

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Stress, Well-Being and Emotional Intelligence in the Workplace

A thesis presented in partial fulfillment of the requirements for the degree of

Masters of Science
in
Psychology

at Massey University, Auckland,
New Zealand.

Amy-Kate Scott

2008

Abstract

The aim of this study is to investigate the relationships between Emotional Intelligence (EI) and demands, coping and outcomes in a transactional stress process (Lazarus & Folkman, 1984). The specific focus is whether EI acts to mediate or moderate any of the relationships in the stress process. The secondary objective is to explore the relationships between workplace demands, coping and the outcome variables of job satisfaction and psychological health.

The sample comprised of 186 New Zealand professional staff, from all role levels in industries including banking, insurance, exporting and consulting. The findings indicate that EI partially mediates between pressure from workplace relationships and positive outcomes, suggesting EI is particularly useful in dealing with interpersonal demands in the workplace. EI also mediates relationships between coping and outcomes. There was no support for the moderating role of EI. Such findings demonstrate that EI has an important role to play in the stress process.

Acknowledgements

I would first like to thank my thesis supervisor, Dr Dianne Gardner, for all of the valuable knowledge and support she has given me during this long process. Her help has been thoroughly appreciated. I would also like to thank Dr Paul Englert, of OPRA Group Ltd, for his ever-useful guidance and advice. Thank you sincerely to Genos Pty Ltd. for allowing me to use the Genos EI questionnaire free of charge, and for generously providing all participants with complimentary reports. In addition, thank you to Resource Systems for the use of the Pressure Management Indicator. I graciously thank the organisations who agreed to support this research, and each of the individual participants who took the time to complete the questionnaires. Without you this research would not have eventuated. Finally, I would like to thank my wonderful partner and parents. I do not know how I would have got here without your amazing support, ongoing encouragement and understanding.

This project was approved by Massey University's Human Ethics Committee: Northern; application number 07/064.

Table of Contents

Abstract	2
Acknowledgements	3
Table of Contents	4
List of Tables	7
List of Figures	8

CHAPTER ONE

Introduction	9
--------------------	---

CHAPTER TWO

Stress and the transactional approach	12
2.1 Background	12
2.2 Transactional theory of stress and coping	13
2.3 Outcomes of the stress process	15
2.4 Demands	16
2.5 Primary appraisal	19
2.6 Secondary appraisal	20
2.7 Coping	21
2.8 Coping in a transactional model	24
2.9 Demands – Coping relationships	25
2.10 Coping – Outcome relationships	26
2.11 Coping as a mediator	27
2.12 Coping as a moderator	28
2.13 Individual differences in the stress process	30

CHAPTER THREE

Emotional Intelligence	31
3.1 Introduction	31
3.2 Background	31

3.3	Defining emotional intelligence	33
3.4	Conceptual and measurement issues	34
3.5	Self-report measures of emotional intelligence	35
3.6	Emotional intelligence and workplace stress	36
3.7	Emotional intelligence's impact on the stress process	40
3.8	Emotional intelligence as a mediator of the stress process	41
3.9	Emotional intelligence as a moderator of the stress process	44

CHAPTER FOUR

Methodology	45
4.1 Procedure	45
4.2 Survey delivery	48
4.3 Participants	49
4.4 Stress/well-being measure (PMI)	51
4.4.1 Workload	52
4.4.2 Workplace relationships	52
4.4.3 Problem-focused coping	52
4.4.4 Social support	53
4.4.5 Job satisfaction	53
4.4.6 State of mind	53
4.5 EI measure (Genos)	54
4.5.1 Demographic information	55
4.5.2 Overall EI	55
4.5.3 Emotional self awareness	55
4.5.4 Emotional expression	55
4.5.5 Understanding others emotions	55
4.5.6 Emotional reasoning	56
4.5.7 Emotional self management	56
4.5.8 Emotional management of others	56
4.5.9 Emotional self-control	56
4.6 Data Analysis	57

