Bakker, 2010). It is expected that employees feel the management caring about their health and safety that results in job control and authority to develop new skills at work (Brown & Leigh, 1996). During the last decade, PSC studies have directly addressed how high PSC would have strong policies regarding employees' psychological health and safety at team and organisational levels. Strong communication, vigorous involvement of stress prevention at different working levels, and reasonable ways to report workplace psychosocial risk factors have developed for health and well-being (Becher & Dollard, 2016; Dollard & Bailey, 2014; Law, Dollard, Tuckey, & Dormann, 2011). In low PSC organisations, lower job resources like supervisory support, procedural justice, and also lower job rewards would be expected (Law et al., 2011).

PSC predicts working design, risk factors and outcomes through two main health and motivational pathways. In the health pathway, PSC has direct and interacting effects on job demands to reduces psychological health outcomes at work (Dollard & McTernan, 2011). PSC acts as a predictor that directly impacts the undesirable job situations which lead to poor psychological health and well-being. PSC is a cause of the cause influencing health and productivity (Dollard & Neser, 2013) reversely predicting bullying and harassment at work (Bond, Tuckey, & Dollard, 2010; Kwan et al., 2016; Law et al., 2011). In the motivational pathway, PSC directly predicts job resources and work outcomes like engagement to moderate the relationship between those job resources and work engagement (Dollard & Karasek, 2010; Idris et al., 2015; Law et al., 2011).

The existing body of research suggests that Psychosocial Safety Climate (PSC) is a significant precursor of work environment factors (e.g., Becher & Dollard, 2016; Idris & Dollard, 2016; Owen, Bailey, & Dollard, 2015). In a multilevel and longitudinal investigation

of Australian educational system, Dollard and Bakker (2010) have found that PSC, as the antecedent of work place issues, could interactively predict employees' psychological health and work engagement.

PSC moderates the relationship between emotional demands and emotional exhaustion (Dollard & Bakker, 2010). Work engagement was predicted by PSC relationship through skill discretion in the motivational pathway. The results demonstrated that the PSC concept, as a key upstream factor of work stress theory, could be considered as a reasonable intervention for stress at work (Dollard & Bakker, 2010).

Idris, Dollard, and Winefield (2011) have expanded PSC boundaries to the Malaysian private organisations and industries. The results showed that higher levels of PSC in organisations can significantly predict health outcomes like emotional exhaustion and depression.

In an investigation of PSC in Malaysia on both public and private sectors, Idris and Dollard (2011) have found that having negative relation with job demands and positive relation with job resources, PSC could predict employees' health and work engagement.

PSC is mainly determined as an upper level component (management level) instead of lower level components (employees). Indeed, PSC highlights managerial priorities for workers' psychological health and safety in organisations (Dollard and Bakker, 2010).

While the negative effects of stress and other psychosocial risk factors at work are now well-recognised and documented, little is known about how organisations contribute to levels of stress, and how diverse PSC perceptions can play important roles in moderating the PSC relationships with other workplace factors. All PSC studies conducted at the organisational level so far (e.g., Bailey et al., 2015; Dollard et al., 2012a; Dollard & Bailey, 2014; Idris & Dollard, 2016; Law et al., 2011) have exposed that the role of PSC variability has been

neglected by considering the PSC mean levels in team or organisations. The variability of climate (strength) or unexplained variance distributed within groups have been recognised as the measurement errors (Kozlowski & Klein, 2000). Even though, climate strength has been rarely measured in multi-level studies, it might signify an important concept at higher levels (Cole, Bedeian, Hirschfeld, & Vogel, 2011; Harrison & Klein, 2007). Following Law et al. (2011) in introducing PSC strength, this study expands the PSC research model to include a bigger sample (six states of Australia) to emphasise the role of climate strength.

Derivation of PSC Strength

Research on climate strength suggests that the employees' perceptions may be different in various groups (Cole et al., 2011; González-Romá, Fortes-Ferreira, & Peiro, 2009; Schneider, Salvaggio, & Subirats, 2002). In a situation with low level of ambiguity (high PSC strength) in which employees perceive events similarly, they have the same expectations of suitable behaviours (e.g., less bullying). Conversely, in low PSC with high level of ambiguity, employees do not perceive similarly; therefore, they have different and inconsistent definitions of suitable behaviours.

The multilevel scholars have been interested in workplace processes at higher levels (e.g., team and organisation) assuming a referent-shift and/or direct consensus; however, very high within-group agreement may be harmful for group level effectiveness (DeRue, Hollenbeck, Ilgen, & Feltz, 2010; Meade & Eby, 2007). The referent-shift models apply the average of evaluating other colleagues. Thus, variables at the individual levels are shaped by employees' consensus and they are conceptually different from the variables at the original level. Direct consensus takes the average of individual perception in which the consensus among the individual perceptions creates a construct of the higher levels like teams or organisations. Eventually, both models aggregate micro level scores to macro levels (Klein,

Conn, Smith, & Sorra, 2001; Stapleton, Yang, & Hancock, 2016; Van Mierlo, Vermunt, & Rutte, 2009). For instance, employees may be requested "I (direct consensus) or my colleagues (referent-shift) make a difference in this organisation" (Cole et al., 2011). To aggregate lower level scores to make a construct at the higher levels, a minimal interrater agreement (IRA) within-team and interrater reliability (IRR) consensus is expected (Bliese, 2000; LeBreton & Senter, 2007). While both models (direct and referent-shift consensus) are broadly utilised in multilevel organisational research, these compositions are mainly limited by reliance on mean (group/organisations) scores (Cole et al., 2011). For instance, the aggregated responses may go wrong to reflect the variation collective judgments at the higher levels. It may complicate the true distribution of the fundamental responses and subsequently does not deliver any meaningful evidence (Lindell & Brandt, 2000). The aggregated scores as substitutes for meso-oriented concepts may be responsible for an inadequate basis for compacting workplace issues within groups (Cole et al., 2011). Previous results strongly highlighted that the macro-level phenomena may be oversimplified by applying the mean-based indices only. Subsequently, it may also biased the result via estimations and equivocal outcomes understated (e.g., Colquitt, Noe, & Jackson, 2002; Dineen, Noe, Shaw, Duffy, & Wiethoff, 2007).

Mean-based methods are also criticised for judging groups only with the minimal dispersion that means a high within-group agreement is suitable for multilevel investigations. Studies on workplace phenomena at the higher levels mainly simplify the groups with high-agreement only; specifically, work groups in which individual members are grounded on scores, have an adequate level of agreement to rationalise aggregating process (Quigley, Tekleab, & Tesluk, 2007; van Mierlo et al., 2009). Other significant critical aspect assumes that workplace concepts are inevitably recognised in a relatively equivalent approach (Mathieu, Maynard, Rapp, & Gilson, 2008). It is expected that employees in the same groups

perceive work phenomena in similar manners. Therefore, valuable insights may have been delivered by speculating unpacked variance existing at the higher level of organisations. Multilevel studies have rarely utilised dispersion-composition models (Cole et al., 2011). Thus, this research provides a framework for the exploration of PSC based on dispersion-composition models (mean and variance of PSC at the organisational level). The aim of this study is to investigate PSC mean level and strength (SD) to demonstrate the role of individual perception of PSC among organisation' members. In the current context, PSC level refers to employees' aggregated PSC responses at the organisational level while PSC strength (dispersion) is referred to the variability of PSC evaluations by employees or the lack of within-group agreement on the PSC perceptions.

Determining PSC Consensus

Organisational climate studies (Chaudhary, Rangnekar, & Barua, 2014; Cole et al., 2011; James, Demaree, & Wolf, 1993; Lindell & Brandt, 2000) have extensively argued how to measure climate consensus (or perception dispersion) to introduce a suitable index for climate strength. Different methods (e.g., averaging Euclidean and Mahalanobis rating distances, averaging percentage agreement, mean of Pearson correlation, and other correlation coefficients (e.g., Cohen's r_c and Cattell's r_p) between employees' response profiles) have been introduced by climate strength investigations so far (James, Demaree, & Wolf, 1984).

Even though, scholars have supported dispersion indices, they are still being criticised by some organisational researchers (Lindell & Brandt, 2000). Standard deviation (SD) (Schmidt & Hunter, 1989), interrater agreement indices (r_{wg}, r^*_{wg}, a_{wg}) (James, Demaree, & Wolf, 1993; Roberson et al., 2007), the coefficient of variation (Harrison & Sin, 2006), the intra-class correlation coefficient (ICC), the correlation ratio (η^2) and average deviation (AD_M) (González-Romá et al., 2009) are considered as the most common dispersion indices. The

intra-class correlation coefficient (ICC), the correlation ratio (η^2) compare between and within group variance to measure consensus on the climate perceptions. Recent studies (e.g., Cole et al., 2011) have mainly emphasised the standard deviation (SD) as an index of climate strength. Many climate studies have applied dispersion indices grounded on components of analysis of variance (ANOVA) to measure the climate consensus at the higher levels (Lindell & Brandt, 2000). Systematic range of restriction or limited sample size can disturb the correlations estimated between predecessor (climate level and consensus) and individual and organisational outcomes. The correlations between organisational climate level and strength with the other variables estimated are important to be clarified (Lindell & Brandt, 2000).

Scholars (e.g., LeBreton & Senter, 2007) believe that standard deviation can better operationalise a dispersion composition model (Chan, 1998) compared to substitute measures like interrater agreement (r_{wg}) and average deviation (AD). Within group diversity is supposed to be an indicative of within group differences in beliefs, attitudes, perceptions, ethics, or locus (Harrison & Klein, 2007). Due to its symmetric nature, SD, as one of the most important and common diversity indexes, is utilised for the current study to measure PSC strength as the standard deviation of employees' PSC scores within each organisation.

The nature of standard deviation is grounded on within group diversity and variation. Therefore, Instead of climate strength, it is a degree of climate weakness. Bliese and Britt (2001) suggested to multiply SD by −1 before data analysis so that higher scores designate climate strength. Previous investigations found that climate level was significantly correlated with strength (e.g., Cole et al., 2011; González-Romá et al., 2009). PSC level was examined and controlled for PSC strength predictions. As SD, PSC strength conceptualisation would be in the same line with the social categorisation perspective and the similarity-attraction paradigm which suggests high variability of within work groups can negatively impact the team level outcomes (Van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998).

PSC Level × PSC Strength Interactions

Following Dineen (2007), this multilevel study uses a combination of direct consensus composition and dispersion-composition models to test the cross level effects. Such applications consist of discovering potential interactions. Climate level (mean) interaction with climate strength (SD) is implicitly required to be specified as a new dispersion variable (Harrison & Klein, 2007).

Study Design

Participants and Procedure

This study had a cross-sectional approach toward a longitudinal ongoing study of Australian Workplace Barometer (Dollard et al., 2012). The existing data were collected by telephone interviews with a list of participants (18 years old and over) randomly selected from Australian White book. The original data collected from Western Australia (WA) (N = 1156) and New South Wales (NSW, t1) (N = 1074) in 2009. Additional data were collected from employees working in WA (N = 804), NSW t2 (N = 725), along with participants randomly selected from South Australia (SA) (N = 1143) in 2010. Supplementary data were congregated in 2011 from the Northern Territory (NT) (N = 170), the Australian Capital Territory (ACT) (N = 255) and Tasmania (N = 416). Even though, a total number of 5743 participants were collaborating from a wide range of industries, only 1389 interviews could be nested into 305 organisations with at least 5 employees in each. Demographic characteristics demonstrated that 52.5 percent of people were working full-time and the sample involved roughly 52 percent females and 48 percent males. Regarding the multilevel and multi organisational perpose of this study, the mean organisation number was 9.4 and the standard deviation was 4.6 that were also normally distributed. Following Biemann and

Kearney (2010), the minimum of three people in each work group were considered to calculate within group diversity in organisation with a specified manager.

Participants were asked to evaluate the different aspects of their jobs (e.g., job demands, Job resources, and health and work engagement) and the managerial behaviour in terms of PSC. On average, nine members from each organisation (SD = 4.6) completed the AWB survey. Participants randomly selected from the White book were asked to answer voluntarily to survey questions. All participants were ensured about the anonymity. Ethics approval was also granted by the University of South Australia's ethics committee.

PSC model is grounded on JD-R theory to predict job demands (e.g., work place bullying, harassment and psychological demands), job resources (organisational justice, organisational rewards and supervisor support) that could also be linked to psychological distress, emotional exhaustion (via the health pathway) and work engagement (through the motivational pathway) (see Figure 3.1). Even though, the main idea of PSC level was previously examined in a smaller sample by Law et al. (2011), this is one of the first PSC studies to include both PSC level and PSC strength in the large sample including Australian organisations. A multi-level and a multi-group study will expand the PSC model considering mean level and /or dispersion effects to investigate workplace issues and psychosocial risk factors.

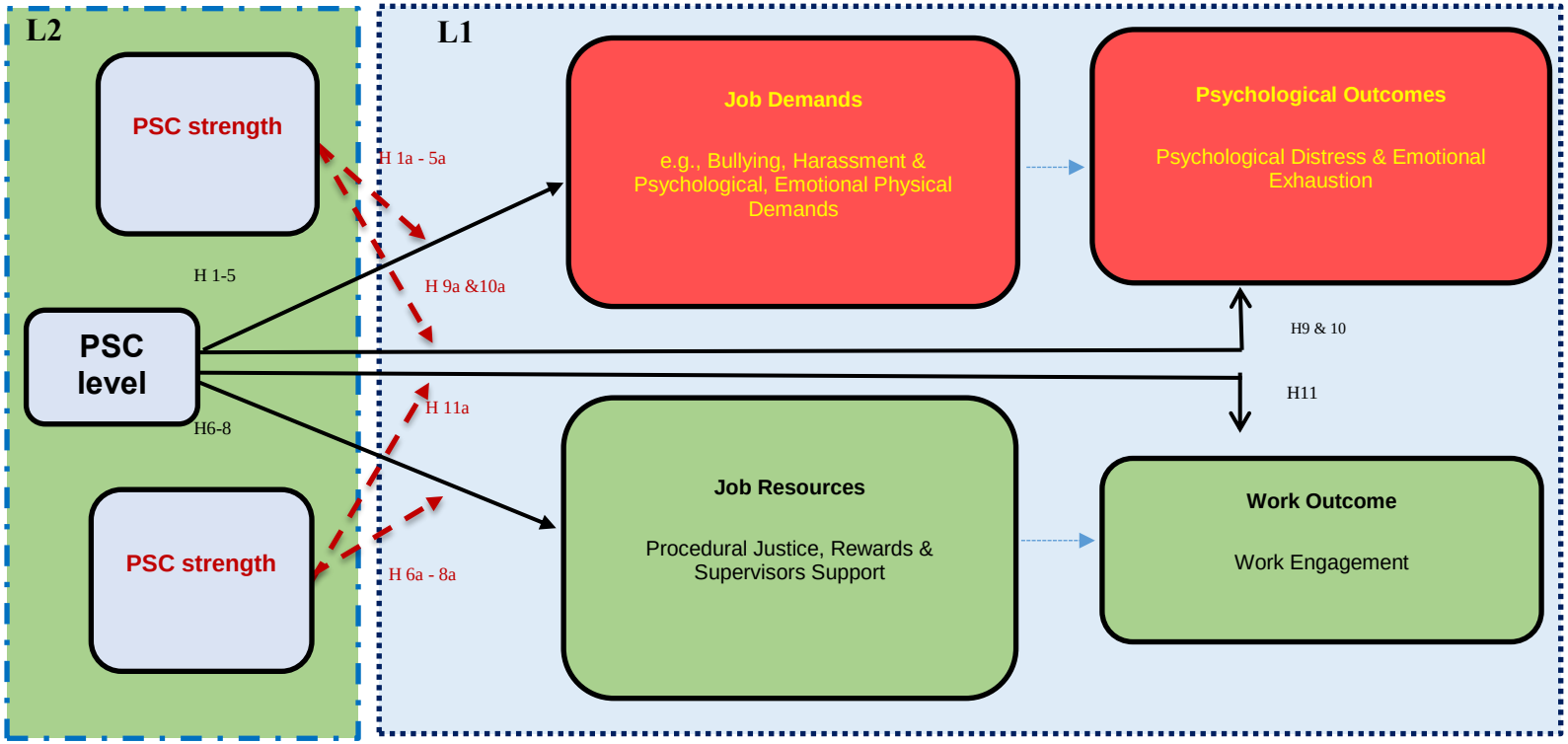


Figure 3.1 PSC Level, PSC Strength and Job Demands-Resources Model (JD-R)

Note: ⇢ These relation were not analyzed in the current study.

Regarding the novelty of PSC model from the mean level and dispersion (strength) perspective at macro levels like Australian organisations, previous studies have not focused on the relationships existed between PSC level and PSC Strength with other factors. In this study, PSC level indicated managerial policies, practices and procedures to consider employees' psychological health and safety at work. PSC strength emphasised the PSC dispersion (SD) index attempting to find interactive effects to predict other research factors.

It is hypothesized that the first main premise is to confirm the PSC model association with JD-R and work and health outcomes. PSC at the organisational level is significantly related to (a) job demands (-), (b) job resources (+), (c) emotional exhaustion (-), (d) psychological distress (-) and (e) work engagement (+) in Australian organisations.

Hypothesis (1-5): PSC at the organisational level significantly and negatively predicts job demands; work place bullying (H1), harassment (H2), psychological demands (H3), physical demands (H4), and emotional demands (H5).

Hypothesis (6-8): PSC at the organisational level significantly and positively predicts job resources; procedural justice (H6), organisational rewards (H7), supervisors support (H8).

Hypothesis (9 and 10): PSC at the organisational level significantly and negatively predicts psychological outcomes; psychological distress (H9) and emotional exhaustion (H10).

Hypothesis (11): PSC at the organisational level significantly and positively predicts work engagement (H11).

Hypothesis (1a-5a): PSC strength at the organisations significantly interacts with PSC level to predict job demands; work place bullying (H1a), harassment (H2a), psychological demands (H3a), physical demands (H4a), and emotional demands (H5a).

Hypothesis (6a-8a): PSC strength at the organisations significantly interacts with PSC level to predict job resources; procedural justice (H6a), organisational rewards (H7a), supervisors support (H8a).

Hypothesis (9a and 10a): PSC strength at the organisations significantly interacts with PSC level to predict psychological outcomes; psychological distress (H9a) and emotional exhaustion (H10a).

Hypothesis (11a): PSC strength at the organisations significantly interacts with PSC level to predict work engagement (H11a).

Fallowing Law et al. (2011), the current study expands the model to include all states of Australia to examine the interaction effects of PSC strength using an existing longitudinal data of Australian Workplace Barometer (AWB) from a wide range of organisations and industries. The previous studies conducted and published on PSC theory have not emphasised the PSC strength.

Methods

Theoretically, this multi-level study on PSC had a cross-sectional approach to the longitudinal investigation of AWB based on telephone interview of people randomly selected from Australian White book. The descriptive statistics e.g., means, standard deviation, correlations and ICCs and Cronbach Alpha values were explored using the Statistical Package for the Social Sciences (SPSS) program. Individual level data were nested within organisations and also clustered in states identification. Confirmatory Factor Analysis (CFA) was conducted by Hierarchical Linear Modelling (HLM 7) software (Bryk, Raudenbush, & Congdon, 1996).

Measures

PSC level and Strength

*Psychosocial safety climate.*Organisational level PSC was measured using the PSC-12 (Hall, Dollard, & Coward, 2010). Considering the four main principles of PSC earlier mentioned, each subscale embarks of three items in each and responses based on a five point scale from 1 = strongly disagree to 5 = strongly agree. The PSC-12 has previously exposed a suitable reliability with Cronbach's alphas of .81 or higher for each of the subscales (Hall, et al., 2010). Since all scales are quite highly correlated, a composite scale combining domains and aggregating employees' scores was used at the organisational level ($\alpha = .94$).

Psychosocial safety climate strength. According to climate strength literature (Roberson, Sturman, and Simons, 2007; Schneider et al., 2002; Zohar & Tenne-Gazit, 2008) standard deviation, as a dispersion index, was computed based on the average squared distance. The standard deviation of PSC ratings at the organisational level was calculated to measure organisational PSC strength. When the within-group variability or separation in organisational perceptions is of interest, the standard deviation is the most appropriate index (Harrison & Klein, 2007; LeBreton & Senter, 2007; Lindell & Brandt, 2000). Thus, the group sizes variations did inference and all the accessible data were involved. Furthermore, it is the dispersion index with the extreme relative predictive validity in investigations of the interaction effects between climate level and strength on higher (macro) level outcomes at work (Roberson et al., 2007). Standard deviation technically masseurs the scale weakness rather than what we expect as the climate strength. We utilized 1-SD as a better index of PSC strength in this study. Finally, to represent the role of PSC strength and simplify interpretation of results, the PSC strength (1-SD) was multiplied by PSC level scores.

Job Demands and Resources

Job Demands

In this study, job demands are workplace bullying, harassment, psychological demands, physical demands and emotional demands. *Workplace bullying* is defined as "Bullying is a problem at some work-places and for some workers". To label something as *bullying*, the offensive behaviour has to occur repeatedly over a period of time, and the person confronting has to experience difficulties defending him or herself. The behaviour is not bullying if two parties of approximate equal "strength" are in conflict of the conflict of incident is an isolated event" (Lindström Elo et al., 2000, p. 52). Workplace bullying was measured based on General Nordic Questionnaire for Psychological and Social Factors at Work (QPSNordic) definition asking participants questions about bullying existence, duration and frequencies like "Have you been subjected to bullying at the workplace during the last 6 months?" The positive response to the first question (a yes–no response to being face with Bullying) directs them towards two more questions. Bullying frequency was measured by "How often were you exposed to these bullying behaviours overall?" and responses was ranged from Daily = 1 to rarely =4. Bullying duration was measured by "How long were you exposed to these bullying behaviours overall?" answers was ranged from less than 1 month = 1 to more than 2 years = 5.

To measure *occupational harassment*, the Richman et al. (1996) scale was used including seven items —gender, sexual, racial or ethnic, being humiliated in front of others or being sworn at, and/or being physically attacked/threatened. 5-point Likert scale was utilized that ranges from very rarely/never = 1 to very often/always = 5 ($\alpha = .67$).

*Psychological, physical and emotional demands***.** The Job Content Questionnaire (JCQ 2.0) was used to measure these demands (Job Content Questionnaire Centre, 2012). This international scale contains the subsequent subscales; work pressure or psychological

demands (five items), physical demands (six items) and emotional demands (four items). Reponses list based on a 4-point Likert scale ranging from strongly disagree = 1 to strongly agree = 4 and reversely scored items then was recoded to correct self-report data.

Job Resources

In this study, job resources include organisational justice, organisational rewards and supervisor support. The Job Content Questionnaire (JCQ 2.0) (Job Content Questionnaire Centre, 2012) was also utilised to quantify organisational justice. Responses to four items of this scale like 'In my company/ organisation, procedures are designed to provide opportunities to appeal or challenge a decision' were ranged on a 4-point Likert scale from strongly disagree = 1 to strongly agree = 4 ($\alpha = .82$).

Organisational rewards were measured by a four-item scale; the Effort-Reward Imbalance scale (ERI; Siegrist, 1996) including esteem, promotion and security reward component. To be consistent with above measures, this scale response list was also made on a 4-point Likert scale ranging from strongly disagree = 1 to strongly agree = 4 ($\alpha = .65$).

Supervisor Support was also measured taking 3-items from the JCQ 2.0 like 'My supervisor/manager is helpful in getting the job done'. Similarly, the response list ranged on a 4-point Likert scale ranging from strongly disagree = 1 to strongly agree = 4 ($\alpha = .84$).

Health and Work Engagement

Health Outcomes. In the current study, emotional exhaustion and psychological distress have been discussed. To measure emotional exhaustion, five items of the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996) were used. For instance, 'I feel tired when I get up in the morning and have to face another day on the job' was selected to be responded on a 7-point Likert scale. The response list ranging from never = 1 to everyday = 7 ($\alpha = .86$).

To measure psychological distress, the Kessler 10 (K10; Kessler & Mroczek, 1994) was utilised. All 10 items like 'In the past four weeks, about how often did you feel everything was an effort?' included to explore anxiety and depression level and symptoms that the employees have experienced during the last four weeks. Response list was scored on a 5-point Likert scale, ranging from none of the time = 1 to all of the time = 5 ($\alpha = .85$).

Work Engagement Nine items from the Utrecht Work Engagement Scale – Shortened Version (UWES-9; Schaufeli, Bakker, & Salanova, 2006) were employed to measure work engagement. Three subscales, each consists of three items to measure a different facet of engagement were used. Vigour, e.g., 'At my work, I feel bursting with energy'; dedication, e.g., 'My job inspires me'; and absorption, e.g., 'I get carried away when I am working'. These items were all measured on a 7-point scale which ranged from never = 1 to everyday =7 ($\alpha = .84$).

Results

The accuracy of data entry including normality of sampling distributions, missing values, linearity and multivariate normality, outlier values (multivariate and univariate) of all the research variables were screened prior to the data analysis. Missing Value Analysis function in SPSS was utilised for missing data. Subsequently, Little's MCAR test revealed the pattern

of missing data observed and indicate that the missing data was distributed absolutely randomly (Field, 2009). The randomly distributed missing values within a huge dataset (nearly < 5%), cause to yields similar results for almost any procedure to handle missing items (Tabachnick & Fidell, 2007). All missing values less than 5% were mean replaced and Q–Q plots was used to check the normality of sample distributions observed (Field, 2009).

Descriptive statistics e.g., Means, Standard deviations, and correlations are presented in Table 1. PSC level, as expected, was significantly negatively interrelated with job demands e.g., workplace bullying, harassment, psychological demands, physical demands, and emotional demands. PSC level was positively associated with job resources e.g., procedural justice, organisational rewards and supervisor support. In terms of health and work outcomes, significantly negative correlations were found between PSC level with psychological distress and emotional exhaustion. Likewise, PSC level was significantly related to work engagement at the individual level.

PSC strength was also significantly correlated with both job demands and resources, albeit to reverse direction towards PSC level; positively related to job demands and negatively related to job resources.

Hypothesis Testing

Our hypotheses comprise of testing the cross-level interactions between lower level (L1; individual employee) variables like risk factors and outcomes (e.g., psychological health and engagement) and upper or organisational level (L2) variables including PSC level and strength. The correlation between the PSC level (aggregate mean) and PSC strength (dispersion/variance) of the PSC construct in question was computed to examine the amount of interdependence between higher level variables. A significant and moderate correlation (-.33, $p < .01$) between PSC level and strength would designate systematic range restriction not

to be problematic in this research. However, the correlation direction would reveal any extraordinary range restriction (high or low scorings). The interdependence of PSC level and PSC strength (-.33, $p < .01$) indicates that these concepts are theoretically distinctive and the assessment of PSC strength would have incremental value outside of PSC level alone. Nevertheless, the reverse correlation between climate level and climate dispersion is not strange and uncommon (Cole et al., 2011). It is assumed that standard deviation as a variation index — lower SD suggests lower level of variability and subsequently higher strength of climate. The negative direction would be expected.

Descriptive statistics (e.g., means, standard deviations and correlations) have been showed in Table 3.1. The intra-class coefficient ICC [1] have been used to estimate between-group variance for PSC level (.04). The ICC [1] designates that 4 % of PSC inconsistency is owing to random effects at the organisational level. PSC scale has also been found comparatively reliable since ICC [2] was .82 which also demonstrates high consensus on each single item of PSC in the scale. Thus the extremely adequate reliability and homogeneity for aggregating induvial level PSC to the organisational level was confirmed.

Hierarchical linear modelling (HLM) based on the computer program HLM 7 (Raudenbush, Bryk, Cheong, Congdon, & Du Toit, 2011) was applied according to the multilevel and multi-group nature of the data analysis, and to examine all the hypotheses. To support the measures consisting different scales and to understand the graphical interactions, the higher level variables were standardised across 305 organisations (Mathieu & Taylor, 2007).

We tested interrater agreement to validate PSC aggregation and found a suitable agreement within-organisations $r_{(WG)(j)} = .89$, SD = .20, that justifies aggregating individual PSC scores to the organisational level. These findings are consistent with other PSC

investigations at the higher level (Dollard and Bakker (2010), $r_{(WG)(j)}$ =.76, SD = .18; Law et al., (2011), $r_{(WG)(j)}$ = .90, SD = .18, Idris, et al., (2012), $r_{(WG)(j)}$ = .96, SD = .21).

According to the level effects (organisations), the PSC level and PSC strength correlations was firstly computed at the higher level (L2). Significantly, PSC level (organisational mean level) was negatively correlated to job demands (workplace bullying; r = -.23, p < .01, occupational harassment; r = -.33, p < .01, Psychological demands; r = -.29, p < .01 physical demands; r = -.11, p < .01 and emotional demands; r = -.27, p < .01. Significantly, PSC at the organisational level was also found to be positively related to job resources (procedural justice; r =.65, p < .01, organisational rewards; r = .45, p < .01 and supervisor support; r = .53, p < .01). In organisations interms of health and work outcomes, we found significantly indirect relationships between PSC level and psychological distress r = -.26, p < .01 and emotional exhaustion r = -.37, p < .01 in the health pathway. To end with, significantly direct relation between PSC level and work engagement (r = .12, p < .05) was confirmed at the motivational path way. PSC model was confirmed as the theoretical background of this study and was found to be associated with JD-R and work and health outcomes. Thus, PSC at the organisational level is significantly related to (a) job demands (-), (b) job resources (+), (c) emotional exhaustion (-), (d) psychological distress (-) and (e) work engagement (+) in Australian organisations (see Table 3.1).

Table 3.1 Descriptive Statistics: Means, SDs and correlations between research variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	F	ICC-1
Age	46.27	12.21	-	.10*	.13**	-.02	.02	.04	.03	-.09*	.15**	-0.01	.03	.01	-.16**	-.13**	.14**	1.30***	.06
Gender	1.52	.5	-.01	-	-.47**	-.13**	.01	-.01	.13**	.01	.25**	-.09*	-.11*	-.09	.07	.10*	.01	2.10***	.27
Income	5.71	2.52	.10**	-.32**	-	-0.01	.02	.03	0.06	-.29**	-.02	.07	.18**	.06	-.14**	.01	.09*	2.12***	.28
PSC	40.41	10.38	-.04**	-.02	-.05**	-	-.19**	-.33**	-.31**	-.15**	-.26**	.59**	.46**	.49**	-.18**	-.35**	.36**	1.22**	.04
Bullying	.55	2.36	.01	.06**	.02	-.23**	-	.35**	.24**	.18**	.25**	-.21**	-.25**	-.26**	.26**	.17**	-.08	1.40***	.00
Harassment	8.68	2.38	-.01	.01	.07**	-.33**	.36**	-	.28**	.22**	.30**	-.31**	-.26**	-.32**	.25**	.30**	-.17**	.99	.01
Psychological Demands	31.03	5.43	-.04**	.08**	.17**	-.29**	.16**	.26**	-	.10*	.45**	-.26**	-.25**	-.25**	.25**	.45**	-.05	1.20**	.06
Physical Demands	10.45	3.03	-.08**	-.08**	-.16**	-.11**	.05**	.15**	.14**	-	.19**	-.19**	-.27**	-.25**	.13**	.12**	-.11*	1.66***	.18
Emotional Demands	10.37	2.45	.08**	.12**	.10**	-.27**	.21**	.32**	.48**	.13**	-	-.21**	-.30**	-.21**	.21**	.33**	-.01	1.69***	.18
Procedural Justice	11.09	1.89	-.01	-.04**	.016	.65**	-.16**	-.23**	-.22**	-.09**	-.16**	1	.45**	.37**	-.26**	-.27**	.30**	1.08	.02
Organisational Rewards	11.51	1.77	.01	-.06**	.11**	.45**	-.19**	-.28**	-.25**	-.20**	-.25**	.47**	-	.43**	-.28**	-.29**	.26**	1.3	.02
Supervisor Support	9.16	1.52	-.05**	.01	.01	.53**	-.24**	-.27**	-.19**	-.18**	-.19**	.45**	.44**	-	-.15**	-.23**	.29**	1.23**	.05
Psychological Distress	1.50	.52	-.10**	.06**	-.03*	-.26**	.22**	.28**	.26**	.11**	.29**	-.21**	-.32**	-.19**	-	.52**	-.32**	.96	.00
Emotional Exhaustion	15.55	7.98	-.13**	.03*	.08**	-.37**	.16**	.28**	.44**	.14**	.41**	-.28**	-.33**	-.22**	.54**	-	-.32**	1.05	.00
Work Engagement	51.31	9.75	.07**	.01	.06**	.35**	-.08**	-.15**	-.05**	-.08**	-.06**	.30**	.30**	.25**	-.30**	-.33**	-	1.19**	.08

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

According to the descriptive results (Table 3.1), the Job Demands–Resources (JD-R) theoretical pathways are strongly supported in terms of magnitudes and direction of relationships. In the same vein with the previous empirical investigations, the descriptive statistics considerably designate that PSC at the organisational levels is adversely interrelated to the job demands and mental health issues, and it is positively correlated to job resources and engagement.