4.6.1	Statistical Assumptions	57
4.6.2	Bivariate correlations	57
4.6.3	Mediation analysis	58
4.6.4	Moderation analysis	59

CHAPTER FIVE

Results	62
5.1 Demographic variables	62
5.2 Emotional intelligence correlations	62
5.3 Demands, coping and outcomes	63
5.4 Mediation of the Demand and Outcome relationship by problem-focused Coping	63
5.5 Moderation of the Demand and Outcome relationship by Social Support	66
5.6 Emotional intelligence, demands, coping and outcomes	67
5.7 Emotional intelligence as a mediator of the stress process	67
5.8 Emotional intelligence as a moderator of the stress process	72

CHAPTER SIX

Discussion	74
6.1 Associations between demands, coping and outcomes	74
6.2 Emotional intelligences' association with the stress process	77
6.3 Emotional intelligence as a mediator of the stress process	78
6.4 Limitations	78
6.5 Implications for Practice	79
7. Reference list	81
8. Appendices	90
Appendix A	
Appendix B	

List of Tables

Table 1	Demographic summary of all participants	50
Table 2	Correlation Matrix	64
Table 3	Mediation effect of EI on the relationship between workplace relationships and job satisfaction (hypothesis 20).	68
Table 4	Mediation effect of EI on the relationship between workplace relationships and state of mind (hypothesis 21).	69
Table 5	Mediation effect of EI on the relationship between problem-focused coping and state of mind (hypothesis 24).	71
Table 6	Mediation effect of EI on the relationship between problem-focused coping and job satisfaction (hypothesis 25).	72

List of Figures

Figure 1	14
Theoretical model of the stress process - adapted from Lazarus & Folkman, 1986	
Figure 2	25
Theoretical mediation of demands-outcome relationship by coping	
Figure 3	42
Emotional intelligence as a mediator of the relationship between demands and coping	
Figure 4	43
Emotional intelligence as a mediator of the relationship between coping and outcomes	
Figure 5	45
Emotional intelligence as a moderator of the relationship between demands and outcomes	
Figure 6.....	51
PMI Scales used	
Figure 7.....	58
Mediation casual chain (Baron & Kenny, 1986)	
Figure 8.....	60
Moderator model (Baron & Kenny, 1986)	
Figure 9.....	69
Hypothesis 20: Overall EI's partial mediation of the relationship between workplace relationships and job satisfaction	
Figure 10.....	70
Hypothesis 21: Overall EI's partial mediation of relationship between workplace relationships and state of mind	
Figure 11.....	71
Hypothesis 24 Overall EI's partial mediation of relationship between problem focus and state of mind	
Figure 12.....	72
Hypothesis 25: Overall EI's full mediation of the relationship between problem focus and job satisfaction	

Chapter One

INTRODUCTION

The experience of stress in working individuals is now reaching levels of epidemic in the industrialised world. A recent report from the UK states “stress-related sickness absence is costing British industry more than £3.7bn a year, and this only takes into account those employees who admitted to feeling under pressure.” (Sankaran, 2007). A body of research is now also suggesting sizeable proportions of the population are currently suffering from high levels of stress at work. Of note, Smith (2000) found that approximately 20% of a very large British sample reported experiencing either high or extremely high levels of stress at work. In addition, the New Zealand Department of Labour quotes studies that suggest 50-70% of all doctors visits made in Canada are stress related (Department of Labour, 2000). New Zealand specific data on the incidence of occupational stress is limited, however, it is likely that our experience of stress will be similar to that of other industrialised nations, especially those of Anglo-Saxon origin (Department of Labour, 2000).

As well as increasing attention being focused on the incidence of workplace stress, there is also a growing awareness of the harm that workplace stress can cause. A recent change to the Health and Safety legislation in New Zealand has now made it possible for organisations to be liable for psychological harm to their employees ((Department of Labour, 2007). This legislation has identified stress as a workplace hazard, and it requires that New Zealand employers take ‘all reasonably practicable steps’ to avoid their employees experiencing harm caused by workplace stress. Occupational health is also one of the key challenges identified in the Workplace Health and Safety Strategy for New Zealand, and the Department of Labour highlight that special attention needs to be paid to the often hidden, more complex occupational health issues, such as stress, that impact on absenteeism, productivity, and employee relations (Department of Labour, 2007).

In a hope to further understand workplace stress, this research will focus specifically on demands, coping, and outcomes in a transactional model of stress and well-being. Focusing on well-being as an outcome is consistent with the increasing interest into the determinants of positive outcomes in psychology, as opposed to a study dedicated to understanding maladaptive processes in a hope to avoid them. Research exploring happiness and its predictors is important because it illuminates factors that foster optimal psychological functioning” (Gallagher & Vella-Brodrick, 2008. p. 1152). In an attempt to understand what leads to employee well-being, this research will aim to understand the processes that are associated with high job satisfaction and a positive state of mind.

One of the variables that is hypothetically contributes to positive outcomes in the stress process is emotional intelligence. Instinctively stress and emotions are intricately related by their very definitions. An individual will generally ‘feel’ stressed, which is an emotional response. This close relationship with the realm of feelings suggests that those more equipped to deal with them ‘intelligently’ are likely to suffer less of the ill effects of stress than their less equipped counterparts.

When reviewing the role of emotions back in the early 1990’s, Pekrun and Frese (1992) concluded “there is little research that speaks directly to the issue of work and emotions” and that “industrial and organizational psychology *ought* to take the issue of emotions at work more seriously (p. 153). Nearly some 10 years on, academics were still surprised at the lack of research looking at the impact emotions have on workplace stress with Cooper, Dewe and O’Driscoll stating that “the lack of explicit attention to emotions in job stress research is disconcerting” (2001, p. 70). Emotions and the impact they have in the workplace is a research topic that has still received relatively little empirical attention to date, although, interest into this field is starting to increase. Such a call for a focus on emotions in stress research strengthens the rationale for conducting this research.

In their commentary on the lack of research on relationships between emotions and workplace stress, Cooper et al. (2001) highlight the likely relationships between Lazarus and Folkman’s (1984) transactional stress model and emotional reactions.

Research is starting to support such an assertion, with relationships having been found between EI and the perception of demands (Pau, et al., 2007) and better psychological health (Mavroveli, 2007). King (2005) also found a facet of EI mediated the relationship between the first part of the stress process, primary appraisal, and some coping behaviours.

It is likely that there are more relationships between EI and a transactional stress model which are yet to be uncovered. As a result, the aim of this research is to identify how EI impacts on the incidence and experience of stress and well-being, in a hope to highlight skills and resources that professional individuals can use to effectively manage their stressors to produce positive outcomes. In addition, parts of the transactional model of stress and well-being will also be tested. This research is likely to produce meaningful results that can inform resilience and coping training here and abroad.

Chapter Two

STRESS AND THE TRANSACTIONAL APPROACH

2.1 Background

The concept of psychological stress, since its introduction by Hungarian scientist Hans Selye in the 1930's (McEwan, 2002) has been used to describe so many differing concepts that agreement on a single, all encompassing definition has proved allusive. Individuals in the course of everyday life, for example, will refer to being 'under stress' which denotes an outside influence causing pressure, as well as 'feeling stressed' which signifies an internal outcome, thus confusing the definition. The question being is stress a precursor or an outcome?

It has been highlighted that it is not just popular conceptualisations of the word 'stress' that have caused confusion, but indeed the academic world has also been plagued by the inconsistent use of the term. For example, in research the concept of stress has variously been defined as both an independent and dependent variable, a stimulus and a response, as well as an interaction of the two (Cox, 1978). Cooper et al. suggest that "this confusion in terminology is compounded by the broad applications of the stress concept in medical, behavioural and social science research...each discipline has investigated stress from its own unique perspective" (2001, p. 2).