Turning to the empirical evidence on PSC as a higher level concept, we examined the role of PSC aggregated at the organisational level as a predictor of employees' individual perception of workplace demands. To this end, Hierarchical linear modelling (HLM) was applied to explore higher level factors (PSC mean level) impacts on the workplace bullying, harassment, psychological demands, emotional demands and physical demands at the level individuals. The results revealed that PSC mean at the organisational level is a significant predictor of workplace bullying (H1); $\beta = -.48$, $p < .01$, harassment (H2); $\beta = -.52$, $p < .01$, psychological demands (H3); $\beta = -.1.13$, $p < .01$, physical demands (H4); $\beta = -.41$, $p < .01$, and emotional demands (H5); $\beta = -.24$, $p < .05$.

In spite of the findings achieved on the role of PSC mean, PSC was also investigated trough a dispersion to signify the importance perception variability in organisations in terms of PSC strength. Based on the standard deviation (SD) values, PSC strength, as a dispersion index, was examined; however, we could not find any important role of PSC variability to regress job demands except for emotional demands; $\beta = -.02$, $p < .05$. Correspondingly, we examined the interaction effects via PSC level × PSC strength to find any moderating effect. The results, as shown in Table 3.2, indicate that at the organisational level no significant interactions was found between PSC and PSC dispersion (strength) as the predictors of job demands and emotional demands (H5a).

Table 3.2 Hierarchical Linear Modelling for Job Demands

	Bullying		Harassment		Psychological Demands		Physical Demands		Emotional Demands	
	(Model 1)		(Model 2)		(Model 3)		(Model 4)		(Model 5)	
	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)
Cross-level effects										
Intercept (y00)	.71 (.07)***	.71(.07)***	8.95 (.07)***	8.96 (.07)***	32.03 (.18)	32.04 (.17) ***	10.02 (.11)***	10.02 (.10) ***	10.76 (.09)***	10.75 (.09)***
PSC Level		-.48 (.16)**		-.52 (.11)***		-1.13 (.30)***		-.41 (.15)**		-.24 (13)*
PSC Strength		.03 (.10)		.01 (.08)		.08 (.30)		.05 (.12)		.02 (.10)*
PSC × PSC Strength		-.12 (.11)		-.09 (.11)		-.15 (.24)		-.11 (15)		-.08 (.12)
Within-team (L1) variance (r)	6.99	6.88	6.79	6.71	31.3	31.13	7.38	7.39	5.27	5.28
Intercept(L2) variance(u0)	.02	.01	.08	.01	2.15***	1.6 **	1.57***	1.44 ***	1.18***	1.04***
Additional Information										
2 log likelihood (FIML)	6645.343	6620.538	6616.989	6588.462	8801.059	8776.812	6905.011	6895.049	6444.156	6429.602
No. of estimated parameter	3	6	3	6	3	6	3	6	3	6
Pseudo R2	<.01		<.01		<.01		<.01		<.01	

Note: n = 1389 participants, n = 305 groups, HLM parameter estimates; coefficients with standard errors in parentheses β (SE). All the level 2 variables are grand centred.
* $p < .05$, ** $p < .01$, *** $p < .001$

The second set of data analysis examined the impact of PSC level, PSC strength and their possible interactions on job resources. HLM results indicated that PSC organisational level has significantly direct effects on procedural justice (H6); $\beta = .91$, $p < .001$, organisational rewards (H7); $\beta = .54$, $p < .001$ supervisor support (H8); $\beta = .63$, $p < .001$. Nevertheless, a mixed support was found for the role for the interacting role of PSC level and strength to predict job resources. There was no evidence showing that PSC strength had an influence on PSC level to predict procedural justice. However, we found that there was an interacting effect hypothesized between PSC level and strength to predict organisational rewards (H7a); $\beta = -.16$, $p < .05$ supervisor support (H8a); $\beta = -.18$, $p < .05$ (see Table 3.3).

Table 3.3 Hierarchical Linear Modelling for Job Resources

	Procedural Justice		Organisational Rewards		Supervisor Support	
	(Model 6)		(Model 7)		(Model 8)	
	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)
Cross-level effects						
Intercept (y00)	10.96 (.05)***	10.96 (.04)***	11.48 (.05)***	11.47 (.04)***	9.11 (.05)***	9.11 (.04)***
PSC Level		.91 (.06)***		.54 (.06)***		.63 (.09)***
PSC Strength		.02 (.05)		<.01 (.06)		.08 (.05)
PSC × PSC Strength		-.12 (.08)		-.16 (.07)*		-.18 (.08)*
Within-team (L1) variance (r)	3.67	3.34	3.16	3.07	2.64	2.59
Intercept (L2) variance (u0)	0.07*	<.01	0.06	<.01	.14**	<.01
Additional Information						
2 log likelihood (FIML)	5773.141	5616.223	5567.309	5503.862	5350.979	5264.866
No. of estimated parameter	3	6	3	6	3	6
Pseudo R2	<.01		<.01		<.01	

Note: n = 1389 participants, n = 305 groups, HLM parameter estimates; coefficients with standard errors in parentheses β (SE). All the level 2 variables are grand centred. * $p < .05$, ** $p < .01$, *** $p < .001$

Since, the variability in PSC perceptions at the organisations (PSC strength) was operationalized in terms of standard deviation, the greater values of PSC strength signifies a poorer agreement about PSC within the work environment. To provide a better understanding, the interaction effect of PSC strength on PSC level for organisational rewards and supervisor support is graphically depicted in Figure 3.2 and 3.3.

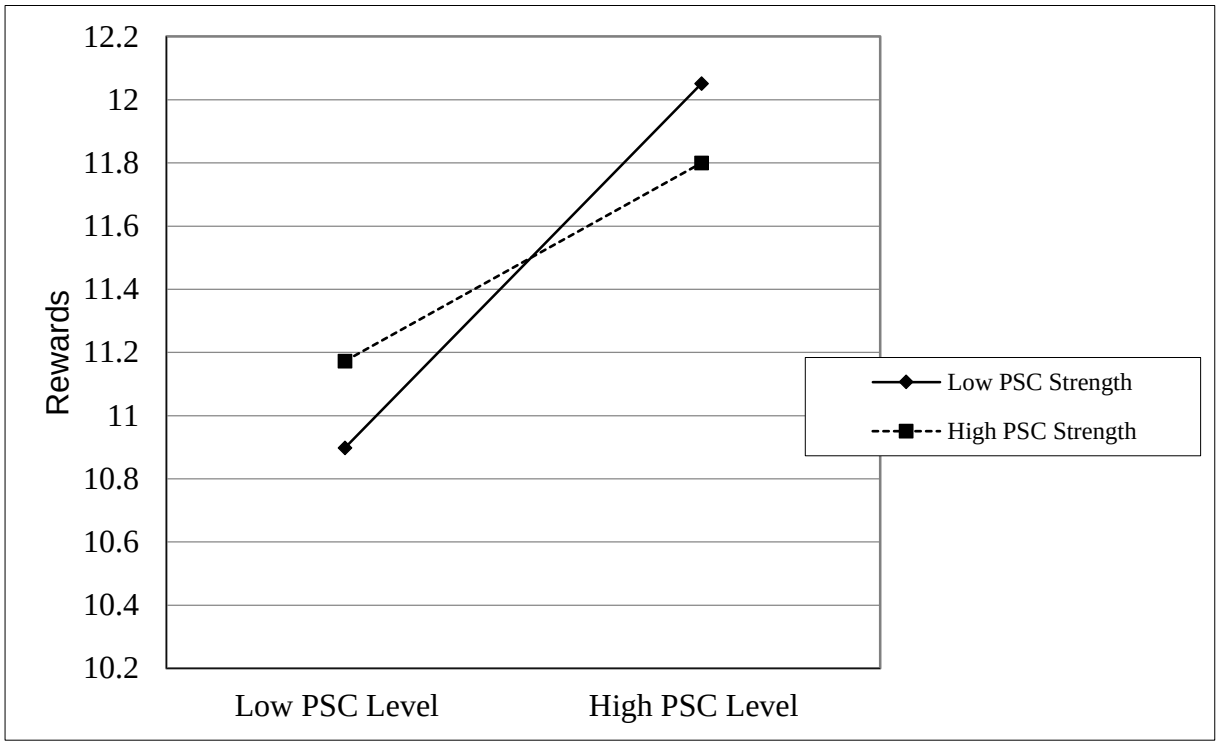


Figure 3.2 PSC Level and PSC Strength Interaction to Predict Organisational Rewards

At the organisational level, the relationship between PSC aggregated and workplace rewards was stronger in organisations with low PSC strength. In working situation with high PSC, higher rewards are provided when there is a higher variability or (high PSC SD). However this form of the interaction is not as theorised.

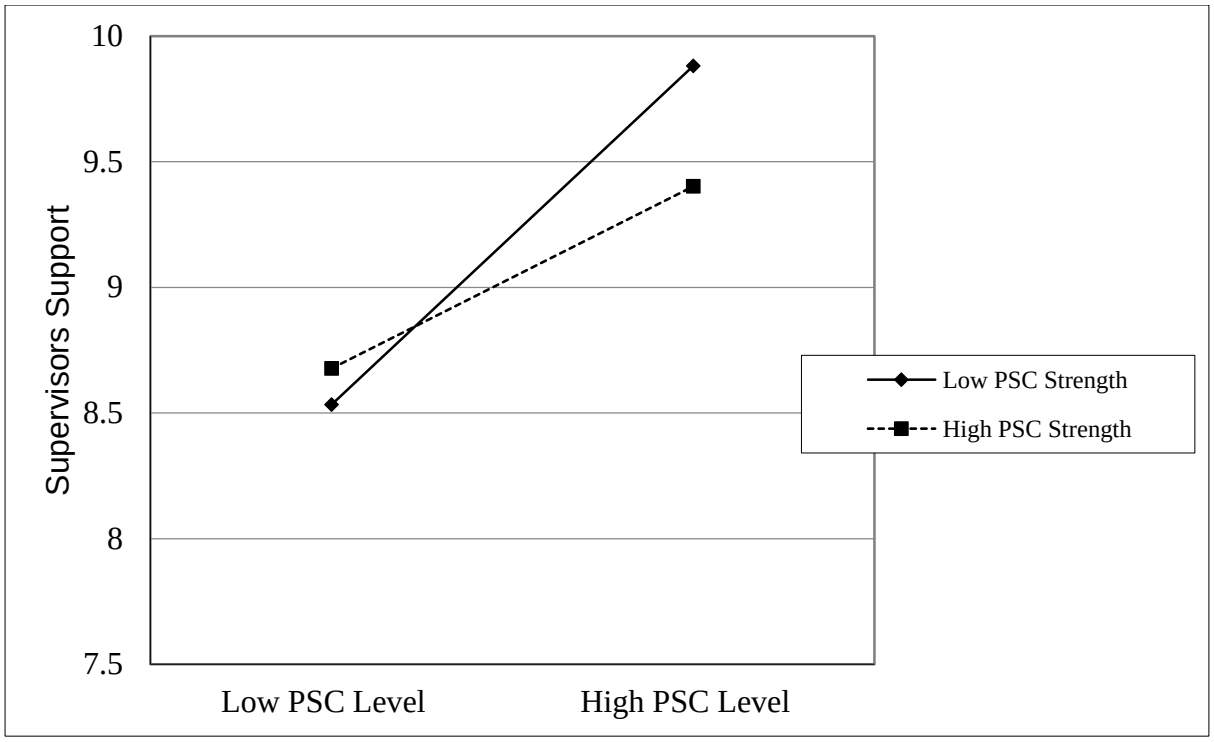


Figure 3.3 PSC Level and PSC Strength Interaction to Predict Supervisors Support

This relationship between PSC aggregated at the organizational level and supervisory support is the same in formation as in the previous graph. Although it is not in line with our theoretical expectation, there is a possible explanation. Perhaps supervisors in organisations that where the PSC levels are high but where there is an inconsistency in how employees see the climate, supervisors might be inclined to work harder to compensate with social support.

In response to the health and work outcome, Hierarchical Linear Modelling indicated that PSC at the organisational level is significant predictor of psychological distress (H9); $\beta = -.08$, $p < .0001$, emotional exhaustion (H10); $\beta = -1.95$, $p < .001$, and work engagement (H11); $\beta = 2.41$, $p < .001$. There was no evidence of interacting effects of PSC strength on PSC level to predict the psychological health and work outcomes investigated in this study. The HLM results indicated that PSC strength explain more variance than PSC mean level

alone to predict psychological distress (H9), emotional exhaustion (H10) and work engagement (H11) (see Table 3.4).

Table 3.4 Hierarchical Linear Modelling for Health and Work Outcomes

	Psychological distress		Emotional exhaustion		Engagement	
	(Model 9)		(Model 10)		(Model 11)	
	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)	Null (H_0)	Alternative (H_1)
Cross-level effects						
Intercept (y00)	1.51 (.01)***	1.51 (.01)***	16.27 (.20)***	16.28 (.20)***	50.77 (.31)***	50.76 (.30)***
PSC Level		-.08 (.01)***		-1.95 (.31)***		2.41 (.50)***
PSC Strength		-.01 (.01)		-.13 (.24)		.49 (.36)
PSC × PSC Strength		-<.01 (.02)		.12 (.30)		-.28 (.43)
Within-team (L1) variance (r)	.27	.27	60.41	58.66	85.95	84.94
Intercept (L2) variance (u0)	<.01	<.01	.11	.06	7.66***	6.25***
Additional Information						
2 log likelihood (FIML)	2150.144	2132.685	9639.125	9596.909	10222.537	10192.086
No. of estimated parameter	3	6	3	6	3	6
Pseudo R2	<.01		<.03		<.02	

Note: n = 1389 participants, n = 305 groups, HLM parameter estimates; coefficients with standard errors in parentheses β (SE). All the level 2 variables are grand centred. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

In this article, we reviewed psychosocial safety climate (PSC) through the lens of mean level and dispersion based on the situational strength theory. We conceptualised strong PSC as strong conditions/less variability in employees' climate perceptions which defined desirable climate; thereby the range of variability (SD) of the climate perception was limited.

In the current study, we found support for PSC and JD-R theories by indicating that PSC strength had a complex influence on psychosocial safety climate relationship with organisational rewards and supervisors support. PSC mean at the organisational level was found to be a strong predictor of job demands and job resources affecting employees' psychological health and work engagement. The results suggested that harm reduction interventions for psychosocial risk factors at work should utilize PSC model to facilitate interpersonal work experiences and managerial plan to support employees' health and safety.

The results indicated the important role of PSC over and above JD-R model to predict workplace psychosocial risk factors and subsequently psychological heath and work outcomes. In consistent with the expectation of the climate strength role to explain more variance than PSC level alone, a mixed support was found in this research. The results did not reveal the interacting effects of PSC level on PSC strength. The research replied particularly to González-Romá et al. (2009) call for multi-level investigation of climate strength as a moderator of specific-facet safety climate like PSC.

This study operationalised PSC level in organisations to provide evidence that PSC was a main indicator of work place psychosocial risks. The results provided further support for the hypothesis that in low PSC organisations, less job resources like procedural justice, organisational rewards and supervisor support were provided and consequently higher levels of workplace bullying and harassment might be reported by employees.

The most important workplace risk factors were negatively related to PSC and positively related to poor psychological health, the workplace bullying and harassment. Accordingly, low PSC at the organisations was found as a trigger of deficiencies in health and motivational pathways which was also identified in the JD-R model. In consistent with the previous scholars (e.g., Afsharian, Zadow, & Dollard, 2016; Idris & Dollard, 2014; Law et al., 2011), the results also extended the JD-R model trough the motivational pathway and PSC level was found to be related to work engagement. PSC was identified as an organisation-based resource that moderated the positive association between psychological health issues and workplace bullying/harassment, and also moderated the negative association between work engagement, work bullying and harassment.

The findings were parallel with Law et al (2011) but in a bigger sample size of all Australian states. Only PSC mean level could increase some empirical evidence to support PSC theory. PSC, as a growing organisational climate, was found to be a main indicator and upstream element to protect psychosocial risks factors and employees' psychological health and work outcomes at work (Dollard, 2011). In the same direction with Dollard and Bakker (2010), it was found that PSC strength (SD) or the variability of perceptions at the higher levels (organisations) would not be important and scholars can rely on the PSC mean as the best indicator of PSC perceptions. There was a ceiling effect on organisation size and PSC strength tends to keep on the same even in higher research samples.

In practice, more inflexible managerial policies and practices were required for an organisation to operate efficiently. Executing the homogeneous managerial practices required an organisational climate having lower within group variabilities or higher strength.

Research Implications

Harmful consequences of stress at work and psychosocial risks have had significant costs for organisations (World Health Organization, 2015). Despite the theoretical implications like expanding PSC theory through JD-R model emphasising health and motivational pathways to enhance workplace health and safety, the findings could be considered as practical approaches to prevent workplace risk factors like bulling, harassment, psychological demands, physical demands, and emotional demands. Research studies (e.g., Dollard & Bailey, 2014; Kwan et al., 2016; Law et al., 2011; Nielsen et al., 2014) have supported the relationship between job demands (e.g., bullying, harassment psychological demands etc.), job resources (e.g., procedural justice, job rewards and supervisors support) and psychological health issues and poor work outcomes. PSC model would be considered as a preventive climate against the negative consequences of psychosocial risk factors in organisations.

PSC theory, as a job resource, can prevent and reduce harm at work. We assume that PSC may determine the social aspects of working environments to address unwanted behaviours like workplace bullying and harassment. Likewise, the negative moderating effects of PSC (Law et al., 2011) on relationships between psychosocial threats and outcomes can also act as secondary preventions. Thus, PSC theory delivers a new multi-level structure at working environments which changing and reframing managerial policies towards supporting employees' psychological health and safety. Effective prevention under Organisational Health and Safety (OHS) duties is required to decrease the predictable injuries like psychological and emotional harms (Law et al., 2011). Effective intervention is required to primarily change or modify the managerial policies, practices and procedures in order to prioritise human resources needs and values (Dollard & Karasek, 2010).

Limitations and Directions for Future Research

Like most of the research attempts, certain limitations in this study were inevitable. This study was based on the self-report measures that may cause to bias about the common method. Cross-sectional approach towards the variables relation in the current study may inference the causality that cannot be drawn. Upcoming longitudinal and experimental research should be conducted to establish causality. The lack of strong theoretical background and framework for applying the PSC strength, as a new concept, to improve PSC in the organisations was expected to have twisted misleading effects grounded on mere chance. Hence, it was required for systematic and repetitive research to explain the significance of psychosocial safety climate (PSC) strength for explaining its direct and indirect effect on job demands and resources and consequently health and work outcomes.

Conclusion

The current study provided further support for a multilevel theoretical model of PSC – a relatively new and emerging construct in the occupational health and safety literature. PSC is a leading indicator of psychosocial hazards, psychological health problems and work engagement. The impetus to set the standard for PSC lies with top management, and it is mutually beneficial for stakeholders to monitor, address and evaluate PSC within organisations and across industries. Projecting further into the future, interventions aimed at monitoring and changing PSC should be developed and evaluated.

The PSC and climate strength concepts are relatively new and progressively growing in the past couple of decades. In spite of the growing attention to these concepts, there was an extensive gap in the PSC literature, as all examinations of PSC did not involve climate strength. Given the results achieved, high PSC at the organisational level could significantly predict job resources like supervisors support. The interaction effect of PSC strength on PSC level relationship with supervisors support indicated that in a high PSC and higher PSC dispersion (low PSC strength) situation, managers who were familiar with the importance of providing a climate based on employees health and safety, might care more about working designs by providing higher level of supervisors support for their subordinates. In low PSC level, the lower level of supervisors support was expected and employees had census on the low level of supervisors support.

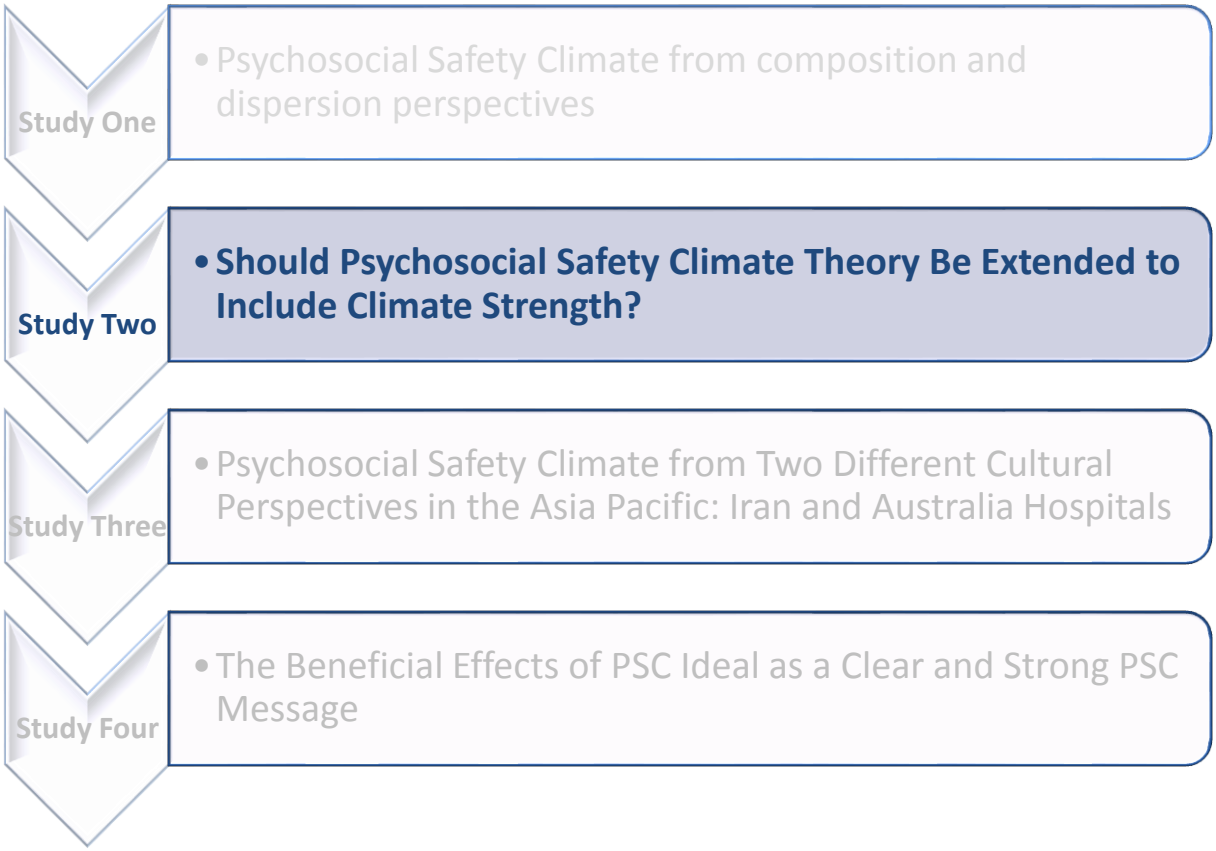
This finding had important implications for developing PSC theory. This study aimed at filling out the gap captivating a multi-level approach to PSC level and PSC strength focusing on organisations in the entire states in Australia. This study not only focused on six states, but also involved 1389 employees working within 305 organisations. The results shed light on some of the PSC antecedents and also partially supported PSC strength hypothesis,

though not in the pattern anticipated. The results may provide a better understanding for HR managers, organisational leaders and senior managers who are motivated to improve health and work engagement levels in organisations and large sectors. Not only they know PSC as a facet-specific climates linked to psychological health and work outcomes, but also they may better recognise the strategies they need to proceed around working climate, whether PSC level alone be focused on, or along with PSC strength. Finally, this investigation provided essential context and framework to intensify our knowledge on the psychosocial safety climate and climate strength constructs.

Chapter 4

Study Two:

Should Psychosocial Safety Climate Theory Be Extended to Include Climate Strength?



Abstract

Psychosocial Safety Climate (PSC- climate for psychological health) is an organisational antecedent to work conditions articulated in the Job Demands-Resources model. We responded to calls for broader consideration of organisational climate in terms of both climate level and strength. We tested PSC level and strength as main and interactive predictors of work conditions, psychological health and engagement. Using multilevel analysis and cross-sectional data, the effects of unit level PSC constructs were investigated in 21 hospital work units (n = 249 employees) in Australia. The correlation between PSC levels (measured at the unit mean) and PSC strength (measured as unit -1×SD) was moderate and positive suggesting that ceiling effects of PSC scores were not problematic. PSC level was a better predictor than PSC strength or their interactions for job demands (psychological and emotional demands), job resources (e.g., skill discretion, organizational support), and health (emotional exhaustion). For engagement, the interaction was significant — improving engagement, therefore, benefits from high levels of PSC and PSC strength within the work units. So, the answer to the research question regarding PSC theory extension – "it depends on the outcome". Research limitations are acknowledged and the potential of the PSC model to guide the reduction of workplace psychosocial risk factors and the negative consequences is discussed.

Key Words: Psychosocial Safety Climate, Climate Strength, Job Demands-Resources, Health and Work Outcomes

Work-related stress is a major issue in organisations worldwide, particularly in the health care industry (Gordon, Demerouti, Bipp, & Le Blanc, 2015). To address workplace stress, the correct origins need to be identified and tackled. The majority of work stress theories propose psychosocial risks, such as poor job design and social relational aspects of work, as the main causes of work stress. Psychosocial Safety Climate (PSC) theory, however, goes further up the causal chain and proposes that the way managers prioritize and value worker psychological health provides a better understanding of why work stress is experienced. Since PSC is largely influenced by senior management values and priorities in relation to psychological health and safety, the same values and priorities will guide the way jobs are designed in organizations. Accordingly, PSC is referred to as the "cause of the causes" of work stress and is a useful theory to guide the prevention and reduction of psychosocial risks that threaten worker psychological health and engagement.

Growing evidence indicates that PSC level predicts psychosocial risk factors, psychological health, and work engagement outcomes. However, some scholars suggest that when considering the impact of organizational climate, it is important to consider not only the extent to which the climate exists (climate level) but also how strong the climate is (climate strength; González-Romá, Fortes-Ferreira, & Peiró, 2009). Senior managers have the remit to establish PSC policies and procedures, and middle managers, or unit managers are generally responsible for enactment or implementation. Across organizations and work units there may be variability in how policies and procedures are shaped and implemented. For example, one senior manager may be less concerned about worker psychological health, and another middle manager less consistent in implementation, than others. Thus, the extent of consistency in PSC, or PSC strength,

within organizations or work units should also have implications for work conditions, health and engagement.

Three different parameters may be used to investigate organisational climate: (1) overall climate level which is based on the mean; (2) climate strength which refers to the variability or dispersion of employees' perceptions of the climate reflected as within group agreement; and (3) interaction effects between climate level and climate strength (Cole, Bedeian, Hirschfeld, & Vogel, 2011; Schulte, Ostroff, Shmulyian, & Kinicki, 2009; Tabachnick & Fidell, 2001). This study addresses a theoretical gap in the emerging PSC literature, which has emphasized PSC level and has not yet considered PSC strength. We respond to calls to investigate the strength of a climate in addition to its level, and have examined the interplay between PSC level (mean) and strength (dispersion). Therefore, the aim of this study was to explore climate strength (Schneider, Salvaggio, & Subirats, 2002) in PSC theory (Dollard & Bakker, 2010), and whether PSC strength affects the known relationships between PSC and work design/psychosocial risks, psychological health and work (i.e., engagement) outcomes.

Psychosocial Safety Climate

PSC concerns worker psychological health and the prevention of workplace *psychosocial risk factors*, defined as "those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm" (Cox, Griffiths, & Rial-González, 2000, p.14). PSC is a facet of organisational climate and refers to employees' shared perceptions of organizational policies, practices and procedures in relation to psychological health and safety (Dollard & Bakker, 2010). Schneider, Ehrhart, and Macey (2013) argued that, to be useful theoretically and practically, organisational

climate constructs should be specific, such as a climate specifically for safety. For instance, safety climate refers to shared perceptions of workers regarding an organisation's policies, procedures, and practices in relation to general safety (Zohar, 2010). Safety climate emphasizes the role of the job environment and job design in how to manage, control, and remove the physical risk factors (Zohar, 1980). However, psychosocial safety climate differs from safety climate per se because PSC emphasises the prioritization of psychosocial aspects of the work environment rather than physical hazards and risks. That is, workers should also be safe from psychological injury. Based on improving and creating managerial procedures, policies and practices, psychosocial safety climate is designed to protect employees against psychosocial risk factors (Dollard & Bakker, 2010; Dollard & Karasek, 2010). PSC is a construct that brings together the safety and work stress literature. Psychosocial is about safety because it concerns freedom from psychological and social hazards (Dollard & Bakker, 2010); PSC is about protecting worker psychological health and preventing work stress that results from exposure to psychological and social hazards.

PSC comprises four basic elements and priorities: (a) management priority, the importance given to the psychological health and safety over productivity by the managers; (b) management commitment, the level of support provided by the managers to prevent the psychosocial risk factors like stress at work; (c) organisational communication; concerns communication regarding psychological health and safety at work, and (d) organisational participation, the extent that people at different working levels get involved with psychological health and safety concerns (Dollard & Bakker, 2010; Dollard & McTernan, 2011).

The PSC theoretical framework extends two important paths of the job demands and resources (JD-R) model, a well-known and widely used theory of job stress

(Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In the JD-R model, the health pathway describes the negative effects of excessive job demands leading to, or increasing, psychological health problems, while the motivational pathway focuses on the positive role of job resources in promoting work engagement. Job resources may also protect against the detrimental effects of job demands (Nahrgang, Morgeson, & Hofmann, 2011) and may also subsequently prevent workplace burnout (Bakker & Demerouti, 2016).

PSC is an antecedent to the job demands and resources articulated in the JD-R model. This is because fundamental values that underpin PSC also influence other decisions that managers make concerning how jobs are designed, such as the type and level of demands one is exposed to and the type and level of resources that are supplied to get the job done. Consequently, low PSC is described as a main upstream activator of the work stress process, and an effective target for stress prevention (Dollard & Bakker, 2010).