In early psychological stress research, there tended to be two common classifications: stimulus and response based stress. Stimulus-based models had stress as the independent variable, and response-based models framed stress as the dependent variable. However, these accounts were overly simplistic as they treated stress as an external component that could be expected to create certain outcomes – there was no room to account for the individual difference variables that so obviously were playing a part. As Lazarus and Folkman stated, "[the stimulus approach] assumes that certain situations are normatively stressful but does not

allow for individual difference in the evaluation of events” (Lazarus & Folkman, 1984). Stimulus/response definitions could not explain why two individuals can have differing outcomes when exposed to the same stressors. Since the 1960’s, there has been increasing recognition given to the fact that stressors are a part of life, and it is how we cope with such stressors that is so often important in terms of outcomes (Lazarus & Folkman, 1984).

Increasingly, theory and research have moved towards an analysis of the interaction of the stressor, the response, and the influence of the person-environment ‘fit’, as well as intra-personal factors such as appraisal of the situation. In recent times there has been more of a focus on the nature of the *process* of stress with transactional models integrating “stimulus and responses definitions within an overall conceptual framework that acknowledges the dynamic linkages between all elements of the stress process” (Cooper et al. 2001. p. 3). Transactional models of stress are formulated around the premise that there is a transaction that occurs between a person, their unique qualities, and that person’s environment. Through taking into account important individual differences, such a model aims to better explain the dynamic processes that occur to create an outcome after a stressor has been encountered. It is now generally accepted in empirical literature that the only appropriate way to conceptualise stress is as a transactional process.

2.2 Transactional Theory of Stress and Coping

The cognitive-appraisal model of Lazarus and Folkman (1984) is the most prominent in academic research today (e.g. Chandler et al, 2008; Eaton & Bradley, 2008; Sinha & Watson, 2007). When analysing psychological stress this model postulates that both appraisal and coping mediate the stress response. More specifically Lazarus and Folkman’s (1984) definition of stress places emphasis on the *relationship* between the person and the environment: “Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being.” (Lazarus & Folkman, 1984. p. 19).

Lazarus (1999) focuses on the interaction of both external environmental circumstances and individual difference variables combining to inform the appraisal and coping processes. One of the great benefits of the cognitive-appraisal model is its ability to account for variations in outcomes amongst individuals who are exposed to the same stress-inducing stimuli (demands). Lazarus and Folkman (1984) argue that a definition of stress which emphasizes the relationship between the person and the environment is consistent with the modern medical conceptualisation of illness, which no longer sees sickness as being caused solely by an external organism, but as also being influenced by an individual's susceptibility. Stress is considered a dynamic process in which both the person and the environment interact to produce outcomes.

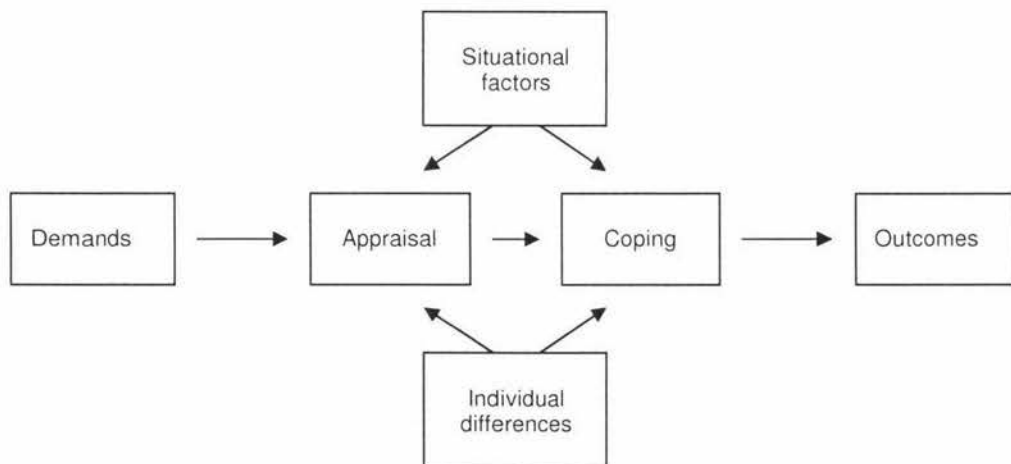


Figure 1. Theoretical model of the stress process (adapted from Lazarus & Folkman, 1984)

As the diagram suggests, demands lead an individual into making an evaluation as to whether or not these demands could potentially be a threat to their well-being. If an event is appraised as potentially harmful, then coping mechanisms are utilised. From here an outcome follows. Parts of the entire process will contribute to the

outcome, including the influence of individual differences and environmental factors.

Lazarus and Folkman's (1984) transactional definition pays particular attention to the importance of the persons *perception* of an event; that is, their appraisal of the situation. Appraisal is considered to underpin the entire stress process, and it is these appraisals that influence an individual's behaviour. There are two types of appraisal, primary and secondary. Primary appraisal is focused on evaluating the significance of a situation, and the potential impact it may have on one's well-being. Secondary appraisal is concentrated on the assessment of one's ability to cope. Although numbering gives the indication that the two types may happen sequentially, it is acknowledged that appraisal is a dynamic process and that usually these two types happen simultaneously due to the fact that one's ability to cope with a demand is an important contributor to whether that demand will be viewed as a threat or not.

Before introducing hypotheses about the stress process, a discussion on each of the variables in Lazarus and Folkman's (1984) transactional model of stress will follow.

2.3 Outcomes of the stress process

There are a vast range of outcomes that can be affected in the process of a stressful encounter, both work related and individually focused. For example, Williams and Cooper (1998) when measuring workplace stress have used a wide range of variables at the level of outcome, including job satisfaction, organisational satisfaction, energy levels, state of mind, and somatic complaints. Others potential outcomes identified in stress theories have been social functioning (Lazarus & Folkman, 1984) and affective outcomes (LeFevre, Matheny & Kolt, 2003). No research project could do the infinitely vast range of potential outcomes justice, and as such, it is necessary to focus attention so that findings can realise the specific aims of the project.

As this research hopes to inform organisations on the relationships between stress and adaptive workplace outcomes, job satisfaction was used as an outcome variable. Cooper et al. (2001) report that in terms of job stress research measuring psychological outcomes, job (dis)satisfaction is one of the two most frequently used outcomes. Job satisfaction measures the extent to which an individual is satisfied with the work that they do. Such a measure is useful for employees as it serves as a practical workplace measure of employee happiness.

It is also important to consider the implications of stress on the psychological health of the individual. In order to do this, the outcome variable of state of mind will also be assessed. Lazarus and Folkman (1984) identify morale as an adaptational outcome, and go on to state that subjective psychological well-being is one measure that can be used to assess it. State of mind is measured here by self-report. The scale specifically asks behaviourally oriented questions to ascertain how depressed or anxious an individual appears, with high scores indicating psychological well-being, and low scores reflecting poorer psychological health.

2.4 Demands

Moving back to the first element in the transactional model of stress, demands can be defined as those things that function as stressors for an individual. In the study of stress, job demands are considered an independent variable. Here they are defined as the psychological *stressors* in the work environment (Karasek, 1979). One such example would be the demands from workload.

The demands most commonly studied in psychology have been the environmental factors that can be objectively observed and measured as opposed to within-person sources. The two sources of workplace pressure evaluated in this research are perceived pressure from workload and workplace relationships. These two sources of pressure are prevalent in workplace stress literature, and in a hope to contribute to the greater understanding of workplace stress, were therefore considered appropriate

measures here. However, there is an indefinite range of workplace demands that are likely to be perceived as a threat to one's well-being. Other examples would be lack of recognition, pressures from managerial responsibilities and the organisational climate (Williams & Cooper, 1998).