Studies on PSC level (e.g., Afsharian, Zadow, & Dollard, 2016; Dollard, Bailey, McLinton, & Richards, 2012; Kwan, Tuckey, & Dollard, 2016) have confirmed that PSC is negatively related to job demands and positively related to job resources. A longitudinal investigation of Australian nurses from 48 workgroups found that the workgroup was responsible for around 24% of the variance in PSC, indicating that team-level factors such as supervisor actions may create variation in PSC. Longitudinal, multilevel results from Australian education workers showed that organizational PSC level predicted emotional exhaustion and psychological distress through its relationship with job demands, and work engagement through its relationship with job resources (Dollard & Bakker 2010). These relationships were also confirmed in the Australian Workplace Barometer longitudinal study of the general working population (Dollard et

al., 2012). Similarly, a multilevel study conducted in Australia and Malaysia showed a negative relationship between PSC level, job demands, psychosocial risk factors, and psychological health (Idris, Dollard, Coward, & Dormann, 2012). Moreover, a recent study established PSC benchmarks as a new tool for practical guidance; it found significant negative effects of PSC level on job strain (as characterized by high demands and low control), and subsequently, on depressive symptoms (Bailey et al., 2015).

Organisational Climate Strength

Climate strength is defined as the amount of within-group agreement in employees' perceptions of climate (Roberson, Sturman, & Simons, 2007). DeRue, Hollenbeck, Ilgen, and Feltz (2010) noted that groups showing the same overall climate level may be very different in terms of climate strength. In a study of global leadership, Dickson, Resick, and Hanges (2006) found that when organisational practices were ambiguous, lower levels of climate strength were found. The main explanatory mechanism for understanding organizational climate strength and its implications is situational strength (Mischel, 1973)—explicit and implicit situational cues provided by environmental forces—which leads individuals to perceive the work context similarly and to develop common expectations about desired behavior. A strong climate, indicated by homogeneous perceptions, should create strong expectations regarding what behaviors will be supported or not by the organization. Strong positive situational cues are likely to make employees feel safe and more comfortable (Dickson, et al., 2006). Conversely, in an environment in which weak guidance is provided regarding expected behaviors, there will likely be large variations in how employees feel and behave, leading to feelings of irritation, ambiguity, or even anxiety. Empirically, low climate strength has been associated with interpersonal conflict and, in turn, increased emotional exhaustion and

reduced work engagement (Lindell & Brandt, 2000). Social interaction and information processing in work groups may additionally lead to homogeneity in group perceptions (Klein & Kozlowski, 2000a). Consequently, employee behavior might become more predictable when climate strength is stronger (Lindell & Brandt, 2000; Meyer et al., 2014).

While some climate strength investigations have shown that employees' perceptions vary between groups (Cole et al., 2011; Dawson, González-Romá, Davis, & West, 2008), others have shown that perceptions within groups are consistent or homogeneous (Klein & Kozlowski, 2000a). In fact, multilevel modeling is premised on the notion that there is some homogeneity within groups and some variation between groups. However, in the case of large within-group heterogeneity, the question as to whether or not a climate exists could be raised. Some scholars have found that organisational climate strength (as indicated by management commitment and belief in human resource development) acts as a moderator of the relationship between climate level and workplace engagement (Chaudhary, Rangnekar, & Barua, 2014). Personality seems to exert less influence on safety behavior when safety climate is strong (e.g., Lee & Dalal, 2016). Yet some empirical studies linking organizational change climate to psychosocial factors (role ambiguity, role overload) and distress have found no evidence of a moderating effect of climate strength (Rafferty & Jimmieson, 2010).

PSC Strength

While the benefits of a high PSC level have been well-established, climate strength is considered by some scholars as an important yet "unattended scientific construct" (González-Romá et al., 2002, p. 465), still to be explored in relation to the PSC model.

There are several reasons why we consider that PSC strength could add to our understanding of how PSC works.

First, when we consider how PSC links to behavioral reactions such as emotional exhaustion and engagement, a set of processes may prevail, as explained by situational strength. PSC may be assessed as group perceptions of policies, practices and procedures in relation to worker psychological health, where "subjective" perception itself has meaning. For instance, PSC acts as a safety signal. When PSC is strong and at a high level within a work group, the signal that psychological health is a priority and workers can rely on resources to manage demands, is reliable and high. In this positive scenario, emotional exhaustion would be lower than when the signal is weaker (less reliable), but still at a high level overall. When the signal is low, and reliable, we expect high levels of exhaustion—workers know that they are not cared for. Demands are likely to be high, and resources, even if available may not be utilized. In the case of a low-level signal that is unreliable, again expectations of psychological safety would be low and those of emotional exhaustion high. PSC acts as a safety signal also indicating when it is safe to utilise resources to manage taxing demands, averting the experience of distress. For example, a police constable may only use discretionary authority to reprimand difficult offenders when PSC is high—they are certain of the sergeant's support should something go awry. Several studies show that the interaction between PSC and resources predicts distress (e.g., Dollard & Bakker, 2010; Dollard & Karasek, 2010; Law, Dollard, Tuckey, & Dormann, 2011).

In relation to motivational reactions such as work engagement, we expect that the reliability of the high-level safety signal of PSC would strengthen engagement. In line with social exchange principles, we expect that when workers perceive that the organisation is concerned for their psychological health, they will respond with

increased levels of pro-organizational actions, such as engagement (Blau, 1960); when they perceive that the signal is high but unreliable, or when the signal is low (whether reliable or not) we expect much less engagement.

A different set of processes may be theorised when we consider how PSC strength adds to our understanding of how PSC level relates to work conditions. PSC is largely influenced by leaders' beliefs and values (Howard-Grenville, Bertels, & Lahneman, 2014). If leaders of an organisation are concerned about worker psychological health they will introduce policies, practices and procedures designed to influence the psychological health of workers. One likely target is work conditions, so we expect that PSC will predict future work arrangements. PSC is conceived as a property of the organization, and a typical way to observe it is through aggregation of employee responses at the unit (team or group) level. In relation to how PSC relates to work conditions, PSC strength may increase the *reliability* of the "objective" PSC observation by employees and its prediction of work conditions.

Operational Definition of PSC Strength

There are a variety of indices available to compute climate strength (the degree of consistency within work units). Burke, Finkelstein, and Dusig (1999) have compared these indices in a systematic study and outlined the practical issues related to the application of the most commonly used indices. Compared with other climate strength indices, the standard deviation is relatively easy to estimate and understand (Roberson et al., 2007), and is considered to be the most reliable and suitable index to represent the amount of agreement or consistency within a work group (Lindell & Brandt, 2000; Schmidt & Hunter, 1989). Technically, as an indicator of dispersion/variability standard deviation (SD) is a measure of weakness rather than strength (Lee & Dalal, 2016), so in our study we multiplied PSC SD by -1 such that higher scores indicated higher PSC

strength. When employees within the same group (unit, organization) hold different perceptions of the organisational climate (as indicated by a higher SD), then climate strength is weak; when the perceptions are highly shared the climate is strong. Consequently, applied to employees' scores on the PSC scale, a higher within-group consistency score would signify high PSC strength.

The Current Study

Our study proposes a multilevel framework to understand the effects of PSC level, PSC strength, and their interaction on work conditions (psychosocial risks), health (emotional exhaustion) and work (engagement) outcomes (see Figure 4.1).

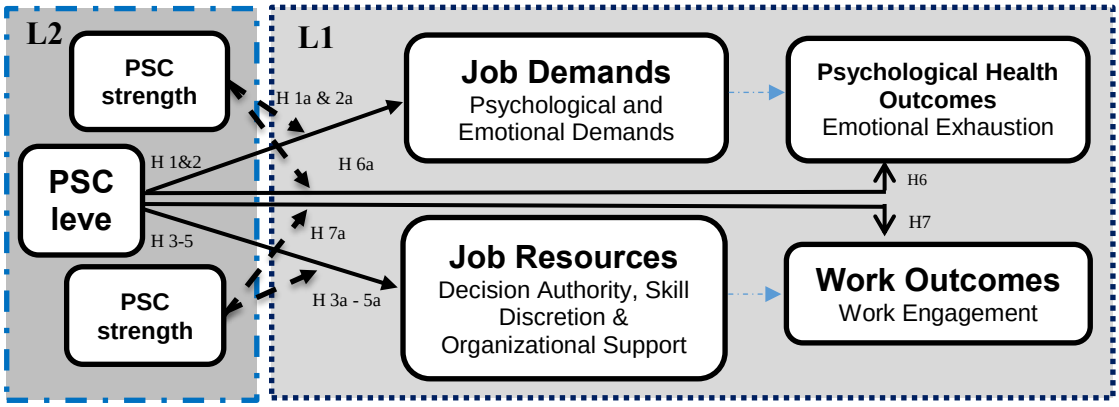


Figure 4.1 PSC Level, PSC Strength and Job Demands-Resources Model (JD-R)
Note: ⇢ These relationships between JD-R and the outcomes were not analyzed in the current study.

Our first set of hypotheses is based on the extended PSC JD-R model, where PSC level is operationalised in terms of the aggregated or average level of PSC at the work unit level. First, we expect that PSC level is negatively related to work demands perceived at the individual level: specifically, PSC level is negatively related to psychological (H1) and emotional (H2) demands. Second, we expect that PSC level is positively related to individual level job resources, decision authority (H3), skill discretion (H4), and organisational support (H5). Third, in terms of health and work outcomes, we expect that PSC level will be negatively related to individual level emotional exhaustion (H6) and, positively related to individual level work engagement (H7).

For the reasons outlined above, we expect the observed influence of PSC level to be strengthened when PSC strength is taken into account. Therefore, for each of the hypothesized main effects we now propose a corresponding interaction effect (designated ‘a’). Specifically, we expect that when PSC strength is higher, the effect of PSC level on individual-level job demands (H1a-H2a), job resources (H3a-H5a), and health (H6a) and work (H7a) outcomes at the individual level will be stronger. Note that

mediation paths as implied in Figure 1 have been tested in prior research and testing them here was beyond the scope of the present study.

This study examined PSC level and PSC strength using a sample from the health care (hospitals) setting. It is important to examine how PSC operates in these contexts because they are high demand, stressful work environments (McTiernan & McDonald, 2015), where psychological demands (e.g., workload and pressure; Bronkhorst, Tummers, Steijn, & Vijverberg, 2015; Michie & Williams, 2003), and emotional demands (role conflict) are important psychosocial risks to worker mental health (Laschinger & Leiter, 2006). Within hospitals specifically, emotional demands (e.g., emotional labor and emotion work) are negatively, and job resources (e.g., social support) positively, related to health and well-being (Pisaniello, Winefield, & Delfabbro, 2012). The current study focuses on hospital contexts because of their diverse work units with distinct managers likely give rise to variation in PSC level and strength at the unit level, enabling us to study these phenomena and consider the potential implications of PSC in the development of healthy hospital workplaces.

Method

Participants and Procedure

Two hundred and forty-nine (249) employees from three South Australian private hospitals took part. Participants were employed across 21 work units, with an average of 10 participants per unit. The three hospitals were owned and managed by the same company.

Prior to giving consent, all participants and their supervisors received information about the nature and purpose of the research and were assured of voluntary participation, anonymity, and confidentiality of responses. Researchers had a scheduled

appointment list to determine the most suitable time to approach nurses without work interruption. Questionnaires were distributed for completion via hard copy or iPad tablets, and the investigator remained on hand to answer questions. Completed questionnaires were returned directly to the researchers (via post, collection by researchers, or electronically) without organizational veto or scrutiny. Ethics approval was given by the University of South Australia's human research ethics committee.

Design

The research was multilevel, cross-sectional based on self-report data. Data from the individual level were nested within work units. Consistent with Baker and Salas (1997), in the present study, work units were a team with two or more employees who had an identifiable supervisor, had specific role assignments, performed specific responsibilities interdependently, and interacted with each other to achieve team goals (Arthur, Bell, & Edwards, 2007). Given the multilevel nested nature of the data we used hierarchical linear modeling and HLM7.1 software (Raudenbush, Cheong, Congdon, & du Toit, 2011).

Measures

Measures were classified into three main categories: PSC (level and strength), job conditions (demands and resources), and health and work outcomes.

PSC. PSC team *level* was measured using a referent shift consensus model (Chan, 1998), whereby questions were asked in relation to the team ("in my team …"), which presumes the homogeneity of individual perceptions within the work groups. Prior PSC research supports PSC level as a measure of shared workplace perceptions, and confirms the interdependent nature of PSC constructs (Dollard et al., 2014; Kwan et al., 2016; Zadow et al., 2015a). The predictive validity (Dollard, 2012; Dollard &

Bakker, 2010; Law et al., 2011), construct validity (Hall, Dollard, & Coward, 2010), and conceptual distinctiveness (Idris et al., 2012) of the PSC scale have been previously reported.

The PSC-12 (Hall et al., 2010) consists of four subscales with three questions in each: (1) management commitment (e.g., "Senior management considers employee psychological health to be as important as productivity"); (2) management priority (e.g., "Senior management clearly considers the psychological health of employees to be of great importance"); (3) organizational communication (e.g., "There is good communication here about psychological safety issues which affect me"); and (4) organizational participation (e.g., "Employees are encouraged to become involved in psychological safety and health matters"). Responses were on a 5-point scale from 1 = *strongly disagree* to 5 = *strongly agree.* The PSC-12 has previously shown an appropriate reliability with Cronbach's alphas of .81 or higher for each of the subscales (Hall et al., 2010). Since all scales are quite highly correlated we used a composite scale, combining domains, and aggregating employees' scores at the team level (α = .96).

Consistent with Roberson et al. (2007), we used the standard deviation (SD) as the most effective index to assess within group variability and thereby capture PSC *strength*. Standard deviation has also been found to be a reliable measure of team level consistency when identification of interaction effects and modeling strength are an aim of the research (Roberson et al., 2007). A high SD indicates high dispersion, or in other words poor climate strength. As mentioned, we multiplied SD by -1, so that high scores indicated high strength. To investigate the moderating effects of PSC strength on PSC level in relation to the other workplace factors, the product of unit PSC strength (-1.SD) × PSC mean level was considered. The predictive validity (Dollard, 2012; Dollard &

Bakker, 2010; Law et al., 2011), construct validity (Hall et al., 2010), and conceptual distinctiveness (Idris et al., 2012) of the PSC scale have been previously reported.

Job Conditions. The Job Content Questionnaire (JCQ 2.0; WWW.jcqcenter.org © Copyright by Robert Karasek JCQ Center) was used to assess job demands and resources. Two types of job demand were assessed: (1) *psychological job demands* (6-item scale; e.g., "My job requires working very fast"; α = .75), and (2) *emotional job demands* (four items; "My work is emotionally demanding; alpha level?"). Certain items were reverse scored as required. Response were on a 4-point scale from 1 = *strongly disagree* to 4 = *strongly agree* (α = .86).

Job Resources. Job Resouces include decision authority and skill discretion. The five items of the *decision authority* subscale of the JCQ 2.0 demonstrated low internal reliability in our study (α =.50). A single reverse-scored item showed low correlations with the remaining items (possibly due to cognitive processing) so we removed it, improving the reliability to α = .68. An example item is, "My job allows me to make a lot of decisions on my own". *Skill discretion* was assessed using the 6-item subscale, e.g., "My job requires that I learn new things." Response alternatives for both decision authority and skill discretion ranged from 1 = *strongly disagree* through 4 = *strongly agree* (α = .72).

To assess *organizational support* as a further resource, we used six items from the (or 'the 6-item') Perceived Organizational Support scale (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). An example item is, "In my organization, management is willing to help me if I need a special favor". For each item, response alternatives ranged from 1 = *strongly disagree* to 4 = *strongly agree* (α = .87).

Psychological Health Outcome. *Emotional exhaustion* was measured using the 5-item Maslach Burnout Inventory, e.g., "I feel emotionally drained from my work".

Response alternatives ranged from 1 = *never* through 7 = *every day* (Schaufeli & Leiter, 1996; α = .91).

Work Outcome. The Utrecht Work Engagement Scale–Shortened Version, 9-item scale (UWES-9; Schaufeli, Bakker, & Salanova, 2006) was used to measure *work engagement.* The UWES-9 comprises three 3-item subscales, each capturing a putative component of engagement (three in all): vigor, e.g., "At my work, I feel bursting with energy"; dedication, e.g., "My job inspires me"; and absorption, e.g., "I get carried away when I am working". Scoring of responses was 1 = *never* through 7 = *every day*, and item scores were summed to form a global measure (α = .90).

Statistical Analysis and Aggregation Procedure

In composition models such as in the current study, individual climate scores are aggregated to higher levels such as the unit or organization, but climate features such as interrater reliability (IRR) and agreement (IRA) need to be considered first (Chan, 1998; Klein & Kozlowski, 2000b). Interrater reliability indicators, such as the intra-class correlation coefficient (ICC) reflect the relative consistency of responses in the evaluation of organizational climate (Klein & Kozlowski, 2000b). By estimating IRA (i.e., r_{WG}) or IRR + IRA (two-way ICC), climate properties may emerge, justifying the aggregation of ratings (LeBreton & Senter, 2007). Both interrater reliability and agreement focus on the extent of similarity of one rater to the others. However, whereas interrater reliability (e.g., ICC) emphasizes between-group agreement, interrater agreement (r_{WG}) highlights within-group agreements (Gwet, 2014; LeBreton & Senter, 2007).

In this study, we used the ICC [1] to estimate the percentage of overall variance due to between unit variance; 15% of the variance in PSC was due to unit level effects. Nevertheless, the level of variation within teams was not uniform, and some teams had

lower, and other teams higher, agreement (i.e., climate strength). Note that whereas ICC is a property of the full sample, climate level and climate strength are a property of each unit. For interrater agreement, we found an acceptable agreement within-units $r_{(WG)(j)}$ = .82, SD = .17. The ICC and $r_{(WG)(j)}$ results together indicate sufficient between-unit difference, and within-unit consistency, to justify conceptualising PSC as a climate construct and aggregating PSC individual scores to the unit level. Our results are consistent with other assessments of PSC at the unit (Dollard & Bakker, 2010, $r_{(WG)(j)}$ =.76, SD = .18; Idris, et al., 2012, $r_{(WG)(j)}$ = .96, SD = .21) and organizational level (Law et al., 2011, $r_{(WG)(j)}$ = .90, SD = .18). Moreover, as a unit level construct, the PSC items are reliable because ICC [2] was .70 which also shows highly acceptable reliability and homogeneity.

Results

Descriptive statistics (means SD, alpha coefficient, and ICC [1]) of the variables and their intercorrelations are presented in Table 1. We estimated the degree of interdependence between PSC level and PSC strength. We found a positive, moderate correlation (r = .53, p < .05) at the unit level indicating that PSC level and PSC strength are conceptually distinct and that the interdependence between them would not create systematic range restriction. The positive correlation between climate level and strength is typical (Cole et al., 2011). The positive correlation is likely because as PSC improves, by definition, there would be increased communication and involvement of employees in psychological health and safety matters, leading to greater uniformity in perception. At low levels of PSC, these aspects, communication and involvement, would be less systematic, and therefore perceptions of PSC would be more varied.

Considering unit level effects, all the correlations of PSC and PSC strength and were computed at the team level first. Descriptive findings strongly support the job

demands and resources (JD-R) theoretical pathways for health and work outcomes in terms of magnitude and direction of relationships. PSC level had significant and expected relationships with all job demands, job resources, and outcomes. Similarly, PSC strength (-1×SD) was significantly related to most other variables except work engagement.

Table 4.1 Means, Standard Deviations and Correlations

	M	SD	α	ICC[1]	1	2	3	4	5	6	7	8	9
1. PSC level	3.29	.46	.96	.15		-.53*	-.82**	-.52*	.51*	.37	.86**	-.73**	.46*
2. PSC strength	.81	.17	-	-	.41**		.29	-.03	-.61**	-.58**	-.41	.35	-.07
3. Psychological demands	2.81	.48	.86	.23	-.30**	-.17**		.51*	-.21	-.20	-.78**	.66**	-.44*
4. Emotional demands	2.74	.62	.88	.27	-.14*	-.11*	.47**		.01	.48*	-.23	.52*	-.36
5. Decision authority	2.72	.45	.68	.07	.14*	.14*	.00	.03		.63**	.44*	-.18	.19
6. Skill discretion	2.84	.45	.73	.50	.26**	.15*	-.02	.30**	.53**		.59**	-.06	.11
7. Organizational support	2.66	.55	.87	.15	.39**	.18**	-.55**	-.30**	.36**	.35**		-.66**	.28
8. Emotional exhaustion	4.04	1.68	.91	.09	-.24**	-.16*	.44**	.39**	-.16*	-.08	-.43**		-.21
9. Work engagement	5.57	1.25	.90	.02	.12*	.04	-.29**	-.19**	.26**	.29**	.34**	-.38**	

Note: N = 249 participants, n = 21 units, * $p < .05$, ** $p < .01$; Correlations above the diagonal are at the unit level, below the diagonal are at the individual level.

Next, we used hierarchical linear modeling to investigate the effects of higher level factors (e.g., PSC level, strength and interactions) on the other measures at the individual (lower) level. In relation to job demands (see Table 4-2), the results show that PSC level was a significant antecedent to psychological demands $B = -.28$, $p < .01$, supporting H1, but PSC level was not significantly related to emotional demands (H2). We examined the moderating effects of the PSC level × PSC strength interaction term on demands, but did not find any significant effects (H1a, H2a).

Table 4.2 Hierarchical Linear Modeling for Job Demands

	Psychological Demands (Model 1)		Emotional Demands (Model 2)	
	Null	H1	Null	H2
Cross-level effects				
Intercept (y00)	2.82***	2.83 (.07)***	2.73 (.07)***	2.73 (.06)***
PSC Level		-.28 (.08)**		-.14 (.16)
PSC Strength		-.23 (.25)		-.39 (.36)
PSC Level × PSC Strength		-.16 (.46)		-.52 (.64)
Within-team (L1) variance (r)	.19	.19	.31	.30
Intercept(L2) variance(u0)	.03***	.01*	.07***	.07***
Additional Information				
2 log likelihood (FIML)	324.72	306.280	427.166	425.009
No. of estimated parameter	2	6	3	6
Pseudo R^2	<.01		<.01	

Note: N = 249 participants, n = 21 units; HLM parameter estimates are B coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean-centered. * $p < .05$, ** $p < .01$, *** $p < .001$

Next, we analysed the effects of PSC on job resources (see Table 3). PSC level had a significant positive effect on decision authority, $B = .19$, $p < .01$ (H3), skill discretion, $B = .30$, $p < .01$ (H4), and organizational support, $B = .46$, $p < .001$ (H5). However, we did not find support for our prediction that the PSC strength would increase the positive effect of PSC level on job resources (H3a, H4a, and H5a).

Table 4.3 Hierarchical Linear Modeling for Job Resources

	Decision Authority (Model 3)		Skill Discretion (Model 4)		Organizational Support (Model 5)	
	Null	H3	Null	H4	Null	H5
Cross-level effects						
Intercept (y00)	2.73(.04)***	2.72 (.06)***	2.83 (.06)***	2.83 (.05)***	2.64(.05)***	2.64 (.02)***
PSC Level		.13 (.07)*		.30 (.11)**		.46 (.07)***
PSC Strength		.27 (.27)		.08 (.24)		.03 (.27)
PSC × PSC Strength		.03 (.45)		.25 (.40)		-.11 (.45)
Within-team (L1) variance (r)	.19	.18	.13	.13	.26	.26
Intercept(L2) variance(u0)	.01***	.01**	.06***	.04***	.05***	<.01
Additional Information						
2 log likelihood (FIML)	292.532	286.997	237.768	230.736	383.924	355.590
No. of estimated parameter	3	6	3	6	3	6
Pseudo R2	<.01		<.01		<.01	

Note: *N* = 249 participants, n = 21 units; HLM parameter estimates are *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean-centered. * $p < .05$, ** $p < .01$, *** $p < .001$

For health and work outcomes (see Table 4-4), PSC level was found to be a negative predictor of emotional exhaustion, $B = -.72$, $p < .001$ (H6) and a positive predictor of work engagement, $B = .44$, $p < .05$ (H8). Finally, while the interaction between PSC level and PSC strength was not significant in the case of emotional exhaustion (H6a), it was significant for work engagement, $B = 2.92$, $p < .05$ (H7a).

Table 4.4 Hierarchical Linear Modeling for Health and Work Outcomes

	Emotional Exhaustion (Model 6)		Work Engagement (Model 7)	
	Null	H6	Null	H7
Cross-level effects				
Intercept (y00)	4.09 (.15)***	4.10 (.11)***	5.58 (.09)***	5.58 (.06)***
PSC Level		-.72 (.23)**		.44 (.18)*
PSC Strength		-.50 (.95)		.55 (.49)
PSC × PSC Strength		.87 (1.50)		2.92 (.83)**
Within-team (L1) variance (r)	2.62	2.61	1.53	1.49
Intercept(L2) variance(u0)	.21**	.03	.02	0.01
Additional Information				
2 log likelihood (FIML)	923.552	921.873	795.257	784.240
No. of estimated parameter	3	6	3	6
Pseudo R2	<.01		.03	

Note: N = 249 participants, n = 21 units, HLM parameter estimates, B coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean-centered. * $p < .05$, ** $p < .01$, *** $p < .001$

The interaction between PSC strength and PSC level in relation to work engagement is graphically presented in Figure 4-4. As shown, the relationship between PSC level and work engagement was stronger in teams with higher PSC strength (i.e., low SD).

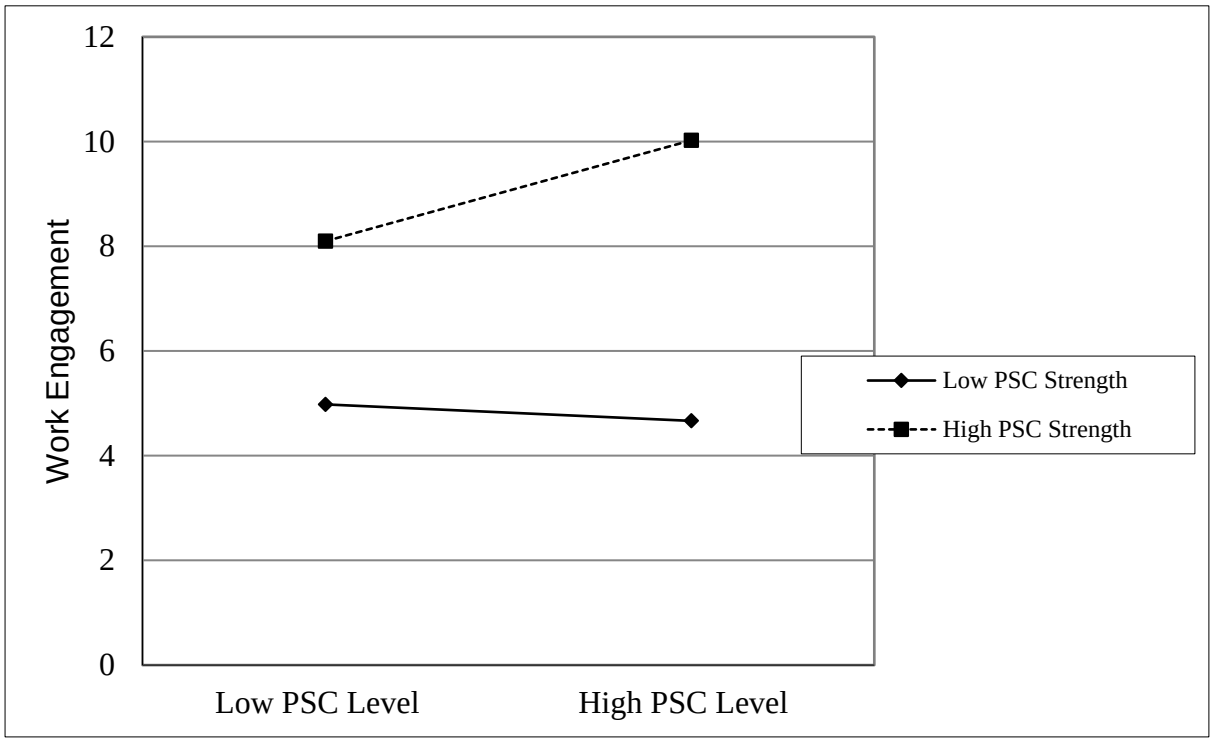


Figure 4.2 PSC Level and PSC Strength Interaction to Predict Work Engagement

Discussion

This study moved beyond the traditional view of organizational climate, and aimed to expand the theory of PSC to a wider understanding of PSC strength or variability within the work unit, rather than focusing on PSC level alone. Our main goal was to explore the effect of PSC level, then the effects of PSC strength as a moderator of the effect of PSC level on working conditions, psychological health, and work outcomes. As expected, in

cross-level relationships, we found that PSC level had a negative relationship with job demands (psychological), and a positive relationship with job resources (decision authority, skill discretion, and organizational support). PSC level is also negatively related to psychological health (emotional exhaustion) and positively related to work outcomes (work engagement). Our research confirms PSC level in units in hospitals as an important precursor to individual reports of workplace risk factors, psychological health, and work engagement. This finding is consistent with other PSC studies across a range of industries and countries (e.g., Afsharian, Zadow, & Dollard, 2016; Dollard et al., 2014; Zadow & Dollard, 2015b).

A new finding is that PSC strength moderates the relationship between PSC levels in relation to work engagement. Within units with high levels of PSC and PSC strength, employees report higher engagement with their jobs. High PSC strength likely results from extrinsic situational factors such as a consistency in the implementation of managerial policies, practices and procedures, and systems for workplace psychological health and safety. With a consistency of implementation comes consistency in perception. In such a case, where both the level of, and consistency in, implementation of caring policies and procedures are high, in accord with social exchange theory, workers are likely to respond with greater pro-organizational behavior, such as work engagement. The implication is that work engagement as a specific behavioral outcome depends on both the consistency and the level of managerial policies, practices and procedures. The finding of this study supports those of Chaudhary et al. (2014).

PSC strength did not contribute to the overall model in interaction or even as a main effect over and above the main effects of PSC level. This implies that the capacity of PSC level to predict working conditions and psychological health is robust and does not depend on PSC strength. Although previous research has suggested that

organizations with a high climate level and strength benefit in several respects (e.g., lower interpersonal conflict and job stress) compared to organizations with low climate strength (e.g., Koopmann, Lanaj, Wang, Zhou, & Shi, 2016; Lee & Dalal, 2016), our research does not support this in general, only specifically in relation to work engagement.

Theoretical and Practical Implications

This study has some important theoretical and practical implications. It highlights the potential productive approach of the PSC framework. In terms of theory, the results support PSC as a predictor or "cause of the causes" of job design psychosocial factors such as demands and resources. In line with earlier theorizing (Bakker & Demerouti, 2016; Dollard & Bakker, 2010), the results support PSC as an upstream extension of the job demands resources (JD-R) model and its outcomes, emotional exhaustion and engagement. The results in relation to psychosocial factors show that PSC level is the more important predictor over and above the main or interactive effects of PSC strength. No theoretical qualification appears required in relation to the importance of PSC level on demands and resources. In relation to outcomes, for work engagement the theoretical link between PSC level and work engagement, in view of the moderation results, warrants qualification. How PSC level affects engagement depends on PSC strength. When the PSC signal is strong and reliable (low SD), workers react with higher levels of engagement, explained by social exchange theory (Blau, 1960). When there is uncertainty (high SD), the relationship is negligible. Reliability of PSC likely builds trust, and hence engagement. As far as psychological effects go, the results support the theory of a main PSC effect.

In terms of practical implications, PSC level alone can reliably and efficiently predict workplace psychosocial risk factors (psychological demands, job control, and organizational support). Based on evidence provided here and longitudinally elsewhere (Dollard & Bakker, 2010), measuring levels of PSC in hospital work units can be used to predict other risk factors and levels of emotional exhaustion in the units. Since PSC is a precursor to other stress risk factors, focusing on building PSC should be an efficient and effective way to reduce work-related risk factors and outcomes in hospital work units. Overall, PSC could be built by implementing pro-worker psychological health policies at the hospital level. At the unit level, building PSC levels across units by strengthening relationships between levels of the organization is important, so that unit or team supervisors can be more active in their implementation of PSC policies set down by senior managers and human resource management in hospitals. Moreover, increased communication and participation by all levels of the organization in the identification of risk factors is likely to lead to their reduction and concomitant decreases in emotional exhaustion. Moreover, the association linking depressive symptoms and emotional exhaustion to patient safety (e.g., Johnson et al., 2017), indicates that the protection of employees' health and safety through PSC could be also beneficial in terms of patient safety.

To improve work engagement, our research indicates that it is important to increase both PSC level and the consistency of implementation of PSC policies and procedures by supervisors within hospital work units. Consequently, hospitals managers need to pay more attention to policies, procedures and practices that concern worker psychological health and safety; supervisors need to pay attention to their consistent enactment, because PSC policies have the added benefit of improving work engagement.

To increase the homogeneity of climate perceptions, teams should have more shared experiences, or they should more frequently share their individual perceptions. More shared experiences could be made, for example, by regular team meetings that are also attended by supervisors or even managers from higher levels, in which all employees receive the same information about the importance (or lack thereof) of psychological health. Similarly, sharing individual perceptions could be fostered by team meetings. The positive impact of such meetings on climate level could be expected the greater the focus is on health issues. Hence, it might be better to have special meetings regarding psychological health issues, rather than pressing this issue into regular meetings. For example, a review of so-called health circles, organizational groups which some German companies established to increase health-related communication and solutions to problems (Aust & Ducki, 2004), revealed that they are an "effective tool for the improvement of physical and psychosocial working conditions and have a favorable effect on workers' health, well-being, and sickness absence" (p. 258).

Common perceptions about PSC are important for work engagement and in turn job performance (Demerouti, Cropanzano, Bakker, & Leiter, 2010). Training programs on the role of PSC in the organization and the importance of uniform translation of PSC principles from the senior management through the middle management and work units within their organizations would be helpful in this respect. Accordingly, the PSC basic elements, managerial support for stress prevention, priority of worker psychological health, and communication and involvement (e.g., Dollard & Bakker, 2010; Dollard & Karasek, 2010), can inform managers who are keen to build PSC as part of a constant progressive plan for their organizations' development (Law et al., 2011).

Strengths, Limitations and Future Research

One of the most important strengths of this study is that it investigated PSC team level and strength and their interaction as the predictors of job demands, job resources, and health and work outcomes. Respectively, focusing on PSC level and PSC strength is a way to consider both the mean and range of employees' perceptions of the consistency (central tendency and dispersion) of the enactment of managerial concerns to protect health and safety problems at work.

Several limitations are acknowledged in this study. First, a cross-sectional design was used, which has its limitations. Causality could not be established with high internal validity. Similarly, possible, yet undetected, reciprocal relations might exist too. For example, the outcomes assessed might have reciprocal effects on PSC level and strength. For example, in teams where several members have physical or mental health conditions, these members could require more PSC than is actually provided, leading to PSC ratings that are biased downwards. As dispersion of health problems among team members increases dispersion of PSC scores might also increase. Longitudinal studies are required to better disentangle such possible reciprocal effects in the future.

Second, is that the limited sample size meant that the multilevel moderation mediation processes could not be comprehensively assessed. Accordingly, future studies should consider including more groups to analyze PSC strength at the unit (or organizational) level. Future studies should also consider PSC strength at the between-organization level using a wide range of organizations from different industries (e.g., mining, education, social services), and from the private and public contexts.

Third, health care hospital workers are exposed to many threats to their psychological health via psychosocial risk factors, and so they are an ideal sample to study psychosocial safety climate. Whereas certain types of risks mostly occur in

particular jobs or tasks (e.g., musculoskeletal problems when lifting patients), others have a greater likelihood to be common across a variety of jobs (e.g., time pressure, uncertainty, role-conflict). Since health care work has been associated with a variety of health problems among, including those involving psychological health (Bronkhorst et al., 2015; Johnson et al., 2017; Michie & Williams, 2003), it is therefore likely that health care workers are exposed to a variety of different risk factors. Only some of them are likely to be physical risk factors, whereas most of them fall into the psychosocial category. Therefore, we feel that the nature of health care jobs makes health care workers highly suitable as a sample to study PSC.

One possible shortcoming could be that focusing on a single type of job implies a restriction of range, reducing the variability of the variables. Reduced variability of demands, resources, PSC levels, and PSC strength might have in turn caused reduced relations among variables. Therefore, compared to broader samples of jobs, our study might thus have revealed weaker relations than actually exist. Still, the ICC [1] shown in Table 1 were all satisfactory or even good. Thus, our multilevel approach was appropriate. Nevertheless, further research should also focus on greater variety of jobs.

Fourth, conducting cross-cultural studies, for example comparing Eastern with Western, Muslim with Non-Muslim, societies, is recommended to understand how Western-style working practices and Western-derived theoretical models of stress apply to different geographical regions and cultures (Brough, Dollard, & Tuckey, 2014). Research in the Asia Pacific as the world's most populous region is especially required, with vast numbers of workers experiencing poor job design and precarious employment (Dollard et al., 2014).

Fifth, even after removing one item of the decision authority subscale the reliability was still lower than ideal .68. One possible reason is that different facets of

control do not necessarily relate to each other, with some participants having high control over some aspects and other participants having control over others (e.g., mixed sample of team leaders and subordinates). Nevertheless, the scale behaved similarly to the study's other measure of job control, skill discretion, and showed the expected relations with measures of other work conditions, health and engagement. Taken together with the observed (and expected) relationship between group-level PSC and individual-level decision authority, these findings support the measure's construct validity.

Finally, future research could use a wider range of engagement and outcome measures, and could triangulate evidence from multiple sources, such as hospital ledgers (i.e., safety incident rates, sickness absence, levels of patient readmission or mortality rates) or use qualitative designs to gain a broader understanding of the influence of PSC in organizations (Idris et al., 2012).

Conclusion

Respectively, PSC level and PCS strength reflect the level and consistency (or conversely, variability) of employees' shared perceptions of managerial priority for workplace psychological health and safety. This study found that PSC level in general is a reliable indicator of psychosocial safety risk factors at work and worker psychological health. However, a better understanding of work engagement is gained by understanding how PSC level interacts with PSC strength: when PSC strength is high, as PSC levels increase so too does worker engagement; when strength is low there is no relationship between PSC and worker engagement. The answer to the original research question is that—"it depends on the outcome". Overall, this study finds that PSC theory does not need to be extended to understand its relationship to work conditions and psychological

health; however, for work engagement, extension to include PSC strength seems warranted.

The PSC model suggests that organizational interventions must change higher level factors like managerial policies and practices to reduce exposure to workplace risk factors (Rickard et al., 2012). Finally, building PSC at the different hospital work groups may reduce demands, build resources, and reduce distress in high demanding work environments like hospitals. PSC theory also offers a comprehensive approach for hospital managers and work group supervisors to generate an effective psychological health and safety climate (high-level and strong) to achieve more productive results through higher engagement.

Chapter 5

Study Three:

Psychosocial Safety Climate from Two Different Cultural Perspectives in the Asia Pacific: Iran and Australia Hospitals



Abstract

Psychosocial safety climate (PSC) may be conceptualized as the organisational practices, policies and procedures for the protection of worker psychological health and safety. To date PSC theory has not been investigated at the boundaries of the Asia Pacific, in Iran, a developing country in the heart of the Middle East. We investigated PSC levels in Iran, and tested the theoretical paths of the extended Job Demands-Resources Model (Dollard & Bakker, 2010). The PSC-12 and work environment, emotional exhaustion and engagement scales were translated into Farsi and administered amongst 33 work groups in an Iranian hospital (N = 257), then compared with an Australian sample of hospital employees (N = 239, across 21 work groups). The findings provide evidence that PSC is a climate construct that exists as a group phenomenon cross-culturally; PSC in Iran has group like properties with around 11% (cf 15% in Australia) of the variance in PSC due to group level factors, with high levels of homogeneity of perceptions of PSC within groups (.92 vs .94 Australia). Australian hospital employees reported higher levels of PSC, skill discretion and decision authority, and lower levels of emotional demands, compared to the Iranian sample. Evidence in support of the climate concept also came from the way it behaved in a nomological network of analyses. The major theoretical paths delineated in PSC theory were confirmed in the Iranian data. Multilevel analysis showed that as a between-group effect in Iran and Australia, team PSC was significantly negatively related to psychological demands, and emotional exhaustion, and significantly positively related to job resources, decision authority, and work engagement. In Australian, an additional significant positive relation-ship was found between team PSC and higher levels of the job resource, skill discretion. The results support the utility of PSC theory in Iran (at least among hospital workers). Given empirical support also from Australia and Malaysia, we argue that workplace assessment of

PSC may be useful to guide the development of organizational systems to prevent workplace psychosocial risk factors across the Asia Pacific.

Introduction

Workplace psychosocial risk factors have negative impacts on workers' mental health and well-being and consequently their productivity and work experience (Dollard, Shimazu, Nordin, Brough, & Tuckey, 2014). The problem of workplace stress and its costs affects many employees across a wide range of occupational groups in Iran (Barzideh, Choobineh, & Tabatabaee, 2014; Lotfizadeh, Moazen, Habibi, & Hassim, 2013; Mosadeghrad, 2013). Knowledge of how work stress theories operate in countries such as Iran is limited (Kang, Staniford, Dollard, & Kompier, 2008; Leka & Cox, 2008). Most theoretical models of stress, tools, items and scales, have been developed in Western countries and have not been tested in populations in the Asia Pacific despite being the world's most populous region (Brough, Dollard, & Tuckey, 2014; Dollard et al., 2014; Shimazu, Schaufeli, Miyanaka, & Iwata, 2010).

Despite the prevalence of work related stress in Iran, and the social and economic consequences, research has not yet examined how managers and organisations can structure workplaces to prevent the development of work related psychological health problems among employees. It is particularly important to test theoretical models cross culturally as cultures think, feel and act differently in relation to issues they experience at work (Iwata, 2014). The nature of the workforce in Iran differs from other countries in the Asia Pacific as a large proportion of the almost 80 million population are young (more than 70 percent under thirty years of age), highly educated (79 percent hold high school diplomas or higher degrees), influenced by a mixture of three different cultural perspectives including Ancient Persian culture, Islamic culture, and more recently Western culture, and the public sector

controls 80 percent of the country's economy either directly (through ownership), or indirectly (through state-affiliated institutions) (Namazie & Tayeb, 2006). Iran is a collectivist country with moderately high power distance relationships in workplaces however the greater number of foreign joint ventures and multinational companies entering the country are influencing these values (Namazie & Tayeb, 2006).

Recently, work stress studies conducted in Iranian organisations have concentrated on organisational safety climate (e.g., Jahanian & Hosaini, 2015) and organisational culture (Abbasi & Zamani-Miandashti, 2013). Research has identified that organisational culture is related to work stress in hospital nurses but is not related to other mental health measures (Ghassemi-Pirbalouti, Ahmadi, & Alavi, 2013). Using multilevel structural equation modeling in a sample of Iranian library staff, organisational climate predicted some psychosocial risks (i.e. job demands) and psychological health issues (Yaminfirooz, Nooshinfard, & Siamian, 2015). The difficulty with measures of organisational safety climate is that they generally measure perceptions of physical safety and do not specifically examine variables that relate to psychological health.

Psychosocial Safety Climate (PSC) (Dollard & Bakker, 2010) is a construct that is distinct from other related climate measures (i.e. physical safety climate, team psychological safety, perceived organisational support) and is superior to other team level climate measures in terms of its ability to predict psychosocial risk factors such as job demands and resources, and also psychological health outcomes (Idris, Dollard, Coward, & Dormann, 2012). PSC theory has not been tested in an Iranian population. A recent study has found that the PSC main elements are negatively related to work place psychosocial risk factors (Amiri et al., 2015). PSC is anticipated to be a more effective predictor of psychosocial risk factors and psychological health in Iranian workplaces than previous general safety climate measures that are not specifically designed for psychological health.

Psychosocial Safety Climate in the Asia Pacific Region

Greater research attention towards understanding the nature and influence of psychosocial risks, and the role of PSC (Dollard & Bakker, 2010) across differing sociocultural contexts is required. Using multilevel techniques the aim of this research is to compare PSC theory in two separate counties in the Asia Pacific region; Iran, to bring new understanding towards the role of the prevention of psychosocial risk in an unexplored area, and Australia, a neo-liberal economy with a strong emphasis on profit and productivity (Kawakami, Park, Dollard, & Dai, 2014). Testing PSC theory in the Iranian population will add to the growing body of literature about the role of PSC across the Asia Pacific region which has been predominantly tested in Australia and Malaysia (i.e. Dollard & Bailey, 2014; Dollard & Bakker, 2010; Idris & Dollard, 2011, 2014b; Idris et al., 2012; Kwan, Tuckey, & Dollard, 2014) (see Chapter 6). This cross cultural research will build knowledge about how PSC theory applies to alternative social-cultural contexts in the Asia Pacific Region.

Theoretical Framework of Psychosocial Safety Climate

Psychosocial Safety Climate (PSC) (Dollard & Bakker, 2010) is defined as the managerial policies, procedures and practices to support employees' psychological health in work environments (Dollard & McTernan, 2011; Radzaz & Bahari, 2013). Theoretically, PSC extends the Job Demands-Resources (JD-R) model (Demerouti & Bakker, 2011; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). According to the JD-R model, psychosocial work aspects can be categorised as job demands – what workers have to do, and job resources – factors that assist workers to achieve work goals. The PSC theoretical framework extends two important paths of the widely used JD-R theoretical model, the health and motivation pathways (Demerouti et al., 2001), by defining the managerial and organisational context preceding the work conditions (job demands and resources).

In the JD-R model the health pathway describes the negative effects of excessive job demands leading to poor psychological health, while the motivational pathway focuses on the role of high levels of resources improving levels of work engagement and well-being. PSC is antecedent to the job demands and resources articulated in the JD-R model, and refers the managerial and organisational conditions that prevent the development of high levels of job demands and insufficient job resources. Consequently, PSC as a higher level construct has been described as a main upstream element in the prevention of work stress and an effective target for intervention (Dollard & Bakker, 2010; Dollard et al., 2014). Since PSC precedes job design, it is likely to predict the level of psychological health problems such as psychological distress and emotional exhaustion via its relationship with job demands, and work engagement through its relationships with job demands such as skill discretion.

Psychosocial health and safety is attracting attention at both national and international levels (Bailey, Dollard, & Richards, 2015; World Health Organization, 2015). This is particularly because continuous exposure to these psychosocial risk factors has been shown to be a robust predictor of psychological and also physical health problems (Biron, Cooper, & Gibbs, 2011). Moreover, reducing the prevalence of workplace psychosocial risk factors can improve job performance and productivity (Dollard & Bakker, 2010).

PSC is designed to protect workers through the prevention of exposure to damaging psychosocial risk factors (Bailey et al., 2015; Dollard & Bakker, 2010; Zadow & Dollard, 2015). To this end, PSC embraces four basic elements; a) management commitment, b) management priority, c) organisational communication, and d) organisational participation (Dollard & Bakker, 2010). Management commitment describes decisive and rapid management intervention to prevent and control occupational issues causing stress at work and support employees affected by the negative consequences. Management priority relates

to the importance given by managers to employees' psychological health and well-being (Idris, Dollard, & Tuckey, 2015). Organisational communication concerns communication about issues affecting the psychological health of employees including policies and practices that facilitate a mutual interaction between employees and managers with the purpose of problem solving and stress prevention in work groups and organisations (Idris et al., 2012). Organisational participation and involvement is characterised by management consulting with employees about psychosocial risk factors at work and engaging employees and other stakeholders such as supervisors, managers, unions, and work health and safety representatives in the development of practices to prevent psychosocial risks throughout all levels of the organisation. Participation is a critical preventive strategy for occupational stress (Dollard & Gordon, 2014). These four domains of PSC are vital elements for organisations looking to prevent and address workplace stress (Biron & Karanika-Murray, 2014).

Even though the PSC model is recent, it is nascent, with a considerable number of studies conducted (e.g. Dollard et al., 2012; Dollard & Bakker, 2010; Dollard et al., 2012; Idris & Dollard, 2011) in different organisations and contexts. They have shown that PSC is negatively related to job demands and poor psychological health (the health erosion path), and positively related to job resources and work engagement (the motivation path). The PSC model was born in Australia and is progressively growing in Asia Pacific countries, with more empirical and longitudinal studies (e.g., Australian Workplace Barometer (AWB)) focusing on PSC aspects in work contexts. Key PSC findings include the moderating role of PSC as a buffer of the effects of job demands and bullying on psychological health (Bond et al., 2010; Dollard & Bakker, 2010; Dollard, Tuckey, & Dormann, 2012; Law et al., 2011), multilevel effects where work group classification is responsible for around 24% of the variance in PSC (Dollard et al., 2014), the application of the PSC model to different cultural

contexts, for example, Australia and Malaysia (Idris et al., 2012; Kwan et al., 2014) and that levels of PSC and subsequent workforce health are influenced by country sociopolitical mechanisms such as national ideology, policy, and power (e.g., union density) (Dollard & Neser, 2013).

This study tested PSC theory in an Iranian population. PSC was examined as a predictor of job demands (e.g., psychological and emotional demands), job resources (skill discretion and decision authority), emotional exhaustion and work engagement (see Figure 1). As one of the first PSC studies in the Middle East, this multi-level and multi-group investigation will expand the PSC boundaries to consider the role of cultural differences. Generally, investigating climate and psychosocial risk factors in developing countries is challenging, complex and almost impossible (Kortum, Leka, & Cox, 2010).

Given the worldwide impact of economic globalisation, technological advances, and the emergence of workplace psychosocial hazards (European Agency for Safety and Health at Work, 2012) it is anticipated that workers in both Iran and Australia will report similar levels of PSC and work conditions. These psychosocial work factors are expected to impact upon workers in Iran and Australia despite their cultural differences. As work related stress is acknowledged as a growing worldwide phenomenon affecting more than 40 million individuals across the European Union alone (World Health Organization, 2008) it is anticipated that Iranian employees will report levels of emotional exhaustion and work engagement, consistent with European (European Agency for Safety and Health at Work, 2012; World Health Organization, 2008), Malaysian (Idris & Dollard, 2014a; Idris & Dollard, 2014b; Idris, Dollard, Coward, & Dormann, 2012) and Australian (e.g. Bailey, Dollard, & Richards, 2015; Dollard & Bailey, 2014) samples. Accordingly we predict no net difference in organisational (PSC) and work conditions and reactions across Australia and Iran (Hypothesis 1).

Previous studies across public and private organisations (e.g., Dollard et al., 2012; Law et al., 2011; Zadow & Dollard, 2015) and countries (e.g., Idris & Dollard, 2014a) have shown that PSC is negatively related to job demands and emotional exhaustion, and is positively related to job resources and work engagement. Across Iran and Australia we expect that PSC at the team level predicts work conditions and outcomes (Hypothesis 2). Testing PSC theory in the Iranian population, and contrasting the results with an Australian sample will add to the growing body of literature about the role of PSC and the management of psychosocial risk factors across the Asia Pacific region.

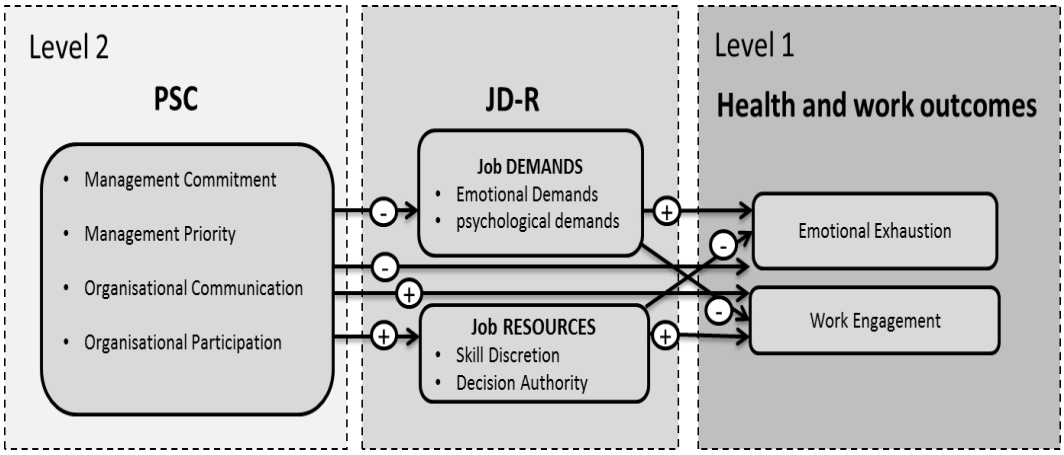


Figure 5.1 PSC Model

Method

This is a multi-group, multi-level, cross-sectional study.

Participants and Procedure

Participants were employees from clinical and non-clinical work groups in Australian (n = 239, 21 work groups, average size = 11) and Iranian (n = 257, 33 work groups, average size = 8) hospitals. To evaluate higher level concepts like PSC only work groups with an identifiable supervisor were approached to participate in the research.

In both countries access to the hospitals was granted by management but researchers could recruit the participants directly, with consideration to the work unit time schedule and priorities. In Australia participants completed the survey using hard copy or IPad surveys, and in Iran, hard copy only. In all cases data derived was given directly to the researchers (via letter, pick up, or electronically) with no organisational scrutiny. Ethics approval was given by the University of South Australia's ethics committee. All the participants were informed about the anonymity of the study and their participation was voluntary. Participants signed a written consent form in Iran.

Instruments

The instruments used in both countries were identical with the exception of language, English in Australia, and Farsi in Iran.

PSC

PSC-12 consists of four subscales each with three items; management commitment, management priority, organisational communication and organisational participation. The 12-item version was developed from the original scale includes 26-item scale developed by Dollard and Kang (2007) as has good validity and reliability (Cronbach's alphas of .81 or higher for all the subscales). The PSC-12 response list is ranged on a five point Likert scale from "strongly disagree" (one) to "strongly agree" (five).

Job Demands

These were assessed using the Job Content Questionnaire (JCQ 2.0) (Job Content Questionnaire Centre, 2012); psychological job demands (six items for the Australian sample and three items for the Iranian sample) and emotional demands (four items) were assessed on a four-point Likert scale from "strongly disagree" (one) to "strongly agree" (four) with reverse items recoded as required. The size of the psychological job demands scale was reduced for the Iranian sample to improve the reliability of the scale.

Job Resources

Job resources were assessed using the JCQ 2.0. In this study, skill discretion (six items) and decision authority (four items) were used to investigate job resources on a four-point Likert scale from "strongly disagree" (one) to "strongly agree" (four).

Health and Work Outcomes

Work Engagement

This consisted of vigor, dedication and absorption with three items measuring each aspect using the Utrecht Work Engagement Scale – Shortened Version (UWES-9) ($\alpha = .91$). A seven point scale from "never" (one) to "every day" (seven) ranged the response list.

Emotional Exhaustion

This refers to psychological awareness of physical and emotional weakness triggered by work issues (Maslach & Jackson, 1981). This was assessed using the five-item Maslach Burnout Inventory ($\alpha = .90$) (Maslach, & Jackson, 1996), with responses on a seven-point scale Likert scale from "never" (one) to "every day" (seven).

Statistical Analysis

Descriptive analysis and t-tests were conducted using the Statistical Package for the Social Sciences (SPSS) (Version 22.0, 2013). Data from the individual level were nested within work unit, and to determine the functional relationships among nested workplace risk factors and phenomena, hierarchical linear modelling is recommended (Meade & Eby, 2007). Hierarchical Linear Modeling (HLM 7) software (Bryk, Raudenbush, & Congdon, 1996) was used for multi-level analysis. Face validity and consistency of the translated Iranian version of the scales were determined by five psychologists and psychiatrists' expert revisions. To confirm the psychometric properties of the research tool a pilot test-retest study on a small group of health care workers in Iran (n =15) was conducted two times within a fortnight.

Results

The group level properties of PSC were assessed using the intra-class coefficient (ICC [1]) which determines the proportion of variance due to the work group, the mean agreement index (r_{WG}) which represents homogeneity of variance within the work groups, and the ICC [2] which represents the reliability of the aggregated measure. The ICC [1] for PSC was .15 in Australia, and .11 in Iran, which indicates that approximately 15% (Australia), and 11% (Iran) of the variance in PSC is due to group level random effects (see Table 1). The r_{WG} (median) = .94 for Australian sample and r_{WG} (median) = .92 for Iranian sample indicates that more than 90% homogeneity of PSC perceptions within hospital workgroups in both contexts (James, Demaree, & Wolf, 1984). PSC was also positively related to job resources and work engagement. The aggregated PSC measure was reliable as the ICC [2] was.97 and.94 for Australian and Iranian data respectively. These results provide justification for aggregating and assessing PSC at the group level.

Descriptives, means, standard deviations, Cronbach's alpha, and correlations between PSC team level and all the variables are presented in Table 1. Notably Cronbach's alpha for the variable, decision authority, demonstrated poor reliability and results involving this variable need to be interpreted with caution.

Table 5.1 Means, Standard Deviations, Cronbach's alphas, and Correlations

	Australia					Iran					Correlations						
	N	M	SD	α	ICC (1)	N	M	SD	α	ICC (1)	1	2	3	4	5	6	7
1. PSC Team Level	227	3.30	.92	.97	.151	257	3.09	0.80	.94	.105	1	-.54**	-.26**	.40**	.38**	-.35**	.41**
2. Psychological Demands	239	2.84	.47	.71	.139	257	2.80	0.48	.67	.040	-.30**	1	.41**	-.08	-.18**	.48**	-.33**
3. Emotional Demands	239	2.74	.62	.86	.252	257	2.97	0.59	.80	.063	-.18**	.48**	1	.30**	-.09	.39**	-.19**
4. Skill Discretion	239	2.85	.44	.73	.047	257	2.75	0.45	.72	.021	.21**	-.03	.20**	1	.45**	-.08	.29**
5. Decision Authority	239	2.72	.49	.51	.058	257	2.34	0.52	.50	.015	.34**	-.26**	-.08	.41**	1	-.19**	.27**
6. Emotional Exhaustion	239	4.05	1.68	.91	.078	257	3.88	1.77	.92	.082	-.39**	.34**	.26**	-.25**	-.27**	1	-.37**
7. Work Engagement	239	5.57	1.21	.90	.089	257	5.62	1.31	.90	.041	.30**	-.18**	-.08	.36**	.26**	-.54**	1

Note: Correlations above the principal diagonal are from the Australian sample and below are from Iranian sample. * $p < .05$, ** $p < .01$ (2-tailed).

Hypothesis 1 proposed no differences between Australia and Iran on the work and health related measures. As shown in Table 2 using the t-test there were no significant differences for psychological demands, emotional exhaustion, and engagement supporting Hypothesis 1; but for PSC team level, emotional demands, skill discretion and decision authority the hypothesis was not supported. Iranian workers reported lower levels of PSC, skill discretion and decision authority, and higher levels of emotional demands than their Australian counterparts.

Table 5.2 Differences (t-test) between Iran and Australia on PSC, Demands, Resources, Health and Work Outcomes

	Australia		Iran			
	Mean	SD	Mean	SD	95% CI	*t*
PSC	3.30	.92	3.09	.84	.08, .38	3.05**
Psychological Demands	2.84	.47	2.80	.50	-.05, .12	.91
Emotional Demands	2.74	.62	2.97	.61	-.33, -.11	-4.04**
Skill Discretion	2.85	.44	2.75	.47	.01, .17	2.33*
Decision Authority	2.72	.49	2.34	.52	.28, .46	8.36**
Emotional Exhaustion	4.05	1.68	3.88	1.77	-.15, .45	.97
Work Engagement	5.57	1.21	5.62	1.34	-.24, .20	-.19

* $p < .05$, ** $p < .01$ (2-tailed). N; Australia = 239, Iran = 257, df = 510. CI, Confidence Interval

Hypothesis 2 proposed that PSC team level predicts job demands, job resources, emotional exhaustion and work engagement. HLM analysis showed that the Iranian and Australian work teams reporting higher levels of PSC also reported lower levels of psychological demands, higher levels of decision authority and work engagement, and lower levels of emotional exhaustion. Australian work teams reporting high PSC also reported lower levels of higher levels of skill discretion (see Table 5.3).

Table 5.3 Multi-level Analysis of PSC Team level (L2) as a Predictor of Level 1 Factors

	Psychological Demands (Model 1)			Emotional Demands (Model 2)			Skill Discretion (Model 3)			Decision Authority (Model 4)			Emotional Exhaustion (Model 5)			Work Engagement (Model 6)		
PSC	*β1*	S.E.	*t*	*β1*	S.E.	*t*	*β1*	S.E.	*t*	*β1*	S.E.	*t*	*β1*	S.E.	*t*	*β1*	S.E.	*t*
Iran	-.17**	.04	-3.95	.03	.11	.28	.11	.10	1.08	.18**	.06	3.04	-.18**	.06	-3.11	.18*	.07	2.48
Australia	-.32**	.07	-4.53	-.14	.11	-1.29	.28*	.12	2.40	.20*	.08	2.57	-.25*	.07	-3.60	.13*	.07	2.03

Note: Iran (N=257, 33 work groups), Australia (N=239, 21 work groups)
*β*1= parameter estimate coefficient, S.E. = Standard Error, *t* = t-ratio
*p < .05; **p < .01

Discussion

Prior studies have not investigated PSC in Iran, a Muslim Middle Eastern country in the Asia Pacific. This study examines PSC, work conditions and psychological health amongst Iranian employees, and compares these results with an equivalent Australian sample, to examine similarities and differences between two Asian Pacific countries. This research is important as Iran has a unique large population of predominantly young, highly educated mainly public sector workers with a complex range of cultural influences, yet knowledge of how work stress theories operate in countries such as Iran is limited as most theoretical models of stress and measurement tools have been developed in Western countries (Brough et al., 2014; Dollard et al., 2014; Shimazu et al., 2010). Clearly it is critical to test theoretical models cross culturally across the Asia Pacific region as cultures react differently in relation to experiences at work (Iwata, 2014). Measuring PSC in Iran enables the assessment of organisational system factors in the creation of the psychosocial work conditions that are a risk factor for work place stress, burnout, depression and anxiety, to develop and set priorities for policies and bench mark progress across the Asia Pacific.

In general, the study identified similarities and differences between the two Asian Pacific countries. Iranian employees reported lower levels of PSC, and the job resources, skill discretion and decision authority, and higher levels of emotional demands, than their Australian counterparts. Yet both the Iranian and Australian workers reported similar levels of psychological demands, emotional exhaustion and work engagement. Multilevel analysis identified that both Iranian and Australian work teams who report low PSC also experience higher levels of psychological job demands and emotional exhaustion and lower levels of decision authority and work engagement. The Australian work teams reporting lower levels of PSC also reported lower levels of skill discretion. These ground breaking research

findings suggest that PSC theory as a predictor of workplace psychosocial risk factors can be applied to Middle Eastern countries such as Iran.