Demands are considered to be an essential underlying factor in the experience of stress at work. Kahn and Byosiere (1992) emphasise that demands are a consistent point of convergence amongst all of the differing stress frameworks. For example, Karasek (1979) highlighted the importance of demands in his demands-control model of workplace stress. He considered demands to be an essential component in his conceptualisation of workplace stress, where he theorised that the outcome of mental strain was created by an interaction between high job demands and low decision latitude (Karasek, 1979). Johnson and Hall (1988) also placed demands centrally in their model of stress, the demands-control-support model, framing demands as an essential contributory factor to the experience of stress as an outcome. Finally, Lazarus and Folkman (1984) have followed along this line, and conceptualise demands as an essential component that comes at the beginning of their transactional model of stress.

Both Karasek (1979) and Johnson and Hall's (1988) models of stress measured demands as objective components of the environment. Cooper et al. (2001) emphasize that an important issue to consider when researching demands, with the specific example of workload, is whether it is *perceived* workload or actual demands. From a transactional perspective it is an individual's perception of pressure that is important. It is acknowledged that objectively defined characteristics of the work environment are not necessarily going to contribute to strain, due to the fact that individuals are likely to perceive them differently (Cooper et al., 2001). For example, if two individuals have the exact same workload, it is inevitable that one will consider the pressure of this workload to be higher than the other.

Workload for the purposes of this paper, is defined as the amount of work that an individual *perceives* they have. Quantitatively, workload refers to the sheer amount of work an individual is required to do, and the time frame in which it must be done. Working under time pressure is a major contributor to workload. In order to prevent strain, it is also optimal that there is a match between individual capabilities the work demands of a role (Cooper, et al. 2001).

The second demand considered here, is pressure from workplace relationships. This form of pressure is usually due to negative interactions with co-workers, which may occur through having to deal with colleagues who have abrasive personalities or having a leader whose leadership style is incompatible with the way an individual prefers to work. Again, it is the perception of the pressure which is critical to its potential impact. King (2005) in an investigation into the transactional model of stress in a New Zealand sample, found that pressure from workplace relationships was the most frequently identified workplace demand.

A relationship that is fundamental to all stress research is that the demands encountered will be related to outcomes. The transactional model posits that these relationships are in fact not direct but are mediated by coping. However, for coping, or any other individual difference variables to mediate the relationship, there first needs to be the primary correlation between demands and outcomes. As a result the following relationships will be tested:

Hypothesis 1: Those with higher levels of perceived workload will report lower levels of job satisfaction.

Hypothesis 2: Those with higher levels of perceived workload will report lower levels of well-being, as measured by state of mind.

Hypothesis 3: Those with higher levels of perceived pressure from workplace relationships will report lower levels of job satisfaction.

Hypothesis 4: Those reporting higher levels of pressure from workplace relationships will report lower levels of well-being, as measured by state of mind.

2.5 Primary Appraisal

Primary appraisal is a process of evaluation, with the purpose of ascertaining whether what is occurring is deemed to be a potential threat to one's well-being (Lazarus & Folkman, 1984). In terms of an individual's experience of stress, primary appraisal is an essential component, as it is the cognitive process that internally categorises an encounter as being possibly harmful to the well-being of that individual. There are a range of things that contribute to such an evaluation, including an individual's values, goals, self belief and perceptions of the world (Lazarus, 1999).

There are three potential outcomes that can eventuate from primary appraisal; irrelevance, benign-positive or a stress appraisal. An irrelevant appraisal means there is no implication for well-being as there is nothing to be lost or gained. A benign-positive appraisal occurs when the outcome is evaluated as positive or something that will enhance or preserve well-being. A stressful appraisal occurs when it has been evaluated that it is likely that there will be a risk to well-being. (Lazarus & Folkman, 1984).

Stressful appraisals are broken into a further three categories: harm/loss, threat and challenge appraisals. Harm/loss appraisals occur if the harm has already taken place. As a result, well-being has already been damaged and coping abilities are not needed. Threat concerns a harm or loss that has not yet occurred, however, is anticipated (Lazarus & Folkman, 1984). Challenge occurs when an individual feels

more enthusiastic about their anticipated struggle with the obstacles as they are confident they will succeed and gain a successful outcome (Lazarus, 1999).