Strength, Limitations and Practical Implication

The strength of this study is the assessment of PSC theory in an unexplored area of the Asia Pacific, the Middle Eastern country of Iran. Translating the survey tool to Farsi and assessing psychosocial risk factors and psychological health amongst 33 work groups in an Iranian hospital represents a new frontier in work stress research. From a practical point of view the findings suggest that promoting high PSC in organisations in Iran will improve the psychological health of workers. Organisations in Iran can use the PSC framework to identify, measure, and monitor organisational psychosocial risk, target interventions, develop policies, benchmark progress, and monitor trends to improve work conditions, productivity, work engagement and the psychological health of employees (Hall et al., 2010).

The complexity of undertaking this new research in Iran has restricted its scope. Future research should consider a larger sample size, including more organisational groups, and longitudinal methodology, as this study is underpowered and restricted in its ability to determine causality. A larger longitudinal sample will enable the examination of the mediated pathways through which PSC influences work conditions and psychological health conditions. The measurement of a wider range of job demands, including bullying and harassment, and job resources such as social support, would provide a stronger understanding of the work conditions that are most prevalent and influential in Iranian workplaces as predictors of workplace psychological health.

Collecting self-report data from different cultural contexts requires the development of trust and cultural sensitivity to respect social structures including morals, religion, politics

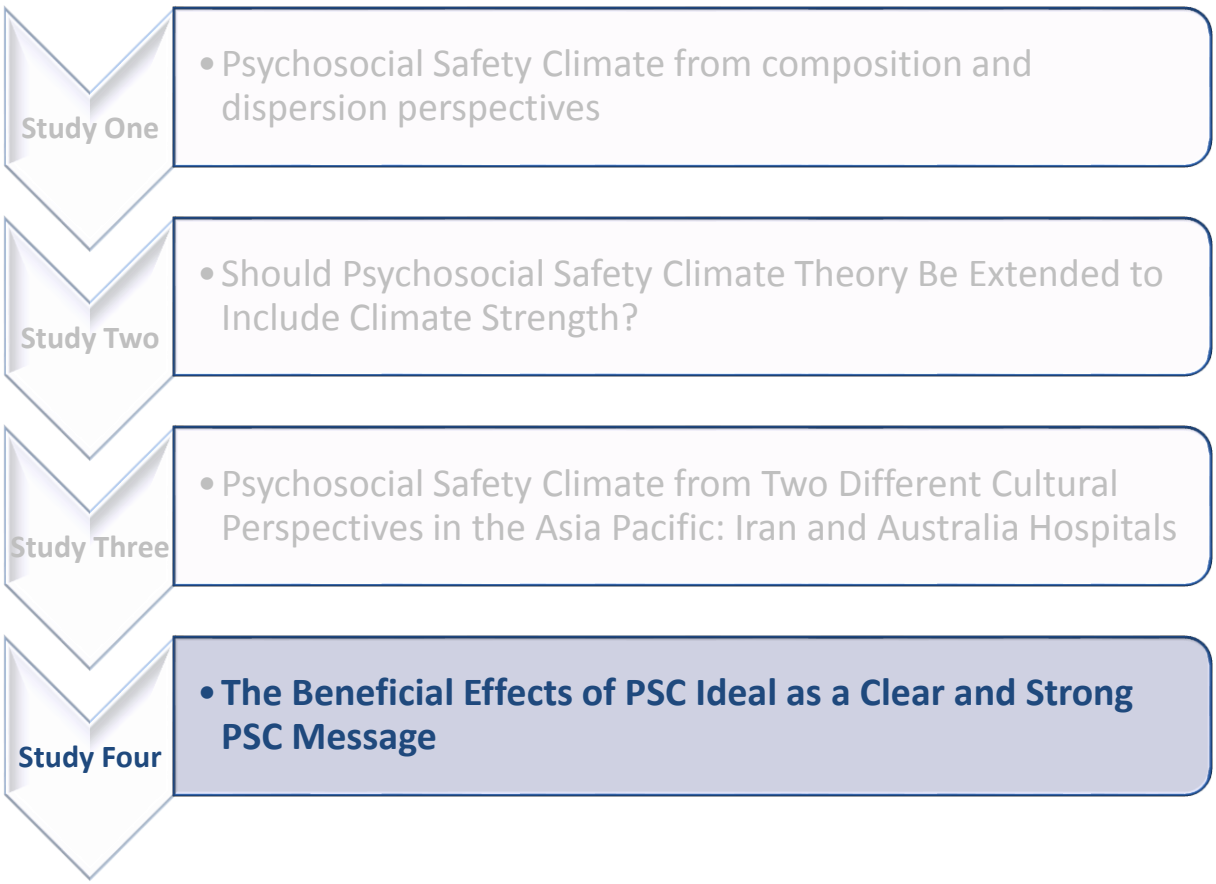
and economic practices (Iwata, 2014). To reduce misunderstanding and confusion about item meanings a combination of qualitative data collection and objective measurement would enrich the findings and shed light on cross-cultural differences in response styles including the use of styles such as acquiescence, extreme ratings, social desirability, or impression management (Iwata, 2014). Triangulating evidence from a range of sources (e.g., injury rates, safety audit material, or patient data), measuring PSC in alternative ways such as evidence of actual policies, practices and procedures for the protection of psychological health, and analysing how leadership styles and psychosocial safety-specific leadership training impact upon PSC levels would add to the evidence base about psychosocial risk in Iran (Zadow & Dollard, 2015).

The present study adds to the literature as it provides support for PSC as a precursor to the work conditions that influence workplace psychological health. For the first time the propositions of the PSC model were shown in an Iranian sample broadening understanding of the assessment of psychosocial risk across the Middle East and supporting previous findings suggesting that the PSC theoretical framework can be applied cross culturally in both Western and Eastern contexts (e.g. Idris & Dollard, 2011; Idris & Dollard, 2012a; Idris & Dollard, 2012b; Idris, Dollard, Coward & Dormann, 2012). Building PSC in hospitals in Iran and Australia is required as we have a social, moral, economic and legal imperative to protect the psychological health of workers across the Asia Pacific region.

Chapter 6

Study Four:

The Beneficial Effects of PSC Ideal as a Clear and Strong PSC Message



Abstract

Psychosocial Safety Climate (PSC) as a new facet of organisational climate refers to the managerial "policies, procedures and practices" to protect employees' psychological health and safety. PSC model is theoretically developed through an extension of Job Demands and Resources theory as one of the well-known work stress theories.

The current study utilized AWB dataset (a sample of 67 organisations including 632 participants) expanding the PSC theoretical boundaries to go beyond the climate mean level to include Climate Strength (Dispersion/ Standard Deviation) and Climate Ideal ($\frac{PSC}{SD}$). SPSS-22 and HLM 7 software were utilized to analyse the data to determine the existing functional relationships among nested psychosocial risk factors and phenomena. One-way ANOVA was used and revealed a significant difference existed between group variance for PSC mean level. ICC-1, $r_{(WG)(j)}$ and ICC-2 were also utilized to measure the shared effects at the organisational level.

Hypotheses were tested and found that PSC Ideal — strong and clear message of PSC at the higher level by high PSC mean and low SD — has the most interactive effects on job demands (psychological and emotional) relationships with emotional exhaustion, psychological distress and depression at the individual level. Theoretical and practical implications were discussed and followed by suggestions for future studies to eliminate the limitations addressed.

Keywords: Psychosocial safety climate, PSC strength, PSC Ideal, job demands, and psychological health outcomes

Introduction

In recent decades, the costs of occupational issues, injuries and diseases have been increased which are assumed to be related to work-related stress (Sokas, Levy, Wegman, & Baron, 2011). Workplace stress with huge costs (Comcare & Safety Rehabilitation and Compensation Commission, 2009; National Occupational Health and Safety Commission, 2012), has been mostly assumed to be a preventable risk factor especially in modern western countries (Clarke & Cooper, 2000). The negative impacts of workplace stress on workers and organisations (Clarke & Cooper, 2000; Guthrie, Ciccarelli, & Babic, 2010; National Occupational Health and Safety Commission, 2012; Parker, 2013), have caused work-related stress to be one of the main psychosocial risks, health and safety concerns in organisations (Law, Dollard, Tuckey, & Dormann, 2011).

As a significant aspect, high prevalence of psychosocial risk factors in modern countries might be due to a higher frequency of surveys conducted to improve the knowledge of workplace situations (Kortum, Leka, & Cox, 2010). For example, In 35 European countries, workplace psychosocial risk factors that affect workers' health were found in 30% claims of the Sixth European Working Conditions Survey (Parent-Thirion et al., 2016). Stress-related complaints and mental health issues have been the main general reasons of early death and inclusive health and well-being concerns in Europe (World Health Organization, 2013). Emphasising on psychosocial safety strategies to prevent and deal with workplace harms and injuries, there has been a necessity to address work-related factors that impact the employees' health and safety (European Agency for Safety and Health at Work, 2011; Häusser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Johnstone, Quinlan, & McNamara, 2011).

Psychological consequences and health issues such as poor physical health (Leka & Jain, 2016), depression (McTernan, Dollard, & LaMontagne, 2013), and low productivity lead to stress at work and general health consequences (LaMontagne et al., 2016). Therefore, the necessity of workplace interventions and prevention has been more highlighted in recent decades to explain the psychosocial risk factors and psychological health and issues (Idris & Dollard, 2016).

Workplace interventions and prevention are more likely to occur in organisations with an appropriate climate. Over the last few decades, organisational climate, as an important construct, has been developed as a topic of studies (e.g., Chen & Huang, 2007; Reichers & Schneider, 1990; Schneider et al., 2013) on work-related stress and injuries. Organisational climate, through which safety climate is reflected, creates an appropriate context to forecast workers' behaviours (Neal, Griffin, & Hart, 2000). Organisational safety climate provides suitable context to investigate behaviours at both micro (individual) and macro (e.g., work groups and organisations) levels (Denison, 1996; Ostroff et al., 2003). Organisational climate theories have been experiencing a rapid movement to become more facet-specific concepts rather than molar concepts. Increased attention towards the employees' health and safety has resulted in a widespread variety of facet-specific organisational climate, such as safety climate (Zohar, 1980). More recently, the 'psychosocial safety climate' (Dollard & Bakker, 2010) has been introduced as a new facet of organisational climate to describe a climate for psychological health and safety (Dollard & Karasek, 2010).

PSC model via the extension of Job Demands and Resources (JD-R) theory was developed (Idris & Dollard, 2016). Soon after, PSC-12 was introduced as a new and the only scale to measure PSC at work (Dollard & Karasek, 2010). Subsequently, the antecedent role of PSC towards the psychosocial risks in working environments has

encouraged researchers to explore how PSC enlightens the psychological health and safety at work (Dollard & Karasek, 2010). In most of the studies conducted so far, PSC has been aggregated as an emergent concept at the higher level that the role of induvial perceptions have been neglected. In the current paper, the PSC level as a new emerging concept (Dollard and Bakker 2010), the PSC Strength (dispersion or variability at organisation) and PSC Ideal ($\frac{PSC}{SD}$) were investigated. The greater portion of Standard Deviation (SD) from PSC Level (mean) signifies greater PSC perceptions. It is expected while PSC mean level is high and has a small dispersion (standard deviation/SD) at the organisational level, PSC message is clearer and stronger for employees. Hence, workers might have improved perceptions of working environments issues, psychosocial risks and supports.

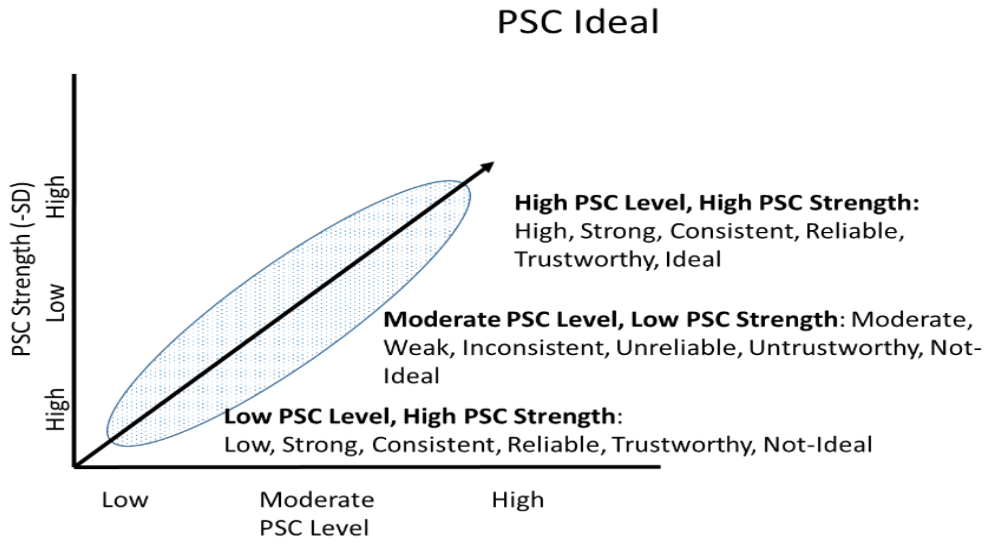


Figure 6.1 The Theoretical Explanation behind PSC Strength and PSC Ideal

Theoretical foundation

Psychosocial safety climate (PSC)

Zohar (1980), traditionally, introduced "safety climate" as a new facet of specific climate in organisations to highlight the impact of workplace physical injuries and risk factors on safety at work (Zohar 1980, 2000). More recent clarifications (e.g., Bailey, Dollard, McLinton, & Richards, 2015a; Dollard & Karasek, 2010; Schulte, Ostroff, & Kinicki, 2006) have argued that the safety climate is not only a concept for the physical injuries but also the psychosocial facets are required to be considered for a wide range of psychological harms and injuries.

Psychosocial safety climate (PSC) refers to "policies, practices, and procedures for the protection of worker psychological health and safety" (Dollard & Karasek, 2010; p. 580). PSC is one of the most widely concepts of organisational climate applied in last decade and has been extensively used to protect the psychological harms and injuries at work (Idris & Dollard, 2016). Focusing on specific outcomes, PSC differs from other organisational climate, especially safety climate. The physical safety or anticipatory procedures of prevention is the main focus of safety climate to preserve workers from any physical injuries; while to support the employees' health and well-being, PSC emphasises the preventive approaches to avoid psychological injuries or harms.

PSC as a specific-facet climate that is an antecedent productive work environment highlights role of managers to protect employees' health and safety at. The research suggests that well-known organisational theories like Job Demand-Resources (JD-R) and Effort-Reward Imbalance (ERI) provide strong theoretical background for PSC model (Dollard, Shimazu, Nordin, Brough, & Tuckey, 2014; Owen, Bailey, & Dollard, 2016). Based on these findings, PSC expands JD-R model to manage job

demands and provide better resources which, in turn, positively impact on both individual and organisational outcomes (Dollard & Bakker, 2010; Idris & Dollard, 2014; Owen, Bailey, & Dollard, 2015).

Hall, Dollard, and Coward (2010b) have introduced four key domains of PSC; management priority, management commitment, organisational communication and organisational participation. Management priority deals with prioritizing the psychological health at work as a management role to emphasise the necessities of considering employees' safety and safety over and above job productivity. Management commitment highlights the role of managerial assertive and fast activities to protect employees' psychological health and resolve problems threatening employees' well-being at work. Organisational communication reveals the significance of effective communication to socialize which occurs between the managers or supervisors and subordinates respect to the psychological health and safety issues at work. Organisational participation raises employees' participation and involvement to assure those psychological health issues are well protected for all members at different organisational levels.

PSC from Level, Strength and Ideal Perspectives

Historically, organisational climate has been investigated from two main perspectives; climate consensus and climate dispersion (Ostroff & Fulmer, 2014). In terms of climate consensus or within group agreement on a specific climate, Schneider, González-Romá, Ostroff, and West (2016) have argued that working climate refers to the employees' shared perception about work issues and environment. Therefore, the collective employees' perceptions of their working climate with a specified manager or supervisor are aggregated at team/group and organisational levels. Scholars have measured the

mean of perceptions as an index of organisational climate (Kozlowski & Klein, 2000); however, the role of individual perception would be ignored by considering the mean level climate only. James and Sells (1981) introduced an approach to measure the working climate based on climate dispersion or the variability of climate perceptions to include the employees' cognitive images of their working environments. Even though, both climate level and strength concepts have been well-known and well-utilized by organisational scholars (Afsharian, Dollard, Zadow, Dormann, & Ziaian, 2017), little is known about PSC from dispersion perspective or the significance of considering variability of PSC scores at a higher level to predict psychosocial risk factors at work.

Most of the PSC studies have examined the employees' perceptions by aggregating PSC at the higher levels (Afsharian et al., 2017). The fundamental method of climate investigation has been based on a referent-shift approach to evaluate the working environment. How PSC is defined and how it is evaluated or how the data are collected would be important (Chan, 1998). Referring to the PSC definition earlier mentioned, a referent-shift approach is mostly recommended to use the "I" pronoun in each single item asked and "in my team/group" or "in my organisation" in the response list (Idris & Dollard, 2016).

The different methods to evaluate "individual" and "shared" climate perceptions not only affect the climate definition, but also influence how the climate research is modelled. For example, while some PSC scholars have applied the individual perception approach to examine the employees' perceptions (e.g., Hall, Dollard, Tuckey, Winefield, & Thompson, 2010a), the majority of PSC studies have utilized the shared perception as the main approach (e.g., Afsharian, Zadow, & Dollard, 2016; Idris, Dollard, & Tuckey, 2015; Idris, Dollard, & Winefield, 2011). PSC, as an upstream factor to design working

environments, has been distinctively found as a precursor of psychological outcomes for the individual and work outcomes (Dollard & Bakker 2010; Idris et al. 2015).

PSC mediating and/or moderating effect on job demand, job resources and job controls predicts the work and health outcomes indicates the complexity of research on PSC in both health and motivational pathways (Dollard & McTernan, 2011). PSC predicts unfavourable job environments features which negatively affect the employees' psychological health and well-being (Dollard & McTernan, 2011). Being an important indicator of bullying and harassment at work (Bond, Tuckey, & Dollard, 2010; Kwan, Tuckey, & Dollard, 2016; Law et al., 2011), PSC is also a determining factor of workers' general health and job productivity (Dollard & Neser, 2013). PSC also moderates the relationships between working conditions, outcomes, the effects of demands and bullying on mental health (Dollard & Karasek, 2010; Law et al., 2011). The secondary role also reveals that PSC performs as a safety signal representing some consequences and benefits for employees, and whether or not using job resources are safe to manage and control job demands (Law et al., 2011; Zadow, Dollard, Mclinton, Lawrence, & Tuckey, 2017). It is expected that an ideal situation is when the PSC is high and almost all the employees have similar perceptions of PSC. In this condition, PSC mean level is high and its variability (standard deviation) within organisations is very low. The concept of PSC Ideal, as an impeccable strong climate, represented by PSC level divided by PSC standard deviation (see Figure 2). This study expands the PSC theoretical boundaries to include PSC ideal as a new concept of the most effective PSC situation. It is believed that high level of PSC mean is considerably important to reduce the psychosocial risk factors. PSC Ideal emphasises the role of individual perceptions to consider the role of PSC variability at the organisational levels.

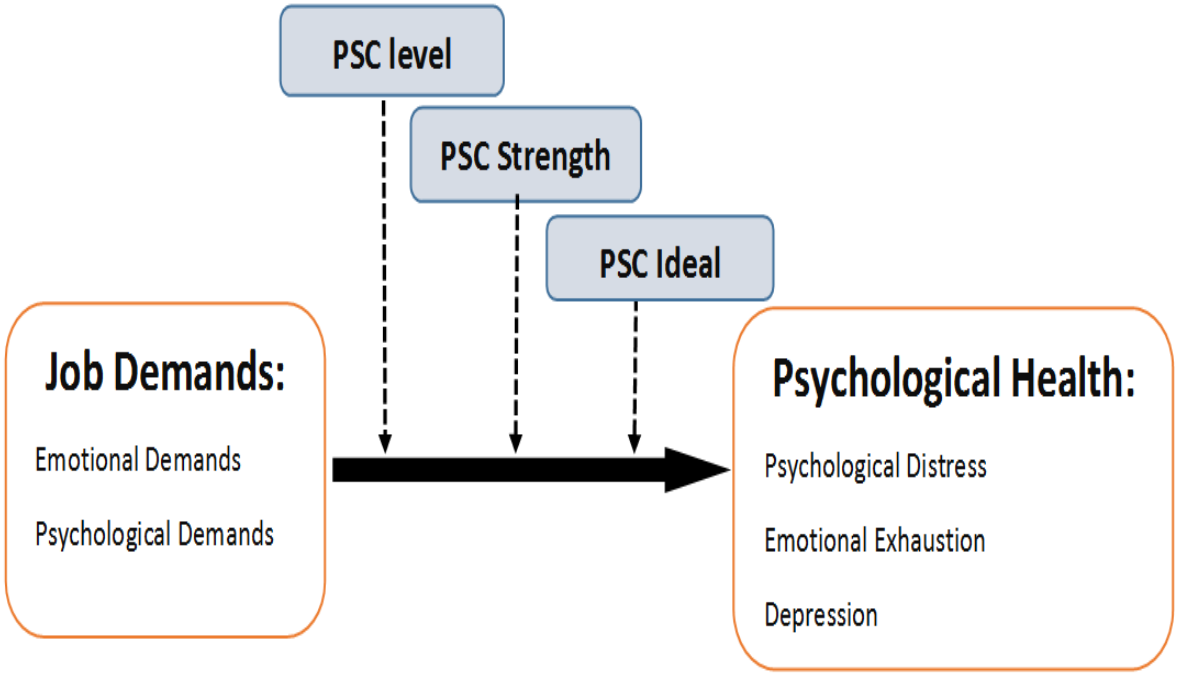


Figure 6.2 PSC Level, PSC Strength and PSC Ideal; the theoretical model of research based on Job Demands-Resources model (JD-R) and PSC theory

Hypotheses

1. PSC (mean level) at the organisational level interacts with job demands (a: psychological and b: emotional) in association with employees' psychological health (i: psychological distress, ii: emotional exhaustion and iii: depression). Specifically, the positive relationship exists between demands and psychological health is evident in conditions of low PSC but attenuated under conditions of high PSC.

2. PSC Strength (-SD) interacts with job demands (a: psychological demands and b: emotional demands) at the organisational level in association with employees' psychological health (i: psychological distress, ii: emotional exhaustion and iii: depression). Specifically, the positive relationship exists between demands and psychological health is evident in conditions of low PSC strength (-SD), but attenuated under conditions of high PSC strength (-SD).

3. PSC Ideal ($\frac{PSC}{SD}$) at the organisational level significantly interacts with job demands (a: psychological and b: emotional) in association with employees' psychological health (i: psychological distress, ii: emotional exhaustion and iii: depression). Specifically, the positive relationship between demands and psychological health is evident in conditions of low PSC Ideal, but attenuated under conditions of high PSC Ideal.

Method

Participants and Procedure

Australian Workplace Barometer (AWB) as a national surveillance tool that integrates collected data from a wide range of industries, organisations and workplaces was used to draw the matched population having multilevel data analysis aims (at least 5 participants at the organisational level with a specified senior manager). The data were stabilised according to company/manager, allowing us to only embrace organisations with at least five employees participated which resulted in including 67 organisations (632 participants). There were 240 male and 392 females ranging from 18 to 71 years of age (M = 47.51, SD = 10.64). The participants were randomly selected from six different states through the Electronic White Pages. An introductory letter describing the study aims along with the contact method (via phone calls) were sent to the potential participants. Finally, they were contacted using computer telephone assisted interviewing (CATI). In this study, volunteer participants from Australian Capital Territory (ACT, n = 85), New South Wales (NSW, n = 111), Northern Territory (NT, n = 33), South Australia (SA, n = 188), Tasmania (TAS, n = 96), and Western Australia (WA, n = 147) could met the inclusion characteristics.

Statistical Analysis

Descriptive analysis was conducted using the Statistical Package for the Social Sciences (SPSS) (Version 22.0, 2013). Hierarchical linear modelling (HLM) (Meade & Eby, 2007) with HLM 7 software (Bryk, Raudenbush, & Congdon, 1996) was recommended to be utilized for the individual level data nested at organisational level as well as for the multi-level data analysis. The functional relationships existed among nested psychosocial risk factors and phenomena could be determined.

Measures

The Australian Workplace Barometer (AWB; Dollard et al. 2009), established at the University of South Australia; Asia Pacific Centre for Work Health and Safety (APC WHS), has been utilised to draw the study measures out of the whole scale.

Psychosocial Safety Climate (PSC-12) Scale

Based on the PSC model, Hall et al. (2010b) invented PSC-12 scale consisting of a 12-item survey to include all four sub-scales in each three items. Therefore, PSC-12 embracing of four main domains; (a) *Management commitment* mainly emphasises on senior management (or in the current study work group supervisors and leaders) to be concerned about workplace stress prevention and intervention, for example '*Senior management shows support for stress prevention through involvement and commitment'*; (b) *Management priority* deals with members' (team or organisation) perceptions of managerial concerns about psychological health and safety over and above work productivity and organisational goals, for instance, '*Senior management considers psychological health to be as important as productivity'*; (c) Organisational communication covers employees' opportunities to advice on psychological health and well-being issues; e.g., '*There is good communication here about psychological safety issues which affect me'*; and (d) Organisational participation which relays on

consulting the health (psychological) and safety concerns of workers' unions and Health and Safety Representatives, for example, "Employees are encouraged to become involved in psychological safety and health matters".

To assess the responses, a 5-point Likert scale was utilised ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). So, a minimum score of 12 to maximum score of 60 are expected for all the12 items aggregated from subscales to provide the total score. Bailey, Dollard, and Richards (2015b) have introduced benchmarks for PSC scale. In the current study PSC was also considered at both team (hospital work groups) and organisation levels. The original scale of PSC was amended to answer the questions based on a response lists provided in two lines; '*In my team (e.g. clinical manager, hospitality manager)*' and '*In my organisation (e.g. CEO, HR)'*.

PSC Strength

Standard Deviation (SD) has been recommended as one of the most common indices to assess variability of concepts at the higher team and organisational levels (Roberson, Sturman, & Simons, 2007). SD is also estimated as a reliable measure of consistency when the interaction effects of climate strength are aimed (Roberson et al., 2007). A high SD indicates a high dispersion (low consistency) and consequently poor climate strength (LeBreton & Senter, 2007). Theoretically, the standard deviation (SD) measures the climate weakness rather than strength; hence, we operationalised PSC strength as the PSC standard deviation reverse coded to be positive at the higher levels (SD × -1). PSC strength indicates that the higher scores as the PSC mean are stronger. The predictive validity (Dollard, 2012; Dollard & Bakker, 2010; Law et al., 2011), construct validity (Hall et al., 2010), and conceptual distinctiveness (Idris et al., 2012) of the PSC measure have been previously testified.

PSC Ideal

According to the purpose of PSC Ideal, a great condition is when PSC message is strongly clear for the employees. Indeed, it is supposed that employees perceive the workplace issues in a same manner. The proportion PSC (mean level) by its standard deviation ($\frac{PSC}{SD}$) reflects how much the PSC is strong and also how less ambiguities are at work.

Job Demands

The Job Content Questionnaire (JCQ 2.0) (Job Content Questionnaire Centre, 2012) was utilised to quantify demands at work comprising of three subscales; psychological demands (five items; α = .74, e.g., '*My job requires working very fast.*') and emotional demands (four items; α = .83, e.g., '*My work places me in emotionally challenging situations.*'). All the items on the self-report survey including the reverse scored questions (e.g., '*I am not asked to do an excessive amount of work.*') were recorded on a 4-point Likert scale ranging as 1 (*strongly disagree*), 2 (*disagree*), 3 (*agree*), and 4 (*strongly agree*).

Psychological Health Outcomes

Emotional Exhaustion

A collection of five items from the Maslach Burnout Inventory (MBI; Maslach, Jackson, & Leiter, 1996) was used to measure emotional exhaustion in this study (α= .87). Items like *'I feel tired when I get up in the morning and have to face another day on the job'* were extended on a 7-point Likert scale ranging from 1 (never) to 7 (every day).

Psychological Distress

To measure psychological distress, all the 10 items of Kessler 10 (K10; Kessler & Mroczek, 1994) were involved to examine how much the participants have experienced signs of anxiety and depressive symptoms during last four weeks (α= .86). For instance, they have been asked *'In the past four weeks, about how often did you feel everything was an effort?'* and a 5-point scale extending the responses from 1 (none of the time) to 5 (all of the time).

Depression

The Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke, & Williams, 1999) was used to measure depression by its all nine items (α= .82). Based on the DSM-IV, these items are strongly related to the nine main criteria of clinical diagnoses of depressive experiences. For instance, participants were asked about depressive symptoms by questions like *'During the last month, how often were you bothered by little interest or pleasure in doing things?'* These items were recorded on a 4-point Likert scale ranging from 1 (not at all) to 4 (nearly every day).

Aggregation procedures

To measure PSC (Level, Strength and Ideal) as the constructs emergent at the higher level which are not sustained just at the individual level, one-way ANOVA was used and revealed a significant between-group variance existed for PSC, F (66, 154. 616) = 1.38, $p < .05$. To measure whether or not they show any shared effects at the organisational level, the Intra-Class Coefficient (ICC-1), the homogeneity of the within organisation variance $r_{(WG)(j)}$ and the organisational level alpha (ICC-2) were utilised. The Intra-Class Coefficient indicated an appropriate between-group variance existed for PSC-12 scale. The ICC (1) of PSC-12 was .15, demonstrating that 15% of the PSC variance could be explained by the between-group variations at organisational level.

The mean $r_{(WG)(j)}$ agreement index (James, Demaree, & Wolf, 1984) was used to assess the homogeneity of variance within organisations. The $r_{(WG)(j)}$ results indicated a sufficient reliability coefficient that could be interpreted accordingly. Efficient homogeneity of PSC perceptions within organisations was achieved via a within-group agreement index ($r_{(WG)(j)}$ [median] = .91.33, SD = .034), which was also considerably higher that the cut-off point >.70 recommended (Bliese, 2000).

The ICC-2 which signified the reliability of the aggregated PSC was utilised to assess the internal consistency of the PSC scale at the organisational level. The high amounts of ICC-2 (.94) achieved indicated that PSC was adequately consistent to be a variable at the higher levels. The internal consistencies of PSC-12 scale were also measured at the organisational level. The average reliablity (α = .94) was larger than the threshold accepted (α = .70) (Nunnally, 1978).

Considering all these aspects, aggregation of PSC to a concept at the higher levels could be justified. The adequate support was provided for emergent of PSC level and the two other subordinate concepts, PSC strength and PSC Ideal, which reflects them all as the organisational level properties.

Data Analysis

Hierarchical linear modelling (HLM) with the HLM-7 software was utilised to test the hypothesis. In order to apply a two-level Hierarchical linear modelling, individual participants were clustered within organisations. Employees (individual; N = 632) at the lower level nested within higher levels (organisations; N = 67). Moreover, Statistical Package for the Social Sciences (SPSS-22), is utilised to build two data sets (level 1; individuals and L2; organisations) to be used in HLM software. Both data sets were matched according to their organisations. The relationship exists between the independents (Job demands; psychological and emotional demands), the moderators (PSC level, PSC Strength and PSC Ideal) and psychological (psychological distress, emotional demands and depression) health outcomes were assessed before hypothesis testing.

Results

Prior to data analysis, the accuracy of all measures were screened to check the missing values, outliers (multivariate and univariate), normality of sampling distributions, linearity and multivariate normality. Using the Missing Value Analysis function in SPSS Software, the data set was screened for the missing values. Then, the Little's MCAR test indicated that the pattern of missing values observed was absolutely at random (Field, 2009). In a random pattern, when few values are missing (approximately < 5%) from a large data set, practically any methods of handling missing data produces comparable results (Tabachnick & Fidell, 2007). Hence, all the variables measured with less than 5% missing values were substituted by the mean. In this study, all of the variables were replaced by the mean. The quantile–quantile (Q–Q) plot was used to observe the normality of the sample distributions. The Q-Q plots are mainly designed for plotting the research variable quantiles against often normal distributions (Field, 2009).

Descriptive results including means, standard deviations, and correlations between all variables confirmed the theriacal background of research as are shown in Table 6.1.

Table 6.1 Means, Standard Deviations and Correlations

Research Variables	M	SD	N	1	2	3	4	5	6	7
1. PSC Level	39.33	10.80	605	-						
2. PSC Strength	-0.13	.86	632	.14**	-					
3. PSC Ideal	-0.12	.79	632	.18**	.79**	-				
4. Psychological Demands	32.66	5.94	632	-.34**	-.04	-.02	-			
5. Emotional Demands	11.17	2.60	632	-.36**	-.15**	-.12**	.54**	-		
6. Psychological Distress	1.51	.51	632	-.29**	-.01	.02	.29**	.28**	-	
7. Emotional Exhaustion	16.74	7.98	632	-.38**	-.02	.01	.50**	.41**	.57**	-
8. Depression	3.74	3.91	632	-.25**	.01	.04	.27**	.26**	.78**	.56**

Note: n = 632 participants, n = 67 organisations, * $p < .05$, ** $p < .01$

Descriptive results; means, standard deviations, and correlations indicated that PSC mean (M = 39.33, SD = 10.80) was over and above the average of national bench mark (M =37.01) for PSC (Bailey et al., 2015b). Positive relationships existed between PSC Level and PSC Strength (r = .14, p < .01), PSC Ideal (r = .18, p < .01) was achieved. In terms of PSC level relation with all the other variables, it has been found to be related to psychological demands (r =-.34, p < .01), emotional demands (r = -.36, p < .01), psychological distress (r = -.29, p < .01), emotional exhaustion (r = -.38, p < .01), and depression (r = -.25, p < .01).

Similarly, a direct correlation between job demands (psychological demands, emotional demands and psychological distress) was found which followed by the direct relationships existed between all the job demands and the psychological health outcomes. Psychological demands were found to be related to psychological distress (r = .29, p < .01), emotional exhaustion (r = .50, p < .01), and depression (r = .27, p < .01). Likewise, emotional demands were found to be correlated with psychological distress (r = .41, p < .01), emotional exhaustion (r = .26, p < .01), and depression (r = .27, p < .01).

Hypothesis testing

Prior to hypothesis testing, linear regression modelling was used to find the anticipatory role job demands to psychological health outcomes. Psychological demands (B = .67, SE = .04, p < .001) as shown in Table 6-2 and emotional demands (B = 1.5, SE = .13, p < .001) as shown in Table 6-3, predicted emotional exhaustion at the individual level. It has been found that psychological demands (B = .02, SE = .01, p < .001) as shown in Table 6-4 and emotional demands (B = .05, SE = .01, p < .001) as shown in Table 6-5, predicted psychological distress at the individual level. Psychological demands (B = .18, SE = .02, p < .001) as shown in Table 6-6 and emotional demands (B = .40, SE = .06, p

< .001) as shown in Table 6-7, predicted depression at the individual level. In parallel with the theoretical background of JD-R model, the research model has been confirmed. Thus, a baseline model (null hypothesis) was first assessed using ANOVA to conclude any sufficient variance occurred to investigate the between organisational variables predicted on lower-level issues.

Hypothesis 1 proposed that organisation PSC (mean level) interacts with job demands in association with employees' psychological health. Specifically, the positive relationship exists between demands and psychological health which is evident in conditions of low PSC is attenuated under conditions of high PSC.

Table 6.2 Hierarchical Linear Modeling for Psychological Demands and Psychological Distress

	Psychological distress					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	1.51 (.01)***	1.51 (.02)***	1.151 (.02)***	1.51 (.02)***	1.51 (.02)***	1.51 (.02)***
L1						
Psychological Demands (PD)	.02 (.01)***		.02 (.01)***	.02 (.01)***	.02 (.01)***	.02 (.01)***
L2						
PSC Level			-.04 (.02)	-.01 (.02)	-.03 (.02)	-.02 (.01)
PSC Strength			-.03 (.02)	-.02 (.02)	-.02 (.03)	-.02 (.03)
PSC Ideal			.06 (.04)	.04 (.03)	.04 (.04)	.04 (.04)
Interactions						
PSC Level × Psychological Demands				-.01 (.01)**		
PSC Strength × Psychological Demands					-.01 (.01)	
PSC Ideal × Psychological Demands						-.01 (.01)***
Within-team (L1) variance (r)	.24	.26	.25	.23	.24	.24
Intercept(L2) variance(u0)	<.01	<.01	<.01	<.01	<.01	<.01
Additional Information						
2 log likelihood (FIML)	905.619	949.425	942.065	883.033	885.284	884.133
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2		<.01				

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand centred. * $p < .05$, ** $p < .01$, *** $p < .001$

Using linear regression, PSC Level at organisational level negatively interacted with psychological demands to predict psychological distress (B = -.01, SE = .01, p < .01) at the individual level (H1a-i) as shown in Table 6-2. As shown in Table 6-3 and 6-4, no support for interacting effect of PSC level with psychological demands could be found when the outcomes were emotional exhaustion (H1a-ii) and depression (H1b-iii). The interaction was plotted to determine the form of the interactive relationship; note that when the interaction is significant then the difference between slopes at low and high levels of the moderator is significant too. As shown in Figure 6-3 and 6-4 psychological distress was lower when the PSC level and PSC Ideal were stronger. At low PSC Level, the regression slope was significant (B = .03, SE = .004, t = 6.51, df = 269, p < .001). However, at high levels of PSC, although the slope was still significant (B = .02, SE = .003, t = 4.65, df = 294, p < .001), there was a large gap in terms of t-ratios achieved.

The regression analysis of PSC Ideal interaction with psychological demands to predict psychological distress indicated that slope at low PSC Ideal levels was significant (B = .03, SE = .003, t = 8.90, df = 332, p < .001) and at the high levels of PSC it was not significant (see Figure 6.3 and 6.4.).

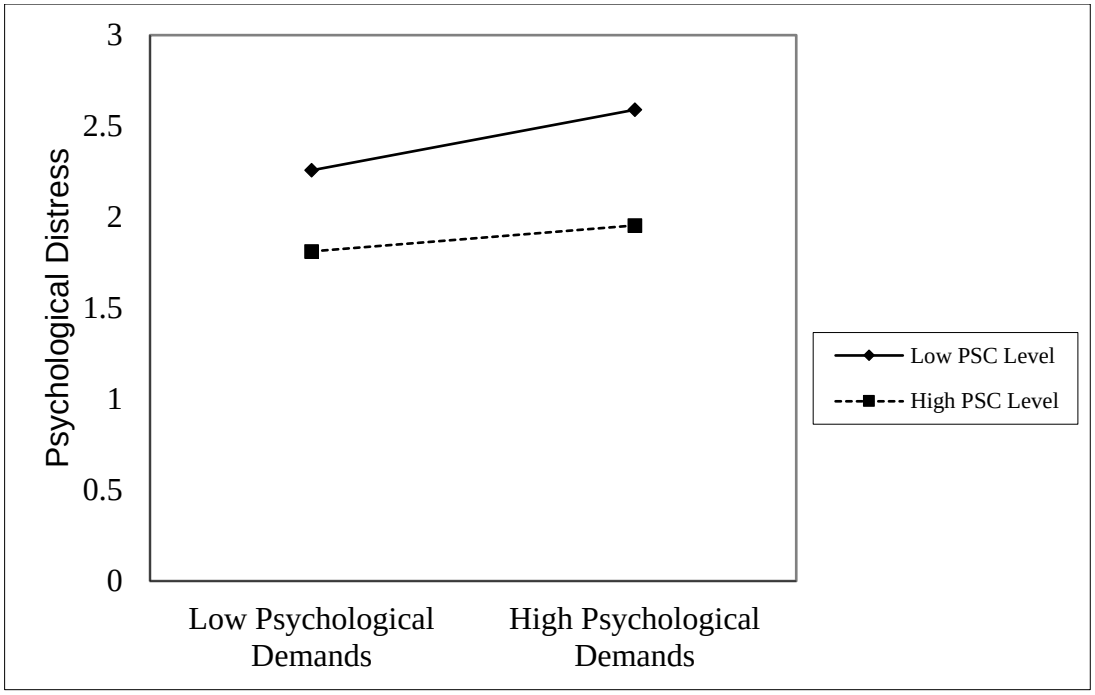


Figure 6.3 PSC Level Interactions with Psychological Demands to Predict Psychological Distress

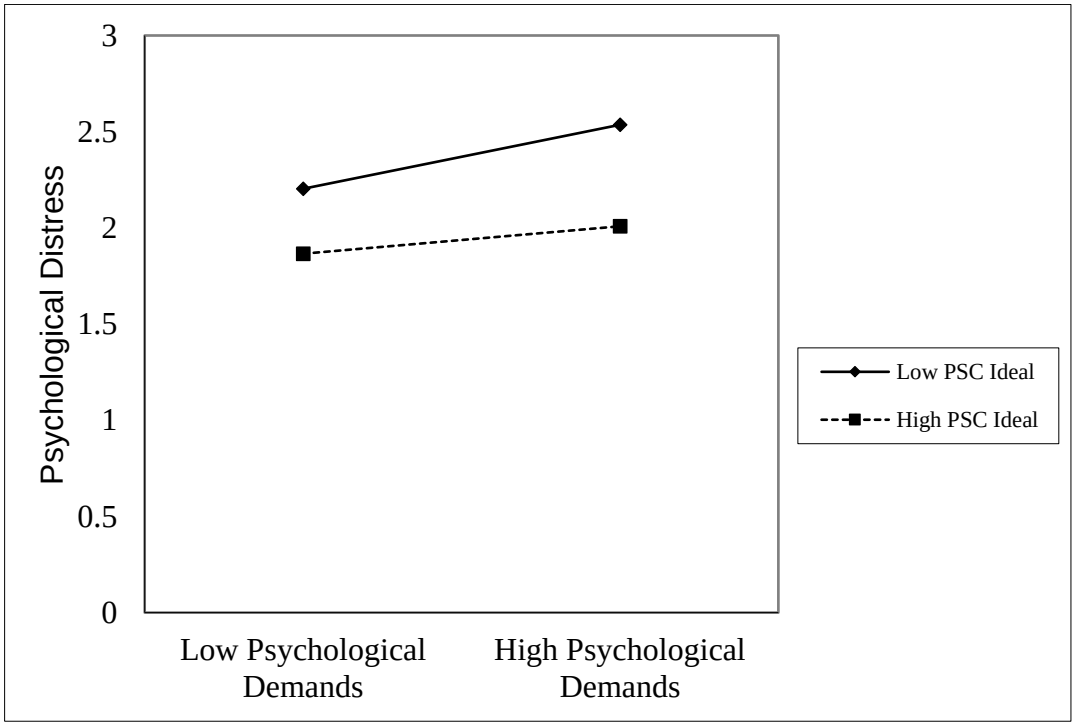


Figure 6.4 PSC Ideal Interactions with Psychological Demands to Predict Psychological Distress

Table 6.3 Hierarchical Linear Modeling for Psychological Demands and Emotional Exhaustion

	Emotional Exhaustion					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	16.75 (.26)***	16.74 (.27)***	16.85 (.30)***	16.81 (.27)***	16.83 (.27)***	16.82 (.27)***
L1						
Psychological Demands	.67 (.04) ***		.71 (.04) ***	.67 (.04)***	67 (.03)***	.71 (.04) ***
L2						
PSC Level			-.53 (.31)	-.56 (.32)	-.55 (.33)	-.55 (.33)
PSC Strength			-.46 (.48)	-.44 (.49)	-.45 (.49)	-.45 (.49)
PSC Ideal			.88 (.54)	.87 (.55)	.85 (.54)	.88 (.54)*
Interactions						
PSC Level × Psychological Demands				-.01 (.54)		
PSC Strength × Psychological Demands					.02 (.04)	
PSC Ideal × Psychological Demands						-.02 (.03)
Within-team (L1) variance (r)	47.70	63.64	62.84	47.32	47.32	47.28
Intercept(L2) variance(u0)	0.7	.02	.02	<.01	<.01	.04
Additional Information						
2 log likelihood (FIML)	4240.114	4416.148	4410.522	4231.225	425.009	4231.146
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2			<.01			

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand centred. * $p < .05$, ** $p < .01$, *** $p < .001$

The next group of hypothesises was PSC Strength (-SD) which significantly interacts with job demands (a: psychological demands and b: emotional demands) at the organisational level in association with employees' psychological health (i: psychological distress, ii: emotional exhaustion and iii: depression). Specifically, the significant positive relationship existed between demands and psychological health in conditions of low PSC strength (SD × -1); however, it was attenuated under conditions of high PSC strength (SD × -1).

Table 6.4 Hierarchical Linear Modeling for Psychological Demands and Depression

	Depression					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	3.74 (.14)***	3.74 (.14)***	3.76 (.15)***	3.74 (.15)***	3.75 (.15)***	3.74 (.15)***
L1						
Psychological Demands (PD)	.18 (.02)***		.18 (.03)***	.18 (.03)***	.17 (.03)***	.16 (.02)***
L2						
PSC Level			.05 (.17)	.12 (.21)	.05 (.18)	.11 (.17)
PSC Strength			-.14 (.28)	-.17 (.28)	-.14 (.28)	-.14 (.27)
PSC Ideal			.32 (.41)	.33 (.41)	.32 (.41)	.30 (.39)
Interactions						
PSC Level × Psychological Demands				-.03 (.03)		
PSC Strength × Psychological Demands					-.06 (.02)*	
PSC Ideal × Psychological Demands						-.09 (.02)***
Within-team (L1) variance (r)	14.16	15.31	14.13	14.09	14.02	13.93
Intercept(L2) variance(u0)	.01	.01	.02	.01	.01	.01
Additional Information						
2 log likelihood (FIML)	3469.491	3517.685	3467.746	3466.458	3463.060	3458.704
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2			-.08			

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean centred. * $p < .05$, ** $p < .01$, *** $p < .001$

In terms of significant interactions effects of PSC Strength and PSC Ideal on psychological demands relationship with depression, the results achieved were piloted in Figure 6-5 and 6-6. Moreover, the regression analysis of PSC Ideal interaction with psychological demands to predict depression indicated that slope at low PSC Ideal levels was significant (B = .02, SE = .03, t = 6.91, df = 332, p < .001) and at the high levels of PSC Ideal it was not significant (see Figure 6.5).

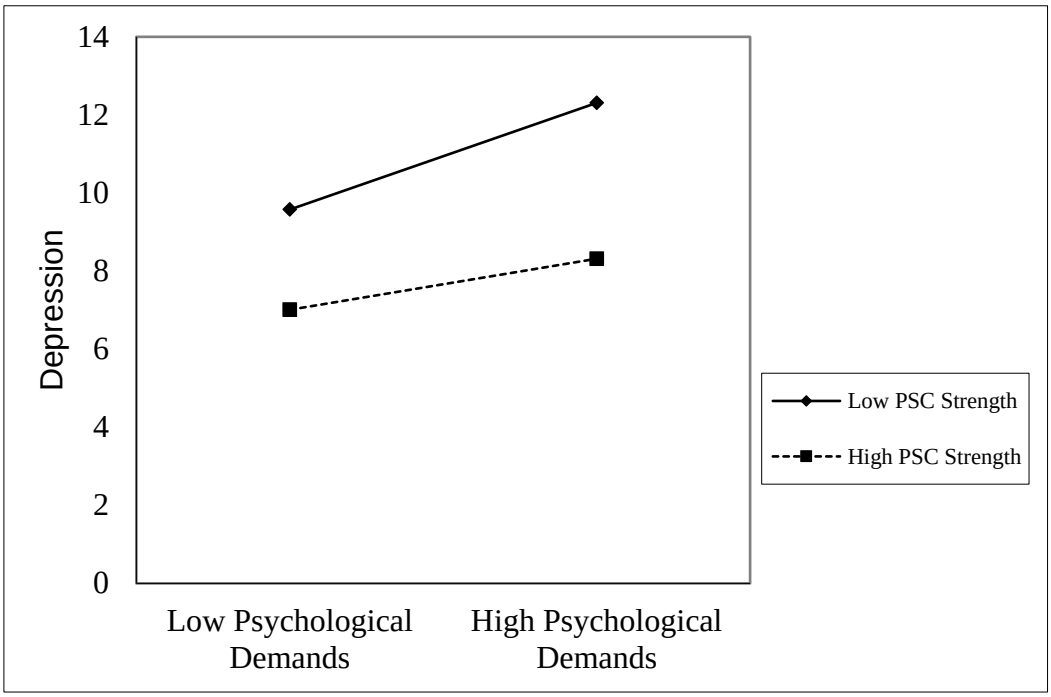


Figure 6.5 PSC Strength Interaction with Psychological Demands to Predict Depression

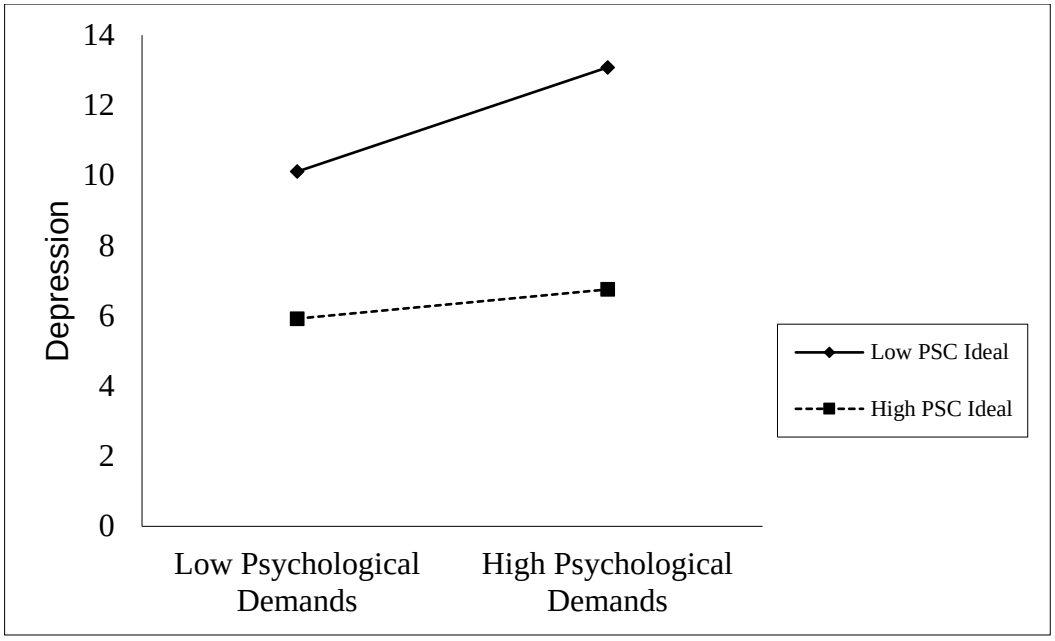


Figure 6.6 PSC Ideal Interaction with Psychological Demands to Predict Depression

The role of PSC Strength was investigated using linear regression, PSC Strength negatively interacted with psychological demands to predict depression (B = -.06, SE = .02, $p < .05$) and at the individual level (H2a-iii) as shown in Table 4. Similarly, results indicated an interacting effect of PSC Strength with emotional demands when the outcomes were psychological distress (H2b-ii; B = -.18, SE = .009, $p < .05$) as shown in Table 5 and depression (H2b-iii; B = -.14, SE = .06, $p < .01$) as shown in Table 7. However, support was found for the existence of interacting role of PSC Strength with psychological demands to predict emotional exhaustion and psychological distress and also with emotional demands to predict exhaustion and psychological distress. To determine the form of the PSC Strength interactions, the interaction was plotted as shown in Figure 6-5, 6-7 and 6-9. Further regressions at low PSC Strength with psychological demands to predict depression revealed that the slope was significant (B = .21, SE = .03, t = 7.66, df = 341, $p < .001$). However, at the high levels of PSC Strength, it was also significant (B = .02, SE = .01, t = 2.39, df = 186, $p < .05$). In terms of the t ratios, we found a big gap existed between low and high level PSC Strength.

Table 6.5 Hierarchical Linear Modeling for Emotional Demands and Psychological Distress

	Psychological distress					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	1.51 (.02)***	1.51 (.02)***	1.51 (.02)***	1.51 (.02)***	1.51 (.02)***	1.51 (.02)***
L1						
Emotional Demands (ED)	.05 (.01)***		.06 (.01)***	.06 (.01)***	.05 (.01)***	.05 (.01)***
L2						
PSC Level			-.02 (.02)	-.01 (.02)	-.02 (.02)	-.02 (.02)
PSC Strength			-.01 (.03)	-.01 (.03)	-.01 (.04)	-.01 (.02)
PSC Ideal			.05 (.03)	.05 (.04)	.04 (.04)	.03 (.04)
Interactions						
PSC Level × Emotional Demands				-.01 (.01)		
PSC Strength × Emotional Demands					-.018 (.01)*	
PSC Ideal × Emotional Demands						-.06 (.01)
Within-team (L1) variance (r)	.24	.26	.24	.24	.24	.24
Intercept(L2) variance(u0)	.01	.01	.01	.01	.01	.01
Additional Information						
2 log likelihood (FIML)	891.694	949.425	888.957	885.846	884.576	886.809
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2			.07			

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean centred. * $p < .05$, ** $p < .01$, *** $p < .001$

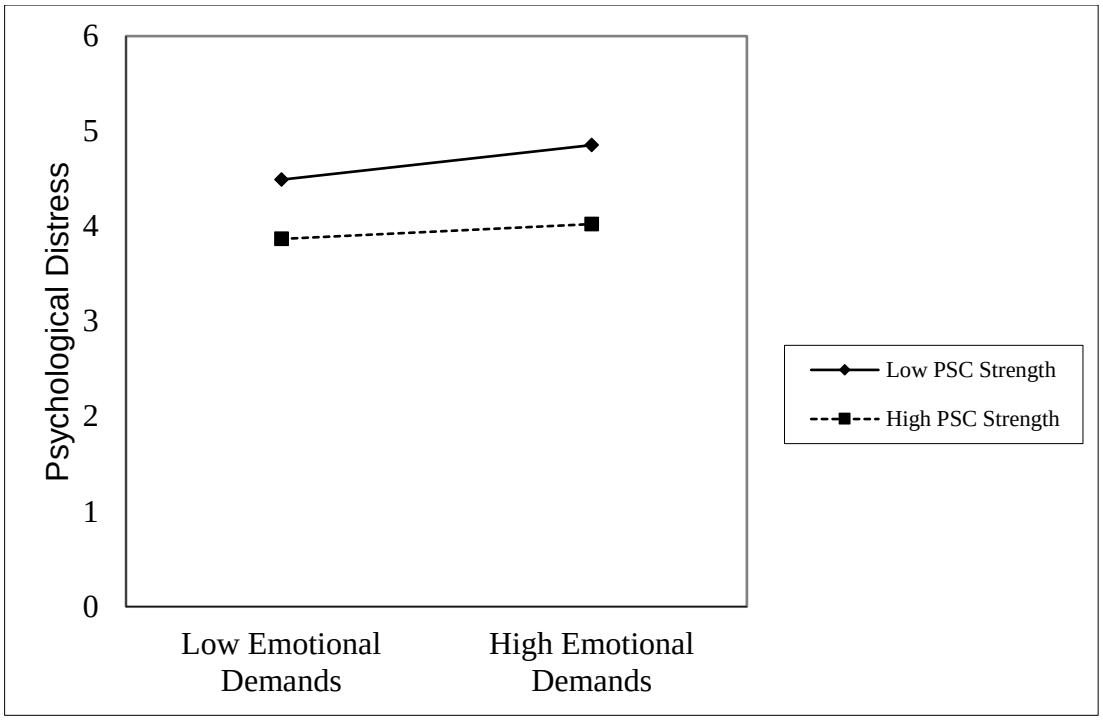


Figure 6.7 PSC Strength Interaction with Emotional Demands to Predict Psychological Distress

It was hypothesised that PSC Ideal (PSC/SD) at the organisational level significantly interacts with job demands (a: psychological and b: emotional) in association with employees' psychological health (i: psychological distress, ii: emotional exhaustion and iii: depression). Specifically, the significant positive relationship between demands and psychological health is evident in conditions of low PSC Ideal; it was attenuated under conditions of high PSC Ideal though.

Table 6.6 Hierarchical Linear Modeling for Emotional Demands and Emotional Exhaustion

	Emotional Exhaustion					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	16.74 (.27)***	16.74 (.27)***	16.85 (.30)***	16.79 (.27)***	16.82 (.30)***	16.81 (.29)***
L1						
Emotional Demands (ED)	1.50 (.13)***		1.27 (.42)***	1.27 (.12)***	1.25 (.12)***	1.24 (.11)***
L2						
PSC Level			-.94 (.58)	-.32 (.40)	-.49 (.45)	-.44 (.42)
PSC Strength			-.70 (.56)	-.26 (.47)	-.19 (.54)	-.14 (.51)
PSC Ideal			1.18 (.46)*	.98 (.43)*	.93 (.46)*	.82 (.49)
Interactions						
PSC Level × Emotional Demands				-.17 (.13)		
PSC Strength × Emotional Demands					-.18 (.12)	
PSC Ideal × Emotional Demands						-.21 (.10) *
Within-team (L1) variance (r)	52.50	63.64	62.84	52.19	52.08	52.21
Intercept(L2) variance(u0)	.05	.02	.02	.08	.19	.09
Additional Information						
2 log likelihood (FIML)	4298.2933	4416.148	4410.522	4293.945	4294.151	4294.458
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2			<.01			

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean centred. * $p < .05$, ** $p < .01$, *** $p < .001$

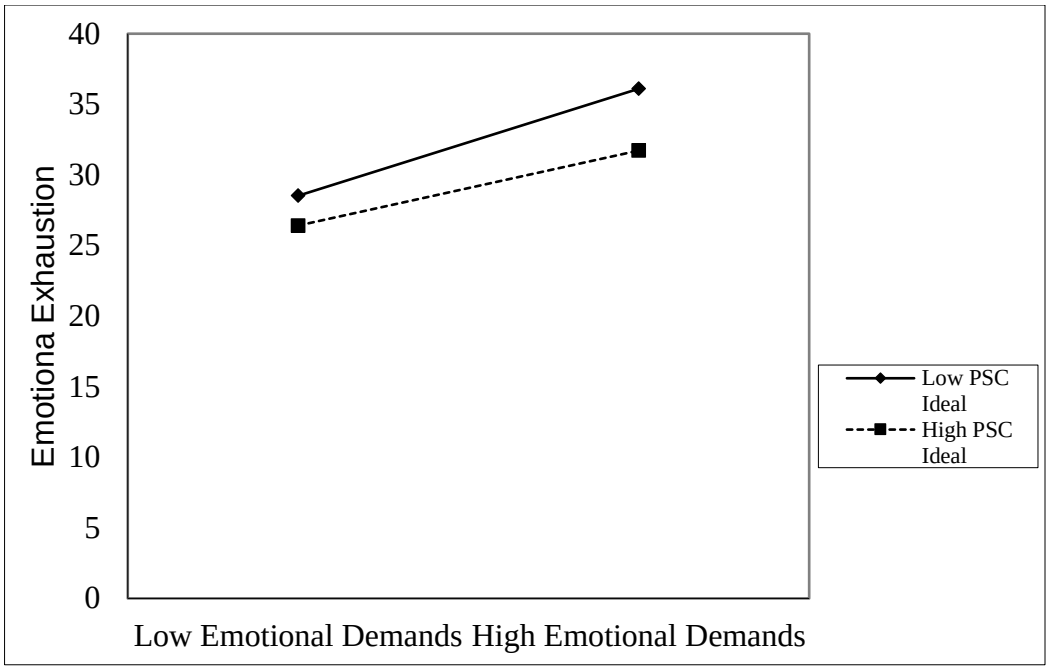


Figure 6.8 PSC Ideal Interaction with Emotional Demands to Predict Emotional Exhaustion

The linear regression analysis indicated the existence of significantly negative interactions between PSC Ideal with psychological demands to predict psychological distress (H3a-i; B = -.008, SE = .002, p < .001) as shown in Table 6-2 and depression (H3a-iii; B = -.09, SE = .017, p < .001) at the individual level as shown in Table 6-4. Likewise, results indicated that PSC Ideal negatively interacted with emotional demands when the outcomes were emotional exhaustion (H3b-ii; B = -.21, SE = .10, p < .05) as shown in Table 6-6 and depression (H3b-iii; B = -.20, SE = .07, p < .001) as shown in Table 6-7. Nevertheless, our results could not either support the existence of any interacting effects of PSC Ideal with psychological demands to predict emotional exhaustion (H3aii). Likewise, PSC Ideal interactive effects on emotional demands could find to predict psychological distress (H3bi). PSC Ideal was plotted to determine the significant interactions between PSC Ideal and job demands (psychological and emotional) as shown in Figure 6-7 to 6-10. Further regressions analysis of low PSC

Ideal interaction with emotional demands to predict emotional exhaustion revealed that slope was significant (B = 1.5, SE = .14, t = 10.96, df = 332, p < .001). However, at the high levels of PSC Ideal, it was also significant (B = .93, SE = .27, t = 3.39, df = 44, p < .01), there was a large gap in terms of t ratio of the low and high PSC ideal level achieved (see Figure 6-8.).

Moreover, the regression analysis of low PSC Ideal interaction with emotional demands to predict employees' depression discovered that slope was significant (B = .50, SE = .06, t = 8.29, df = 332, p < .001), at the high levels of PSC Ideal was no longer significant (see Figure 6-10.). Finally, we re-ran the models controlling for the main effects of PSC level and PSC strength and we found the significant interaction effects as described.