Following on from the definition of stress, a key component to a stressful appraisal is whether the situation is or will tax or exceed available coping resources. Although individuals who appraise a demand as a challenge are optimistic, it is still considered a stressful situation as significant resources will still need to be mobilised in order to cope with the event. The joy of challenge comes from pitting oneself against the odds.

As mentioned earlier, primary appraisal focuses on evaluating the significance of the situation in terms of its potential impact on well-being. In contrast secondary appraisal is tied to the evaluation of coping ability and is only necessary once a threat to well-being has been established.

2.6 Secondary Appraisal

Secondary appraisal is the assessment of what can and might be done to cope; an evaluation of the resources and strategies an individual might use in order to manage a stressor. Secondary appraisal is a crucial element in the stress process. The final stress is dependent upon what is done to manage the demand that has been appraised as a potential threat to well-being. Secondary appraisal is conceptualised as a “complex evaluative process that takes into account which coping options are available, the likelihood that a given coping option will accomplish what it is supposed to, and the likelihood that one can apply a particular strategy or set of strategies effectively” (Lazarus & Folkman, 1984. p. 35). Lazarus (1999) emphasises the point that secondary appraisal is only an evaluation of coping options. It is not coping itself, but rather its cognitive precursor.

Lazarus and Folkman (1984) have commented on the unfortunate nature of the terminology used to describe the appraisal mechanisms, however believed a review

of the terminology would have caused confusion. Primary and secondary infers that they are time ordered and independent, however there is a dynamic connection between the two components. Whether something is evaluated as stressful is dependent upon the evaluation of the coping resources available.

2.7 Coping

The most widely accepted theory of coping informing contemporary research is again that of Lazarus and Folkman (1984), which sees coping as a necessary part of a transactional stress process.

Theorists who preceded Lazarus and Folkman (1984) in the coping field, generally focused on defence mechanisms when investigating coping following a psychoanalytic ego psychology approach (e.g. Hann, 1977; Menninger, 1963; Vaillant, 1977). The focus in these models was dependent upon unconscious processes and centred around pathology. In addition, earlier coping research often applied hierarchical models of coping behaviours. Behaviours were rated and those further up the hierarchy were considered universally more adaptive. Traditional models also tended to emphasize traits or styles of coping, for example Type A personality (Friedman, 1966) that were assumed to be rather constant across situations. Lazarus and Folkman (1984) took the focus away from the constant and highlighted the dynamic contextual aspects of the coping interaction, maintaining that a person's coping actions cannot be meaningfully removed from the context in which they occur, and that one coping behaviour cannot universally be thought of as more effective than another.

Following Lazarus and Folkman's (1984) approach, coping can be thought of as the "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). This definition highlights that thought and behaviour are intimately related to the contextual environment, and that

nothing can be considered constant in terms of coping. Efforts to cope, and the cognitive processes behind them, will continuously be in a state of flux. Lazarus and Folkman (1984) also highlight that coping is fundamentally different from automatized behaviour as there needs to be the awareness that a demand is 'taxing' or 'exceeding' ones available resources in order to feel under pressure. This level of consciousness around the interaction ensures that behaviour will never be automatic. Unlike hierarchical models of coping which attest to some behaviours as being universally more effective than other lower level behaviours, Lazarus and Folkman's (1984) model provides that the effectiveness of the coping method used is influenced by many factors, such as the type of person, the level of threat to well-being faced, and the stage of the stressful encounter (Lazarus, 1999.). The example of tendering for a large project can be used to demonstrate the importance of the context on coping behaviours. During the period leading up to the due date for a tender, it is adaptive to engage in problem-focused coping, and ensure that all that needs to be achieved is worked through. However, once the proposal has been handed in, distancing is far more adaptive, as nothing can be done at this point to change the result. However, if distancing had been used as a coping technique before the due date it is unlikely it would be considered an adaptive coping choice.

Lazarus (1999), in more recent times, conceptualised the relationship between stress and coping well. He stated that "Coping has to do with the way people manage life events that are stressful. To some extent, stress and coping could be said to be reciprocals of each other. When coping is ineffective, the level of stress is high; however, when coping is effective, the level of stress is apt to be low" (p. 102).