Table 6.7 Hierarchical Linear Modeling for Emotional Demands and Depression

	Depression					
	1	2	3	4	5	6
Cross-level effects						
Intercept (y00)	3.77 (.15)***	3.74 (.14)***	3.80 (.16)***	3.75 (.16)***	3.74 (.16)***	3.72 (.16)***
L1						
Emotional Demands (ED)	.40 (.06)***		.43 (.06) ***	.43 (.06) ***	.40 (.06)***	.40 (.06)***
L2						
PSC Level			.12 (.18)	.19 (.20)	.11 (.19)	.16 (.17)
PSC Strength			-.03 (.27)	-.07 (.27)	-.04 (.29)	-.01 (.28)
PSC Ideal			.33 (.37)	.32 (.37)	.28 (39)	.17 (.39)
Interactions						
PSC Level × Emotional Demands				-.08 (.07)		
PSC Strength × Emotional Demands					-.14 (.06)**	
PSC Ideal × Emotional Demands						-.20 (.07)***
Within-team (L1) variance (r)	14.08	15.31	14.01	13.99	13.91	13.89
Intercept(L2) variance(u0)	.16	.01	.16	.12	.14	.13
Additional Information						
2 log likelihood (FIML)	3472.052	3517.685	3468.222	3466.570	3463.531	3462.618
No. of estimated parameter	4	2	6	8	8	8
Pseudo R2			.08			

Note: n = 632 participants, n = 67 organisations, L1 = individual level and L2 = organisational level, HLM parameter estimates, *B* coefficients with standard errors in parentheses (SE). All the level 2 variables are grand mean centred. * $p < .05$, ** $p < .01$, *** $p < .001$

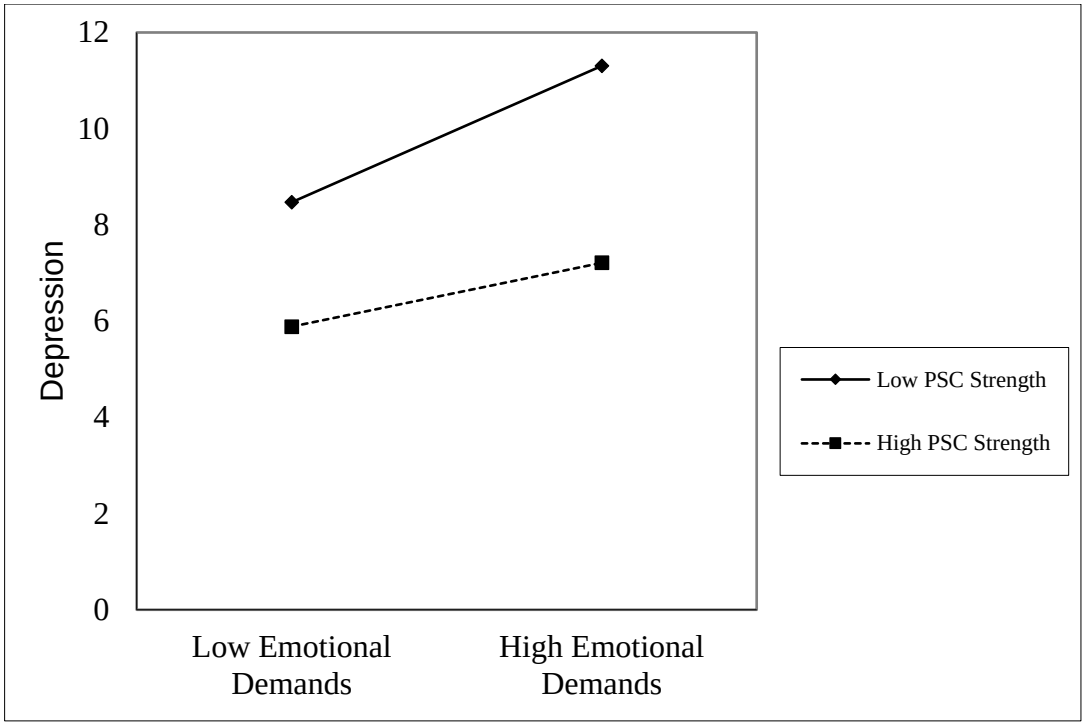


Figure 6.9 PSC Strength Interaction with Emotional Demands to Predict Depression

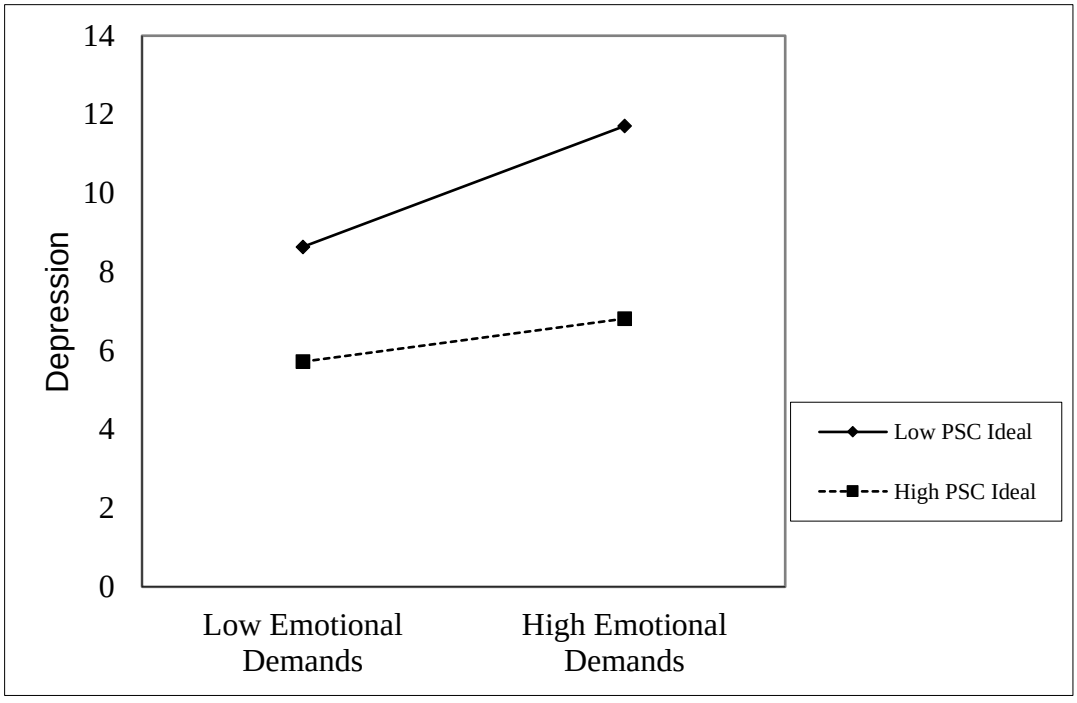


Figure 6.10 PSC Ideal Interaction with Emotional Demands to Predict Depression

Table 6.8 Hierarchical Linear Modeling: Summary of PSC-l, PSC-S and PSC-I Results

Variables		Emotional Exhaustion	Psychological Distress	Depression	No. of sig.
	Moderators				
Psychological Demands	***PSC Level***	×	✓	×	**1**
	PSC Strength	×	×	✓	**1**
	PSC Ideal	×	✓	✓	**2**
Emotional Demands	***PSC Level***	×	×	×	**0**
	PSC Strength	×	✓	✓	**2**
	PSC Ideal	✓	×	✓	**2**
Total		**1 (1/6 ≅17%)**	**3 (3/6 ≅50%)**	**4 (4/6 ≅ 67%)**	**8**

Note: n = 632 participants, n = 67 organisations.

According to the summary of the results (Table 6.8), hierarchical linear modeling indicated that PSC Level had moderating effects on psychological demands and psychological distress while it did not affect other risk factors investigated. PSC Strength could signify an important role in moderating the relationships existed between psychological demands and depression and between emotional demands and psychological distress and depression. The majority of moderating effects was found for PSC Ideal. The moderating effects of PSC Ideal in relationship existed between psychological demands and psychological distress, depression and emotional demands with emotional exhaustion and depression was highlighted. It could be concluded that PSC as a workplace model could be better operationalised to reduce occupational risk factors when employees have shared perception about managerial policies while having less with in group disagreement on workplace issues.

Discussion

Based on PSC mean and dispersion ratio, the current study is the first to operationalise PSC Ideal ($\frac{PSC\ mean}{PSC\ SD}$) providing evidence that PSC Ideal could be considered as an optimal situation at organisational level. The negative interactive effects of PSC Ideal with job demands to predict psychological health issues indicated that psychosocial risks at work might be reduced when the PSC message is clear for the employees. In this study, the foremost contribution was the PSC Ideal application as a new theoretical outline suggesting a multilevel psychosocial pathway to expand PSC theory and predict psychological outcomes.

In terms of theoretical implications, it has been found that when PSC level was high and there is not a wide range of PSC perceptions (low PSC dispersion), employees may report less job demands (psychological and emotional) that also negatively interact

to predict psychological health outcomes in working environments. In the extended JD-R model, PSC Level, PSC strength and PSC Ideal could be specified as key organisational factors.

In relation to the moderating processes, it has been found that PSC Ideal at the organisational level has the most interactive effects on job demands (psychological and emotional) relationships with emotional exhaustion, psychological distress and depression at the individual level. Equally important, PSC Strength moderating effects on job demands relations with psychological distress and depression at the lower levels has been confirmed. Finally, the interactive effect of PSC mean on job demands relationships with psychological outcomes was investigated at the organisational level that was only significant in relation existed between psychological demands and psychological distress.

Moreover, the regression analysis of low PSC level, PSC strength and PSC Ideal interactions with the job demands to predict psychological health outcomes indicated that slope at low PSC level, PSC Strength and PSC Ideal levels were significant while at the high levels of those variables were no longer significant or have a huge gap between low and high levels in terms of *t* ratio amounts. Therefore, the findings suggested that the great and ideal PSC situation would be when PSC mean was high and there was minimum or less disagreement on the PSC perceptions. PSC mean by aggregating PSC perceptions at higher levels might disregard the importance of individual perception. Therefore, PSC Ideal by considering the role of PSC dispersion at the team and organisational level opened a new vista to the role of PSC variabilities at higher levels.

In terms of practical implications, PSC Ideal can be considered as an important factor interacting to reduce the effects of psychosocial risk factors on employees'

psychological health. Based on evidence provided (Dollard & Bakker, 2010), PSC can predict risk factors and levels of mental health issues at different organisational and team levels. Since PSC Ideal is an antecedent of other work related stress risk factors, focusing on organisational climates with high PSC Level and low PSC dispersion (high PSC Ideal) would be an efficient and effective approach to decrease psychological risk factors and outcomes in organisations. Overall, PSC Ideal could be built by implementing pro-worker psychological health policies at higher organisational levels. At the organisational level, by strengthening relationships between PSC levels and PSC dispersion (SD) of the organisation building PSC Ideal across organisations is imperative. The senior managers should actively enact PSC policies set down at organisational and team levels to integrated PSC perceptions and improve PSC outstanding to a high mean level. Senior managers highlight PSC principles like communication and participation and identify the risk factors to decrease the psychological health issues at different organisational levels. In terms of customers' safety and satisfaction, senior managers can benefit from providing a PSC Ideal as a clear message of PSC for employees at different organisational levels.

Strengths, limitations and future research

One of the most important strengths of this study was to investigate PSC from both composition and dispersion perspectives that also combined to introduce PSC Ideal concept as the moderator of job demands associated with psychological health outcomes. Focusing on PSC Level, PSC Strength PSC Ideal was a way to consider both the mean and variety of employees' perceptions of the consistency (central tendency and dispersion) of the performing managerial concerns to keep working environment health and safety.

The generalisability of the results was subjected to certain limitations. For instance, the cross-sectional approach of this study might limit the decision making regarding the effect of unmeasured external variables and causality inference. The cross-sectional nature of the study design, does not allow for a causal inference of PSC level, PSC Strength and PSC Ideal interactions with job demands to predict psychological health outcomes to be established. Through a the longitudinal lens, Dollard and Bakker (2010) found that PSC affected working conditions; however, PSC Ideal could be also considered from a longitudinal perspective to include the external factors influencing PSC Ideal to make casualty inference. Common method variance might be a subject with measures using self-report data (Podsakoff et al., 2003). Based on group discussions and personal interviews, an extra qualitative data collection was needed to be researched in future.

Conclusion

The current study introduced PSC Ideal as a new developing concept in the organisational health and safety literature. The study also delivered a multilevel theoretical support for the moderating role of PSC Level, PSC Strength and PSC Ideal in relation with job demand (psychological and emotional) with psychological health (psychological distress, emotional exhaustion and depression). The stimulus to set the PSC Ideal as a clear and precise message of PSC perceptions was reciprocally beneficial for senior managers to screen the organisations and sub groups to address and evaluate the PSC within and across different organisational levels. Projecting further into the future research, PSC interventions aimed to develop PSC Ideal and evaluate working environments to assure PSC perception had high and cohesive characteristics.

Chapter 7:

Discussion and Conclusion

Introduction

People spend much of their adult lives working. There is no doubt that the psychological aspects of the way work is designed is a major influence on their worker psychological and physical functioning. In occupational health psychology, the Job Demands-Resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), one of the most prominent workplace stress models, deals with two major work design related features; job demands and job resources. PSC model was theoretically developed through an extension of Job Demands and Resources theory one of the well-known international work stress theories, positing PSC as an upstream predictor of job design aspects.

This thesis proposed theoretical refinements to PSC theory – a relatively new and emerging theory in the occupational health and safety literature. This thesis aimed to also find evidence for the multilevel theoretical model of PSC.

This chapter discusses the main findings from the thesis, addressing theoretical and practical implications, limitations, future research suggestions and conclusions. While, PSC is a well-known international model, PSC strength is relatively a new concept. PSC Ideal as an organisational context construct was introduced for the first time in this study. Despite scholars' growing interests in PSC studies, there has been a big gap in the literature, since the majority of PSC examinations have considered PSC levels (at the group and organisation levels) (e.g., Becher & Dollard, 2016; Idris & Dollard, 2016; Owen, Bailey, & Dollard, 2015) rather than the variability in PSC as of specific interest. This thesis aimed at bridging the gap in the literature by adopting a new approach towards PSC level, exploring PSC strength and PSC Ideal - considering the

dispersion of PSC perceptions within a group. The main aims and objectives of the thesis were as follows:

5. Theoretically expand and empirically test PSC theory including PSC Strength and PSC Ideal concepts.
6. Examine these PSC theoretical extensions at the organisational and team level.
7. Test the international cross-cultural generalisability of PSC theory in the Middle East for the first time in a comparison study between Iranian and Australian hospital work groups and combining two data sets together.
8. Discuss the implications of PSC theory and findings for worker health and safety

To address these aims four studies were conducted dealing with PSC, PSC strength and PSC Ideal.

Study One

The first study of this thesis was on Psychosocial Safety Climate (PSC) at the organisational level (see Chapter 3). Accordingly, PSC level (mean) and PSC strength (dispersion) were investigated using an existing longitudinal data set from the Australian Workplace Barometer project which was a large multi-level telephone interview data set collected from different states in Australia. This study yielding a large multilevel sample (67 organisations including 632 participants) enabled an investigation of PSC and PSC strength from a top down view by aggregating individual perceptions across organisations. Results showed that high levels of PSC at the organisational level was still a better predictor than PSC strength of individual level job demands and resources, psychological health and work engagement. Equally important, PSC level (organisations mean) was found to be related to outcomes like psychological distress, emotional exhaustion and work engagement. Additionally, mixed support was found for the PSC

strength hypothesis, that PSC level would have its strongest effect when PSC strength was also high (less variability), since higher PSC strength was only important when PSC level was also high for resources (organisational rewards and supervisors' support) and not demands. Although it is not in line with our theoretical expectation, there is a possible explanation. Perhaps supervisors in organisations that where the PSC levels are high but where there is an inconsistency in how employees see the climate, supervisors might be inclined to work harder to compensate with social support.

Study Two

Considering the importance of middle level management, and supervisor influence within teams, the second study (see Chapter 4) investigated PSC level and PSC strength at the team level. We proposed that PSC level and strength would be interactive predictors of working conditions, psychological health and engagement. PSC strength (measured as unit -1×SD) was revealed to be moderate and positive suggesting that ceiling effects of PSC scores were not problematic. Results showed that PSC level alone was a better predictor of job demands (psychological and emotional demands), job resources (e.g., skill discretion, organisational support), and health (emotional exhaustion) than PSC strength or their interaction effects. There was one exception where the interaction was significant in relation to engagement; the benefits of high levels of PSC for work engagement within the work units, were evident only at high levels of PSC strength (when the variability in PSC perceptions was low). Therefore, the answer to the research question regarding PSC theory extension to include specifications about PSC strength is that – "it depends on the outcome".

Study Three

The third study (see Chapter 5) aimed to expand the boundaries of PSC theory to the Middle East investigating Psychosocial Safety Climate from two different cultural perspectives, Iran and Australia, in the hospital settings.

We investigated PSC levels in Iran, and tested the theoretical paths of the PSC extended Job Demands-Resources Model (Dollard & Bakker, 2010). The PSC-12 and work environment, emotional exhaustion and engagement scales were translated into Farsi and administered in an Iranian hospital, then results were compared with an Australian sample of hospital employees. The findings provided evidence that PSC was a climate construct existing cross culturally as a group phenomenon. In Iran, PSC had group like properties with around 11% (cf 15% in Australia) of the variance in PSC due to group factors (such as hospital ward leadership). Again providing support for the group level properties of PSC, high levels of homogeneity in perceptions of PSC within groups were achieved (.92 vs .94 Australia). In this study, Australian hospital employees reported higher levels of PSC, skill discretion and decision authority, and lower levels of emotional demands, than Iranians.

Evidence supporting the climate concept also came from the way PSC behaved in a nomological network of analysis. The main theoretical paths delineated in PSC theory were confirmed in Iranian data. Multilevel analysis showed that as a between group effect in Iran and Australia, PSC was negatively related to psychological demands, and emotional exhaustion, and positively related to job resources, decision authority, and work engagement at the team level. In Australia, an additional significant positive relationship was found between PSC and higher levels of the job resource, skill

discretion, at team level. The results significantly supported the utility of PSC theory in Iran (at least among the hospital workers).

Study Four

The fourth study (see Chapter 6) investigated the beneficial effects of PSC Ideal that signified the vital role of PSC when the message was clear and strong (PSC levels adjusted by the variance). This study introduced a new concept in Psychosocial Safety Climate (PSC) theory that combined mean and dispersion indices.

The current study expanded the PSC theoretical boundaries to go beyond the climate mean level and to include Climate Strength (Dispersion/ Standard Deviation) and Climate Ideal (PSC/SD). We tested the hypotheses and found that PSC Ideal — strong and clear message of PSC at the higher level by high PSC mean and low SD — had the most interactive effects on job demands (psychological and emotional), emotional exhaustion, psychological distress and depression at the individual level.

Theoretical Implications

In this section, the theoretical contributions of the thesis will be presented based on the research aims and the main findings.

To achieve the aims mentioned, this PhD project expanded the investigation of PSC looking at this concept from the mean (e.g., PSC mean level) and dispersion (PSC Strength and PSC Ideal) perspectives. Equally important, PSC was investigated at the team (hospital work groups) and organisational (AWB) levels. Finally, PSC theory was examined beyond the cultural boundaries comparing Iranian and Australian samples.

To begin with, we worked on an existing data set, Australian Workplace Barometer. As was found by previous research studies (Clark, 2015; Dollard & Bakker,

2010; Dollard & McTernan, 2011) that PSC could predict job design factors and high PSC could prevent the psychological risk factors, this study discovered that in larger organisations, PSC was still a better predictor than PSC Strength of job demands, resources, psychological health and work engagement. PSC level (organisations mean) was found to be related with outcomes like psychological distress, emotional exhaustion and work engagement. So that higher PSC strength was only important when PSC level was also high for organisational rewards and supervisors' support.

To confirm the results, PSC was found to have impact on employees' physical and psychological health and motivational outcomes (Zadow, Dollard, Mclinton, Lawrence, & Tuckey, 2017).

The results of this study contribute to theoretical knowledge by endorsing the expansion of JD-R theory to include PSC as a contextual factor that is a stimulus for both the health and motivational pathways of the JD-R model (Bakker, Demerouti, & Euwema, 2005; Hakanen et al., 2006; Law, Dollard, Tuckey, & Dormann, 2011).

Having considered PSC Strength at the organisational level which has not been supported by research hypothesis, for the next study, PSC Strength was investigated at team level in one of the most demanding working environments, hospital work groups (Study Two, Chapter 4). Similarly, PSC level was found to be a better predictor than PSC strength or their interactions for job demands (psychological and emotional demands), job resources (e.g., skill discretion, organizational support), and health (emotional exhaustion). For engagement, the interaction was significant — improving engagement, therefore, benefits from high levels of PSC and PSC strength within the work units. Taking results of Study One and Two together, the only evidence that PSC Strength is an important moderator of PSC level, was in relation to some resources, and

work engagement. Theoretically the effect may be due to the safety signal effect—perhaps high levels of PSC combined with certainty (less dispersion) means that utmost perfect perceptions about managerial policies are thoroughly going on in those working environments. Employees would have mostly agreed or strongly agreed that their managers or supervisors have prioritized their psychological health and safety. As such, there would be pretty similar perceptions in work situations. While the mean of PSC level is high, low standard deviation of PSC could indicate the group cohesion and the PSC situational strength in workplace perceptions.

The results supported PSC as a predictor or "cause of the causes" of job design psychosocial factors such as demands and resources (Law et al., 2011). As investigated by scholars (Bakker & Demerouti, 2016; Dollard & Bakker, 2010), the results supported PSC as an upstream extension of the Job Demands-Resources (JD-R) model and its outcomes, emotional exhaustion and engagement. In relation to psychosocial factors, the results showed that PSC level was the more important predictor over and above the main or interactive effects of PSC strength.

The most important finding of this study was the theoretical generalisability of PSC as an organisational concept to protect health and safety confirmed through similar findings in both an Iranian and Australian contexts (Study Three, Chapter 5). The findings provided evidence that PSC was a climate construct that existed as a group phenomenon cross-culturally (Idris, Dollard, & Winefield, 2011). This study revealed that in both contexts, PSC was negatively related to psychological demands, and emotional exhaustion, and positively related to job resources, decision authority, and work engagement; however, in Australia, an additional positive relationship was found between team PSC and higher levels of the job resource, skill discretion. Despite the

nuances the main theoretical proposition of PSC as a precursor to JD-R model pathways was supported.

For the final stage, we considered the potential for PSC to ameliorate the harmful effects of job demands once they are experienced. In previous research studies (e.g., Bakker, Killmer, Siegrist, & Schaufeli, 2000; Bakker & Leiter, 2010; Demerouti et al., 2001b; Dollard & Bakker, 2010; González-Romá, Schaufeli, Bakker, & Lloret, 2006) employees' agreements on climate known as climate strength were emphasised to be related with workplace issues like psychosocial risk factors and work-related stress that predicted the individual and organisational outcomes. This study expanded the PSC theoretical boundaries to go beyond the climate mean level to include Climate Strength (Dispersion/ Standard Deviation) and Climate Ideal ($\frac{PSC}{SD}$) potential moderators of the relationship between demands and psychological health outcomes (Study Four, Chapter 6).

In highest PSC perceptions, employees strongly agree that psychological health and safety is prioritized by their managers or supervisors. As such, low standard deviation of PSC could be expected indicating the PSC group cohesion and situational strength. When PSC mean is divided by PSC standard deviation, it could be an indicator of perfect situation. Accordingly, it was found that PSC Ideal — strong and clear message of PSC at the higher level by high PSC mean and low SD — rather than PSC alone, had the most significant moderating effects on the relationship between job demands (psychological and emotional) at organisational level with emotional exhaustion, psychological distress and depression at the individual level. Therefore, as PSC Ideal goes higher (which means high PSC level and low PSC SD), it means that employees have clear understanding of workplace managerial policies regarding psychological health and safety.

Investigating PSC from both composition and dispersion perspectives combined to introduce PSC Ideal concept as the moderator of job demands associations with psychological health outcomes can be mentioned as one of the most important strengths of this study.

Bringing the results of Study One and Study Two together, yields some theoretical insights. PSC level contextualised by dispersion aspects seems important for predicting aspects of the JD-R motivating pathway, involving resources and engagement (Study Three). Further along the health erosion pathway, once demands are experienced, PSC effects were again refined by dispersion – that is PSC Ideal was a better moderator of demands than PSC alone (Study Four).

Practical Implications

The harmful consequences of stress at work and psychosocial risks come at a significant cost to both workers and organisations (World Health Organization, 2015). In terms of practical implications, these findings provide evidence for HR managers, supervisors and senior managers that could be considered in order to prevent the workplace risk factors like bullying, harassment, psychological demands, physical demands, and emotional demands. The results may provide a better understanding of the PSC model's importance for those who are motivated to improve health and work engagement levels in organisations and in large sectors. Not only should they be informed that PSC as a facet-specific climate is linked to psychological health and work outcomes, but they may better recognise the strategies they need to develop the working climate, whether PSC level can be focused on alone, or how consistently is should be enacted and communicated (PSC strength). Finally, this investigation provided essential context to intensify knowledge on the PSC and climate strength constructs.

PSC level alone as a job resource not only can reduce the negative impacts of job demands, but also can reliably and efficiently predict workplace psychosocial risk factors (psychological demands, job control, and organizational support) (Dollard et al., 2012a; Dollard & Bakker, 2010; Dollard et al., 2012b; Idris & Dollard, 2011). Based on evidence provided (Dollard & Bakker, 2010), measuring levels of PSC in hospital work units can be used to predict other risk factors and levels of emotional exhaustion in the units. Since PSC is a precursor to other stress risk factors, focusing on building PSC should be an efficient and effective way to reduce work-related risk factors and outcomes in hospital work units (Dollard et al., 2012a; Dollard & Bakker, 2010; Dollard et al., 2012b; Idris & Dollard, 2011). Overall, PSC could be built by implementing pro-

worker psychological health policies at the hospital level. At the unit level, building PSC levels across units by strengthening relationships between levels of the organization is important, so that unit or team supervisors can be more active in their implementation of PSC policies set down by senior managers and human resource management in hospitals. Increased communication and participation by all levels of the organisation in the identification of risk factors is likely to lead to their reduction and concomitant decreases in emotional exhaustion (Idris, Dollard, Coward, & Dormann, 2012). The association linking depressive symptoms and emotional exhaustion to patient safety (e.g., Cox et al., 2000; Johnson et al., 2017), indicates that the protection of employees' health and safety through PSC could be also beneficial in terms of patient safety (Dollard & McTernan, 2011; Garrick et al., 2014).

To improve work engagement, the research indicated that it was important to increase both PSC level and the consistency of implementation of PSC policies and procedures by supervisors within hospital work units. Hospitals managers need to pay more attention to policies, procedures and practices that concern worker psychological health and safety; supervisors need to pay attention to their consistent enactment, because PSC policies have the added benefit of improving work engagement.

To increase the homogeneity of climate perceptions, teams should have more shared experiences, or they should more frequently share their individual perceptions. More shared experiences could be made, for example, by regular team meetings that are also attended by supervisors or even managers from higher levels, in which all employees receive the same information about the importance (or lack thereof) of psychological health. Similarly, sharing individual perceptions could be fostered by team meetings. The positive impact of such meetings on climate level could be expected the greater the focus is on psychological health issues. Hence, it might be better to have

special meetings regarding psychological health issues, rather than pressing this issue into regular meetings.

Common perceptions about PSC were important for work engagement which in turn affects job performance (Demerouti, Cropanzano, Bakker, & Leiter, 2010). Training programs on the role of PSC in the organisation and the importance of uniform translation of PSC principles from the senior management through the middle management and work units within their organizations would be helpful in this respect. Accordingly, the PSC basic elements, managerial support for stress prevention, priority of worker psychological health, and communication and involvement (e.g., Dollard & Bakker, 2010; Dollard & Karasek, 2010), can inform managers who are keen to build PSC as part of a constant progressive plan for their organizations' development (Law et al., 2011).

The results supported the utility of PSC theory in Iran (at least among hospital workers). The findings suggested that promoting high PSC in organisations in Iran will improve the psychological health of workers. Organisations in Iran can use PSC framework to identify, measure, and monitor the organisational psychosocial risk, target interventions, develop policies, benchmark progress and monitor trends to improve work conditions, productivity, work engagement and the psychological health of employees (Hall et al., 2010). Given empirical support also from Australia and Malaysia, workplace assessment of PSC was argued to be useful to guide the development of organisational systems to prevent workplace psychosocial risk factors across the Asia Pacific.

Focusing on PSC Level, PSC Strength PSC Ideal was a way to consider both the mean and variety of employees' perceptions of the consistency (central tendency and

dispersion) of the performing managerial concerns to keep working environment health and safety in practice.

Study Limitations and Future Research Suggestions

Like the majority of research attempts, certain limitations on research regarding Psychosocial Safety Climate (PSC) at the organisational level (Study One, see Chapter 3) were inevitable in this study. Firstly, this study was based on self-report measures that could lead to concerns about the bias of the common method. Secondly, applying a cross-sectional approach in the current study implies that causality cannot be inferred. Therefore, future longitudinal and experimental research studies that could uncover causal processes should be conducted to establish the causality. In addition, aside from this research there is a lack of strong theoretical background and framework for applying PSC strength as a new concept to improve PSC in the organisations. Hence, there is a need for systematic replication research to help understand the role of psychosocial safety climate (PSC) strength in explaining PSC direct, indirect, and moderation effects on job demands and resources and consequently on health and work outcomes. Thirdly, although the sample sizes of the sub agencies and agencies were quite large in the AWB studies, the number of participants in some organisations was more limited. Finally, AWB participants were randomly selected from telephone numbers listed in *Australian White Pages* and considering that it does not provide mobile numbers may yield a biased sample (e.g., many people do not use land lines these days).

Several limitations (e.g., a cross-sectional design and the limited sample size being exposed to many threats to their psychological health) have been acknowledged in the Study 2 (see Chapter 4) investigating PSC level and PSC Strength at the team level. A cross-sectional design was used, which had its limitations. Causality could not be

established with high internal validity. Similarly, possible, yet undetected, reciprocal relations might exist too. For example, the outcomes assessed might have reciprocal effects on PSC level and strength. In teams with several members with physical or mental health conditions, for example, these members rate PSC less than was actually provided (perhaps because they require more PSC) which leads to PSC ratings that were biased downwards. As dispersion of health problems among team members increases dispersion of PSC scores might also increase. Longitudinal studies are required to disentangle such possible reciprocal effects in future.

The limited sample size means that the multilevel moderation/ mediation processes could not be comprehensively assessed. Accordingly, future studies should include more groups to analyse PSC strength at the unit (or organisational) level (Study Four; Chapter 6).

Focusing on a single type of job as in Study Two and Three, implies a restriction of range which reduces the variability of the variables. Consequently, variability of demands, resources, PSC levels, and PSC strength might reduce the strength of relationships between variables. Therefore, compared to broader samples of jobs, this study may reveal weaker effects than those that actually exist. Still, the ICC [1] were all satisfactory indicating that the multilevel approach was appropriate. Nevertheless, further research studies should focus on greater variety of jobs.

Conducting cross-cultural studies in Study Three, for example comparing Eastern countries with Western ones, or Muslim with Non-Muslim societies, are recommended to understand how Western-style working practices and Western-derived theoretical models of stress apply to different geographical regions and cultures (Brough, Dollard, & Tuckey, 2014). Research in the Asia Pacific, as the world's most populous region, is

especially required where vast numbers of workers are experiencing poor job designs and precarious employment (Dollard et al., 2014).

The reliability was still lower than ideal (.68), however, even when one item of the decision authority subscale was removed. It could be due to different facets of control which were not necessarily related to each other; for example, some participants have high control over some aspects while other participants have high control over others (e.g., mixed sample of team leaders and subordinates). Nevertheless, the scale was treated similarly compared to other study's measures of job control and skill discretion, and showed the relations expected with other measures of working conditions, health and engagement. Considering the relationship observed between group-level PSC and individual level decision authority, these findings supported the measure's construct validity.

Future research could use a wider range of engagement and outcome measures, to triangulate evidence from multiple sources, (i.e., safety incident rates, sickness absence, levels of patient readmission or mortality rates) or use qualitative designs to gain a broader understanding on the significance of PSC in organisations (Idris et al., 2012).

Study 3 (see Chapter 5) aimed at investigating PSC from two different cultural perspectives in Asia pacific. The strength of this study was the assessment of PSC theory in an unexplored area of Asia Pacific, Middle Eastern country of Iran. Translating the survey tool (questionnaire) into Farsi and assessing psychosocial risk factors and psychological health amongst 33 work groups in an Iranian hospital represents a new frontier in work stress research. From a practical point of view, the findings suggested that promoting high PSC in organisations in Iran would improve the psychological health of workers. Organisations in Iran can use the PSC framework to identify and

oversee the organisational psychosocial risks and target interventions, to develop policies, to measure benchmark progress and monitor trends to improve working conditions, productivity, work engagement and the employees' psychological health (Hall et al., 2010).

The complexity and novelty of undertaking this research in Iran, has restricted its scope. Future research should consider a larger sample size, including more organisational groups along with a longitudinal methodology, as this study was underpowered and restricted to determine causality. Accordingly, a larger longitudinal sample will enable the examination of the mediated pathways through which PSC influences working and psychological health conditions. The measurement of a wider range of job demands including bullying and harassment and job resources such as social support should provide a stronger understanding of the working conditions that are the most prevalent and the most crucial in Iranian workplaces as the predictors of workplaces' psychological health.

Collecting self-report data from different cultural contexts requires trust and cultural sensitivity to respect the social structures including morals, religion, politics and economics (Iwata, 2014). To reduce the misunderstanding and confusion about items' meanings, a combination of qualitative data collection and objective measurement would enrich the findings and shed light on cross-cultural differences in response styles including the use of acquiescence, extreme ratings, social desirability, or impression management styles (Iwata, 2014). Triangulating evidence from a range of sources (e.g., injury rates, safety audit material, or patient data), measuring PSC in alternative ways such as evidence of actual policies, practices and procedures for the protection of psychological health, and analysing how leadership styles and psychosocial safety

specific leadership training impact upon PSC levels would add to the evidence base on psychosocial risks in Iran (Zadow & Dollard, 2015).

This study adds to the literature as it provides support for PSC as a precursor to the work conditions that influences on the workplace psychological health. For the first time the propositions of the PSC model were shown in an Iranian sample broadening the understanding of the psychosocial risks assessment across the Middle East and supporting previous findings suggested that PSC theoretical framework can be applied cross culturally in both Western and Eastern contexts (e.g. Idris & Dollard, 2011; Idris & Dollard, 2012a; Idris & Dollard, 2012b; Idris, Dollard, Coward & Dormann, 2012). Building PSC in hospitals in Iran and Australia is required as we have a social, moral, economic and legal imperative to protect the psychological health of workers across Asia Pacific region.

Study 4 (see Chapter 6) investigates the beneficial effects of PSC Ideal that signify the vital role of PSC when its message is clear and strong. One of the most important strengths of this study is to investigate PSC form both composition and dispersion perspectives combining them to introduce PSC Ideal concept as the moderator of job demands associations with psychological health outcomes. Respectively, focusing on PSC Level and PSC Strength, PSC Ideal is a way to consider both the mean and variety of employees' perceptions of the consistency (central tendency and dispersion) of the performing managerial concerns to keep the work environment health and safety.

The generalisability of these results is subject to certain limitations. For instance, the cross-sectional approach of this study might limit the decision making on the effects of unmeasured external variables and causality inference. The cross-sectional nature of the study design, does not allow for a causal inference of PSC level, PSC Strength and

PSC Ideal interactions with job demands to predict the psychological health outcomes to be established. Nonetheless, previous studies (e.g., Dollard & Bakker, 2010) have found the PSC influence on working conditions through the longitudinal lens. From a cross-sectional perspective, PSC Ideal is considered to include external factors influence on PSC level to make casualty inference. Moreover, common method variance might be a problem with measures using self-report data (Podsakoff et al., 2003). For future investigations, research needs to be conducted more broadly to collect extra qualitative data based on group discussions and personal interviews.

Conclusion

PSC is a leading indicator of psychosocial hazards, psychological health problems and work engagement which is an ideal target for stakeholders to monitor, address and evaluate to improve psychological health and engagement within organisations and across industries. Projecting further into the future, interventions aimed at monitoring and changing PSC should be developed and evaluated. PSC and climate strength are relatively new and progressively accepted concepts in the past couple of decades in the field of organisational psychology.

In spite of the growing attention towards these concepts, there has been an extensive gap in the PSC literature, as the examinations of PSC have not involved climate strength and PSC Ideal. This study aimed at filling out the gap by captivating a multi-level and multi group approach to PSC level, PSC Strength and PSC Ideal focusing on organisations across Australia and Iran. The results shed light on some of the PSC antecedents and also partially supported the PSC Strength and PSC Ideal hypothesis in some respects.

Given the results achieved, high PSC at the organisational level could significantly predict the job resources like supervisors support; however, the interaction effect of PSC strength on PSC level relationship with supervisor support indicated that in a high PSC and higher PSC dispersion (low PSC strength) situation, managers who were familiar with the importance of providing a climate based on employees' health and safety, cared more about working designs by providing higher level of supervisor support for their subordinates. However, in low PSC strength contexts the relationship between PSC and supervisor support was not found.

PSC level and PCS strength reflected the level and consistency (or conversely, variability) of employees' shared perceptions of managerial priority for workplace psychological health and safety. This thesis found that PSC level in general was a reliable indicator of psychosocial safety risk factors at work and worker psychological health. The PSC model suggests that organisational interventions must change higher level factors like managerial policies and practices to reduce exposure to workplace risk factors (Rickard et al., 2012). PSC theory also offered a comprehensive approach for managers and work group supervisors to generate an effective psychological health and safety climate (high-level and strong) to achieve more productive results through higher engagement. Building PSC at the different hospital work groups may reduce demands, build resources, and reduce distress in high demanding work environments like hospitals.

Finally, the thesis introduced PSC Ideal as a new and developing concept in the organisational health and safety literature. This thesis, in four studies, delivered a multilevel theoretical support for the moderating role of PSC Level, PSC Strength and PSC Ideal in relation with job demand (psychological and emotional) with psychological health (psychological distress, emotional exhaustion and depression). The stimulus to set

the PSC Ideal as a clear and precise message of PSC perceptions is beneficial for senior managers to screen their organisations and also sub groups to address and evaluate the PSC within and across different organisational levels. Projecting further into the future, PSC interventions aimed to develop PSC Ideal and evaluate working environments to make sure PSC perception has both high and consistent characteristics.

In conclusion, by considering PSC strategies, managers can improve the workplace environments to protect employees' health and safety. The climate strength concept emphasises a strong PSC through high PSC agreement at the team and organisational levels – considering this and the potential effects of climate dispersion should motivate senior managers, workgroup supervisors and HR managers to keep building a strong and consistent PSC. Finally, this investigation has provided a context for future PSC research to increase the body of knowledge on PSC level and PSC strength from different cultural perspectives.

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Appendix: AWB Scale translated into Farsi

University of South Australia

به نام خدا

پرسشنامهٔ سلامت و ایمنی روانی - اجتماعی کارکنان

با سلام؛

هدف از پرسشنامه حاضر به عنوان قسمتی از یک تحقیق دانشجویی در مقطع دکتری، بررسی و شناسایی فضای ایمن روانی - اجتماعی[1] در محیطهای شغلی است. بطور کلی، سلامت، بهداشت، بازده شغلی کارکنان و همچنین نگرش آنان نسبت به تدابیر و عملکرد مدیران جهت حفظ سلامت و ایمنی کار که لازمهٔ ارتقاء خدمات حرفه ای است، مورد توجه قرار خواهند گرفت. در چشم اندازی وسیع تر منافع دو جانبهٔ آن از قبیل محیط شغلی سالم تر و حفظ سلامت و امنیت کارکنان منجر به پیشرفتهای قابل ملاحظه در حوزه بهداشت محیط کار شده و متعاقباً منجر به افزایش بهروری، رضایتمندی کارکنان و مراجعین، کاهش خسارات جسمانی و سایر مشکلات کار خواهد شد. بدیهی است، دستیابی به این اهداف مشترک، مستلزم همکاری متقابل سازمانها، مدیران و کارکنان خواهد بود. لذا همکاری داوطلبانه و صادقانه شما می تواند سهم مهمی در ارتقاء بهداشت وایمنی شغلی ایفاء کند.

شرکت در این تحقیق کاملاً اختیاری بوده، ذکر نام و نام خانوادگی به هیچ وجه ضرورت نخواهد داشت، شما می توانید همکاری خود را با این تحقیق هر لحظه ای که خواستید قطع نموده و به پرسشها پاسخ ندهید. این پرسشنامه کاملاً جنبه محرمانه داشته و صرفاً پژوهشگر اجازهٔ دستیابی به نتایج آن را خواهد داشت. یافته های پژوهش، هرگز که در سطح فردی یا گروهی (بخش یا واحد شغلی) مورد مقایسه و یا قضاوت قرار نمی گیرند. فقط رهنمودهای تخصصی و کلی در راستای ارتقاء بهداشت شغلی ارائه خواهند شد. در صورت تمایل به آگاهی از نتایج آزمون خود می توانید با ذکر کد شناسایی در کادر مربوطه و ارائه آن به پژوهشگر پیگیری لازم را داشته باشید.

کد شناسایی شرکت کننده:	*دوحرف:*			*دو عدد:*		

دوحرف و دو عددی که هرگز فراموش نمی کنید. برای مثال: دوحرف اول نام مادر(مریم: م ر) و چندمین روز ماه (اول مهر: 01) متولد شده اید. این کد شناسایی صرفاً جهت پیگیری و اطلاع شخصی خودتان می باشد. لطفاً آن را در اختیار دیگران قرار ندهید.

[1] . Psychosocial Safety Climate

شایان ذکر است این تحقیق مورد تایید کمیته اخلاق در پژوهش دانشگاه استرالیای جنوبی، برخی از اساتید برجسته دانشگاهی و افراد متخصص در این زمینه قرار گرفته است. پروفسور مورین دالِرد[2]، پروفسور کریستین دُرمن[3] و سرکار خانم دکتر طاهره ضیائیان[4] به عنوان اساتید راهنما و مشاور نظارت مستقیم بر این پروژه خواهند داشت. جهت کسب اطلاعات بیشتر می توانید با مسئول کمیته اخلاقی پژوهش در دانشگاه استرالیای جنوبی به شماره تلفن: 0061883023118 تماس بگیرید، یا به آدرس الکترونیکی: Vicki.allen@unisa.edu.au ایمیل ارسال فرمایید. همچنین پروفسور دالِرد از طریق شماره تلفن: 006183024846 و ایمیل: Maureen.Dollard@unisa.edu.au و دکتر طاهره ضیائیان با شماره تلفن: 0061883021114 پاسخگوی سوالات تخصصی شما به فارسی در این زمینه خواهند بود.

بنابراین خواهشمند است جهت کمک به ارتقاء سلامت و جهت گیری صحیح برنامه های پیشگیرانه، صادقانه پاسخ گفته و در پایان از تکمیل همه موارد مطمئن شوید. بدیهی است امکان تجزیه و تحلیل موارد ناتمام میسر نبوده و از ادامه روند تحقیق حذف خواهند شد. پرسشنامه های تکمیل شده مستقیماً در اختیار پژوهشگر قرار گرفته و به مدت پنج سال در فایل شخصی وی بایگانی خواهند شد. تنها شما می توانید در طی این مدت از طریق ایمیل زیر و ارائه کد شناسایی، نتایج آزمون خودتان را جویا شوید. همچنین خواهشمند است در صورت تمایل به دریافت چکیدهٔ یافته های این تحقیق درخواست خود را به ایمیل زیر ارسال نمایید.

با تشکر فراوان

علی افشاریان
دانشجوی دکتری روان شناسی در دانشگاه استرالیای جنوبی،
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ایمیل: Maureen.Dollard@unisa.edu.au تلفن: 006183024846
3. مدرس مدیریت و آموزش در دانشگاه ماینز(آلمان)، استاد مدعو دردانشگاه استرالیای جنوبی و استاد مشاور پروژه
4. مدرس ارشد گروه پرستاری و مامایی در دانشگاه استرالیای جنوبی و استاد مشاور پروژه

✓ موارد فوق را بطور کامل مطالعه نموده و حاضر به همکاری با این تحقیق می باشم. بلی ☐ خیر ☐

مقتضیات شغلی و فشارهای روان شناختی				
1. شغل من مستلزم آن است که خیلی سریع کار کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
2. شغل من مستلزم آن است که خیلی سخت کار کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
3. کارهای بیش از حد توانم، از من خواسته نمی شود.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
4. زمان کافی برای انجام کارهای خواسته شده دارم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
5. بعضی از کارهایی که از من خواسته می شوند با هم در تناقض هستند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
6. مجبورم برای اینکه کارهایم انجام شود، در زمان استراحت و ناهار هم کار کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
مقتضیات شغلی و فشارهای جسمانی				
شغل من ایجاب می کند که ...				
7. فعالیت جسمانی زیادی داشته باشم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
8. اغلب اجسام سنگینی را بلند و جا به جا کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
9. از لحاظ جسمانی خیلی سریع و مداوم کار کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
10. برای یک مدت طولانی غالباً وضعیت نامناسبی (دائما بایستم یا بنشینم) را حفظ کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
11. برای یک مدت طولانی دستها، پاها یا سرم را در وضعیتی نامناسب ثابت نگهدارم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
مقتضیات شغلی و فشارهای هیجانی				
کارمن، ...				
12. از نظر هیجانی و عاطفی، مرا زیاد در موقعیت چالش برانگیز قرار می دهد.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
13. ایجاب می کند چالشهای هیجانی زیادی را تجربه کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
14. ایجاب می کند هیجانات واقعی ام را سرکوب کرده یا بروز ندهم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
15. ایجاب می کند طوری عمل کنم که دیگران از موقعیتم انتظار دارند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم

مقتضیات شغلی و فشارهای ناشی از تغییرات درون سازمانی				
در محل کارم، ...				
16. تغییرات زیاد مثل اخراج، بازخرید و تغییر ساختار به وضوح روی کارم تاثیر می گذارند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
17. شما هم به نحوی در فرایند این تغییرات نقش داشته اید.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
18. سیاستها و دستورالعملهای جدیدی جهت کاهش هزینه ها طراحی شده که دائماً ارائه و معرفی می گردند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
19. تغییر و جا به جایی مدیران زیاد اتفاق می افتد.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
20. به طور دائم یک فن آوری جدید معرفی می شود.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
آزار، اذیت و یا تعرض در محیط کار				
در محل کار، از طرف همکارانم ...				
21. پیشنهادات جنسی ناخوشایند وغیر منتظره ای را دریافت کرده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
22. شوخیهای لفظی بدی را در ارتباط با مسائل جنسی شنیده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
23. برخورد ناعادلانه ای را به خاطر جنسیتم (زن یا مرد بودن) تجربه کرده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
24. الفاظ نامناسبی را با توجه به نژاد و قومیتم شنیده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
25. سرم فریاد زده اند یا به من دشنام داده اند.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
26. درمقابل دیگران تحقیر شده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
27. مورد تهدید فیزیکی و یا حمله واقع شده ام.	هرگز یا خیلی به ندرت	به ندرت	گاهی اوقات	اغلب اوقات	بیشتر مواقع یا همیشه
تعارضات شغلی - خانوادگی							
28. مقتضیات و انتظارات محل کارم، با مسائل خانه و خانواده ام تداخل دارد.	کاملا مخالفم	مخالفم	تاحدودی مخالفم	نظری ندارم	تاحدودی موافقم	موافقم	کاملا موافقم
29. زمان کاری زیاد، باعث میشود کمتر کنار خانواده ام باشم تا وظایفم را در قبال آنها انجام دهم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم
30. فشار ناشی از کار باعث می شود نتوانم کارهایی را که در خانه دوست دارم، انجام دهم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم
31. خستگی و فشار ناشی از کار، انجام وظایفم را در مقابل خانواده با دشواری مواجه می سازد.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم

32. با توجه به وظایف شغلی ام مجبورم تغییراتی دربرنامه ها و تفریحات خانوادگی اعمال کنم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موا فقم	کاملا موافقم
فضای ایمن روانی - اجتماعی							
33. در محل کارم، مدیریت جهت رفع مسائل و مشکلات تاثیرگذار بر بهداشت روانی کارکنان، سریع عمل می کنند.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
34. در محل کارم، مدیریت هنگام بروز نگرانی از وضعیت روان شناختی کارکنان، قاطعانه تصمیم می گیرد.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
35. مدیریت برای جلوگیری از استرس و فشار روانی مسئولانه و متعهدانه عمل می کند.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
36. بهداشت و سلامت روانی کارکنان یکی از اولویت هاست.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
37. مدیریت به وضوح بهداشت روانی کارکنان را بسیار مهم در نظر می گیرد.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
38. مدیریت، بهداشت روانی کارکنان را نیز به اندازه بازده شغلی، مهم در نظر می گیرد.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
39. در محل کارم، ارتباطات خوبی در مورد مسائل و موضوعات مرتبط با بهداشت روانی وجود دارد، که روی من تاثیر می گذارد.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		
40. در محل کارم، اطلاعات مناسبی در ارتباط با بهداشت روانی توسط مدیر یا سرپرست واحد دراختیار کارکنان قرار میگیرد.							
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم		

ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
41. در محل کارم، همکاری و کمک من در رفع نگرانی های مربوط به سلامت و ایمنی شغلی مورد توجه قرار می گیرد.					
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
42. در محل کارم، نظرخواهی و مشاوره در مورد بهداشت روانی و ایمنی کار با کارکنان، انجمن صنفی و مسئولین ایمنی کار صورت می گیرد.					
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
43. کارکنان تشویق می شوند خودشان هم پیگیر موضوعات مرتبط با بهداشت و ایمنی روانی در کار باشند.					
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
44. در محل کارم، پیشگیری از استرس تمامی سطوح سازمانی را شامل می گردد.					
الف: در سطح گروه، تیم یا واحد شغلی	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم
ب: در سطح سازمان یا بیمارستان	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم

منابع شغلی، کنترل و حمایت در محل کار: صلاحدید مهارتی				
45. شغل من همواره نیاز به یادگیری های جدید دارد.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
46. شغل من مستلزم کارهای تکراری است.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
47. شغل من ایجاب می کند خلاق باشم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
48. شغل من مستلزم مهارتهای سطح بالایی است.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
49. غالباً مجبورم چیزهای متفاوتی را در کارم انجام دهم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
50. فرصت کافی برای رشد و توسعه توانمندیهای خاص شغلی ام را دارم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
قدرت تصمیم گیری				
51. شغلم به من اجازه می دهد که بسیاری از تصمیمات کاری را شخصاً اتخاذ کنم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
52. در کارم، آزادی بسیار کمی برای تصمیم گیری درباره چگونگی انجام کارها دارم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
53. شغلم به من اجازه می دهد که پیشنهادات زیادی درباره رخدادهای محل کار داشته باشم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
54. در کارم باید همکاران دیگر را راهنمایی و نظارت کنم.	خیر □	1-4 نفر □	5-10 نفر □	11-20 نفر □
عرصه تصمیم گیریهای کلان				
55. در محل کارم، تاثیر قابل ملاحظه ای بر تصمیمات کار گروه و یا بخش دارم.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
56. در محل کارم، تمامی قسمتها در خصوص تصمیمات عمده اطلاع رسانی می شوند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
57. در محل کارم، معمولا افراد از قبل درمورد تصمیمات عمده، به خوبی آگاه می شوند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
حمایت اجتماعی مافوق، کارشناس مسئول بخش یا سوپروایزر				
58. مدیر بخش یا قسمت به رفاه کارکنان زیر دست اهمیت می دهد.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
59. مدیر بخش یا قسمت یا سوپروایزر در انجام امور یاری رسان است.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
60. مدیر بخش یا قسمت با احترام با من برخورد می کند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
حمایت اجتماعی همکاران				
61. همکارانم رفتار دوستانه ای در محیط کار دارند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
62. همکارانم در انجام کارها یاری رسان من هستند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم
63. همکارانم با احترام با من رفتار می کنند.	کاملا مخالفم	مخالفم	موافقم	کاملا موافقم

بازیابی منابع: تجدید نیرو و توانایی کار							
64. من هرگز زمان کافی برای تجدید قوا در بین شیفتهای کاری ام ندارم.	کاملا مخالفم	مخالفم	تاحدودی مخالفم	نظری ندارم	تاحدودی موافقم	موافقم	کاملا موافقم
65. حتی اگر از شیفت قبل خسته باشم، معمولاً برای شروع شیفت بعد می توانم تجدید قوا کنم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم
66. به ندرت می توانم نیرو و توانم را بطور کامل در بین شیفتهای کاری بازیابی کنم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم
67. تجدید قوا و رهایی از خستگی شغلی بین شیفتهای کاری برای من مشکلی نیست.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم
68. غالبا در حالیکه هنوز از شیفت قبل خسته ام، شیفت بعدی را شروع میکنم.	کاملا مخالفم	مخالفم	تا حدودی مخالفم	نظری ندارم	تا حدودی موافقم	موافقم	کاملا موافقم

ویژگیهای سازمانی – منابع: عدالت سازمانی				
در سازمانی که کار می کنم، دستور العملهایی طراحی شده است تا ...				
69. نگرانی کارکنانی که تحت تاثیر تصمیمات قرار گرفته اند، بررسی گردد.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
70. اطلاعات صحیح ودقیق برای تصمیم گیری فراهم شود.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
71. شرایط درخواست تجدید نظر یا چالش یک تصمیم وجود داشته باشد.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
72. معیارهایی برای تصمیماتی که می توانند باثبات باشند،ایجاد کند.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
پاداش شغلی				
73. با توجه به تلاشها و دستاوردهایم، در کارم از احترام و موقعیتی که شایسته آن می باشم، برخوردارم.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
74. با توجه به تلاشها و دستاوردهایم، چشم انداز کاری مناسبی دارم.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
75. با توجه به تلاشها و دستاوردهایم، حقوق و مزایای مناسبی دارم.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*
76. امنیت شغلی ام پایین است.	*کاملا مخالفم*	*مخالفم*	*موافقم*	*کاملا موافقم*

اشتیاق شغلی							
احساس می کنم ...							
77. در محیط کار سرشار از انرژی هستم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
78. در محیط کار قوی و نیرومند هستم	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
79. صبحها دوست دارم به سر کار بروم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
80. مشتاق کارم هستم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
81. کارم به من روحیه و الهام می بخشد.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
82. به کارم افتخار می کنم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
83. هنگامی که به شدت کار می کنم احساس خوبی به من دست می دهد.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
84. در محیط کار غرق کارم می شوم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
85. هنگام کار، نمی فهمم زمان چطور سریع میگذرد.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز

بهداشت روان شناختی: خستگی هیجانی							
احساس می کنم ...							
86. در کارم از نظر هیجانی و عاطفی تحلیل رفته ام.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
87. در پایان روز از نفس افتاده و تحلیل رفته ام.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
88. خسته ام، ازاینکه هر صبح باید روز دیگری را با کار آغاز کنم.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
89. کار کردن در تمام روز برایم دشوار است.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز
90. دچار فرسودگی شغلی شده ام.	هرگز	سالی چند بار یا کمتر	ماهی یکبار یا کمتر	ماهی چندبار	هفته ای یکبار	هفته ای چند بار	هر روز

آشفتگی روان شناختی						
در طی <u>چهار هفته گذشته</u>، هر چند وقت یکبار بدون دلیل ...						
91. احساس خستگی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
92. احساس عصبی بودن کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
93. احساس عدم کنترل در هنگام عصبی بودن کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
94. احساس ناامیدی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
95. احساس بی قراری و ناراحتی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
96. احساس بیقراری کرده اید بطوریکه نتوانسته یکجا آرام بگیرید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
97. احساس افسردگی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
98. احساس دشواری در دستیابی به هر چیزی در زندگی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
99. احساس غم کرده اید، بطوری که هیچ چیز نتوانسته شما را خوشحال کند؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	
100.احساس بی ارزشی کرده اید؟	هیچگاه	به ندرت	گاهی اوقات	بیشتر مواقع	همیشه	

افسردگی				
در طی یکماه گذشته، چه قدر دچار علائم زیر شده اید؟				
101. بی علاقگی یا کم علاقگی در انجام کارها	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
102. غم، افسردگی و ناامیدی	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
103. مشکل در به خواب رفتن (کم خوابی) یا بیدارشدن (زیاد خوابی)	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
104. خستگی بیش از حد یا کمبود انرژی	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
105. تغییر اشتها (بی اشتهایی یا پرخوری)	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
106. احساس بدی درمورد خودتان مثل شکست خورده بودن و یا خود و خانواده را ناامید کردن	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
107. مشکل در تمرکز روی یک موضوع (مطالعه یا تماشای تلویزیون)	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
108. بی قراری و یا کندی بیش از حد در حرکات یا گفتار، بطوریکه دیگران متوجه شده و به شما تذکر داده اند.	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها
109. افکاری از قبیل اینکه بهتر بود مرده بودید.	هرگز	بعضی روزها	بیشتر روزها	تقریبا همه روزها

سلامت جسمانی (سلامت عمومی)

در طی هفت روز گذشته، چقدر در ارتباط با موارد زیر احساس ناراحتی کرده اید؟

110. سردرد	هرگز	به ندرت	گاهی اوقات	زیاد	
111. کمردرد یا گردن درد	هرگز	به ندرت	گاهی اوقات	زیاد	
112. درد در ناحیه بازوها، پاها، مفاصل و لگن خاصره	هرگز	به ندرت	گاهی اوقات	زیاد	
113. درد های عضلانی	هرگز	به ندرت	گاهی اوقات	زیاد	
114. آب ریزش بینی و چشمها و یا گرفتگی سر و صورت	هرگز	به ندرت	گاهی اوقات	زیاد	
115. سرفه و گلو درد	هرگز	به ندرت	گاهی اوقات	زیاد	
116. سرما خوردگی، چاییدن، تب یا علائم آنفولانزا	هرگز	به ندرت	گاهی اوقات	زیاد	
117. یبوست یا اسهال	هرگز	به ندرت	گاهی اوقات	زیاد	
118. حالت تهوع، نفخ، و سوء هاضمه	هرگز	به ندرت	گاهی اوقات	زیاد	

119. بطور کلی وضعیت سلامتی خود را چگونه ارزیابی می کنید؟	عالی □	خیلی خوب □	خوب □	نسبتاً خوب □	ضعیف □

سلامت جسمانی (قلبی – عروقی)

120. آیا در طی دوسال گذشته فشار خونتان را با یک دستگاه فشار خون یا توسط یک متخصص گرفته اید؟	بلی □	خیر □

121. اگر فشار خونتان را گرفته اید، در چه وضعیتی بوده است؟	پایین □	نرمال □	بالا □	نمی دانم □

122. آیا در طول دو سال گذشته به خاطر درد قفسه سینه یا مشکلات مرتبط با بیماری های قلبی – عروقی به متخصص مراجعه داشته اید؟	بلی □	خیر □

123. تشخیص پزشک معالج شما چه بوده است؟	سکته قلبی □	آنژین صدری □	تپش قلب و فشار خون بالا □	سکته مغزی □	سایر موارد : .....

پیامدهای شغلی (رضایتمندی شغلی)

124. با توجه به تمام جوانب، کلاً چه احساسی در مورد شغل خود دارید؟

بی نهایت ناراضی ام	خیلی ناراضی ام	تقریباً ناراضی ام	مطمئن نیستم راضی ام یا ناراضی	تقریبا راضی ام	خیلی راضی ام	بی نهایت راضی ام

125- قصد دارم طی سال جاری این سازمان را ترک کنم.	کاملا مخالفم	مخالفم	نظری ندارم	موافقم	کاملا موافقم

126- دوست دارم طی پنج سال آینده در این سازمان کار کنم.	کاملا مخالفم		مخالفم		نظری ندارم		موافقم		کاملا موافقم	
127- بر اساس مقیاس زیرعملکرد معمولی اکثر کارمندان را در یک شغل مشابه خودتان چگونه ارزیابی می کنید؟										
بهترین عملکرد یا کارمند نمونه 10=	9	8	7	6	5	4	3	2	1	0= بدترین عملکرد
128-روی مقیاس زیر عملکرد خودتان را طی یکی دو سال گذشته چگونه ارزیابی می کنید؟										
بهترین عملکرد یا کارمند نمونه 10=	9	8	7	6	5	4	3	2	1	0= بدترین عملکرد
129- روی مقیاس زیر بطور کلی عملکرد شغلی خود را در طی چهار هفته گذشته که کار کرده اید، چگونه ارزیابی می کنید؟										
بهترین عملکرد یا کارمند نمونه 10=	9	8	7	6	5	4	3	2	1	0= بدترین عملکرد
130- بر اساس مقیاس زیر، در طی 4 هفته گذشته چه مقدار مشکلات سلامتی شما روی بازدهی شغلیتان تاثیر داشته است؟										
بیشترین تاثیر = 10	9	8	7	6	5	4	3	2	1	0 = عدم تاثیر
131-جمعا چند ساعت در هفته گذشته کار کرده اید؟ .... ساعت										
132-مدیر یا کارفرمای شما چند ساعت انتظار دارد که درهفته شما کار کنید؟ .... ساعت										
133-در طی 4 هفته گذشته، چند روز کامل کاری را به خاطر مشکلات جسمانی و یا روان شناختی (برای خودتان، نه فرد دیگری در خانواده) از دست داده اید؟ ..... روز										
134-در طی 4 هفته گذشته چند روز کامل را به هر دلیلی دیگری از دست داده اید؟ ..... روز										
135-در طی 4 هفته گذشته چند روز را به خاطر مشکلات جسمانی خودتان (نه خانواده و اطرافیان) مرخصی ساعتی گرفته اید؟ ..... روز										
136- در طی 4 هفته گذشته چند روز کامل کاری را به هر دلیل دیگری بخشی از روز را مرخصی ساعتی گرفته اید؟ ..... روز										
137-در طی 4 هفته گذشته چند روز زودتر سر کار آمده، دیرتر آنجا را ترک کرده، و یا در روز غیر کاریتان کار کرده اید؟ ..... روز										
138- جمعاً چند ساعت در طی 4 هفته گذشته کار کرده اید؟ ..... ساعت										
139-آیا در طی 6 ماه گذشته مورد زورگویی (قلدری) در محیط شغلی خود قرار گرفته اید؟ بلی ☐ خیر ☐ تمایل ندارم پاسخ دهم. ☐										
140- اگر با زورگویی (قلدری) در سازمان مواجه شده اید هر چند وقت یکبار بوده است؟ به ندرت ☐ ماهی یکبار ☐ هفته ای یک بار ☐ هر روز ☐										
141- برای چه مدت با آن مواجه بودید؟ کمتر از یکماه ☐ 1 تا 6 ماه ☐ 7 تا 12 ماه ☐ 1 تا 2 سال ☐ بیشتر از 2 سال ☐										

142- آیا در شش ماه گذشته، با رفتارهای خشونت آمیز از سوی بیماران یا مراجعان مواجه بوده اید؟ بلی □ خیر□ تمایل ندارم پاسخ دهم. □

143- اگر در معرض رفتارهای خشونت آمیز بیماران بوده اید، برای چه مدت؟ کمتر از یکماه □ 1 تا 6 ماه □ 7 تا 12 ماه □ 1 تا 2 سال □ بیشتر از 2 سال □

144-چه تعداد مراجع یا بیمار در آخرین شیفت کاریتان داشته اید؟	1 نفر یا کمتر	2	3	4	5	6	7 نفر یا بیشتر	سوال نامرتبط
145-تقریباً برای چه مدتی در پست فعلی مشغول به کار بوده اید؟	بیش از 10 سال □	9- 5 سال □		4- 2 سال □		2-1 سال □		کمتر از یک سال □

"سوالات جمعیت شناختی"

جنسیت: مرد □ زن □ **سن:** **وضعیت تاهل:** مجرد □ متاهل □ **تعداد اعضاء خانواده:**

تحصیلات:

سمت شغلی: **بخش، گروه یا قسمت:** **وضعیت شغلی:** 1. دائم □ 2. قراردادی □ 3. نیمه وقت □ 4. شرکتی □

شیفتهای شغلی: (صبح□ عصر□ شب□ گردشی□) اگر شغل دیگری (شغل دوم و یا سوم) دارید لطفا تعداد آن را ذکر نمایید؟