The coping literature is vast, and one challenge facing researchers is to find common language so that coping can be meaningfully discussed across various studies. A fundamental rationally derived differentiation in coping strategies, which has been widely accepted, is that of problem-focused and emotion-focused coping (Folkman & Lazarus, 1980). Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen (1986) differentiate the two by their main functions, "regulating stressful

emotions (emotion-focused coping) and altering the troubled person-environment relationship causing the distress (problem-focused coping)” (p. 993). Problem-focused coping is directed at changing or managing the issue causing the distress, whereas emotion-focused coping focuses on dealing with emotional responses.

This theoretical distinction provides a useful, broad approach to talking about a wide range of coping behaviours, and is used extensively throughout the coping literature (Folkman & Moskowitz, 2004). This paper will investigate problem-focused coping and its efficacy as a coping behaviour in the transactional stress process. Examples of problem-focused coping include making a plan to deal with a demand, or concentrating on the next behavioural step that needs to be taken. Emotion-focused coping will not be looked at here, as the vastness of potential variables for managing emotional responses to stress could not have been covered adequately.

Empirical research has also indicated the presence of two further coping behaviours (Folkman & Moskowitz, 2004), meaning-focused coping and social support. Meaning-focused coping accounts for the cognitive strategies that an individual will use to explain the meaning of a stressful situation and will be influenced by an individual’s values, beliefs and goals. Meaning-focused coping is likely to be useful in chronic situations which do not lend themselves to problem-focused efforts. It is a purely cognitive form of coping, and therefore is likely to be more difficult to measure than objective behaviour, such as is the case with problem-focused efforts. As a result, meaning-focused coping has not been studied in this investigation.

A social form of coping, is prevalent in coping research (e.g. Decker & Borgen, 1993). Social support as a coping resource is indicative of the help one gets by discussing pressures with others. This help from others can serve a multitude of purposes. House (1981) differentiated between four purposes of social support. First, instrumental support, which is generally practical in nature such as directly helping. Second, emotional support, such as showing interest, being understanding

and empathetic. Third, informational support, such as giving information that will help an individual cope with their problem. Lastly, appraisal support, which is providing feedback on an individual's functioning that may enhance self-belief. In addition, DeLongis (2005) reported that "in terms of the social context of coping, we have found that the key dimensions are the extent to which the individual is satisfied or disappointed with daily social support from close others" (p. 1635). This finding supports Barrera's (1986) social support research that indicated that it is the *perception* of support that is important, not actually how much the individual uses the social support that is perceived as being available. For the purposes of this research, all the functions of social support will be measured by one self-report scale. As it is a self-report measure, it can therefore be considered reflective of the participant's perception of social support, as opposed to the objective use of this coping method.

2.8 Coping in a transactional model

One of the major aims of coping research has been its desire to assess the relative effectiveness of various coping behaviours in the hope that coping will explain why some individuals fare better than others when encountering similar life stressors. It is acknowledged that many other variables, specifically individual differences, certainly contribute to outcomes in the stress process. However what is attractive about coping is the fact that it lends itself to training and intervention, whereas a great number of individual difference variables do not (Folkman & Moskowitz, 2004).

Lazarus and Folkman (1984) conceptualise coping as a mediator between demands and outcomes in a transactional stress process. Mediation occurs when a third mediating variable can be seen to account for at least some, if not all of the relationship between an independent and dependent variable. As a result, if coping mediates the relationship between demands and outcomes, positive outcomes can still occur even when extremely stressful demands are encountered (King, 2005).

Coping is seen as a mediator in this theory, rather than as a moderator, because coping is conceptualised as occurring after a demand has been encountered, not simultaneously as would need to be the case if it were to serve as a moderator (Lazarus, 1999). If coping does mediate the stress process in such a way, it will first be essential that the underlying associations between variables are in the expected direction (see hypotheses 1-4).

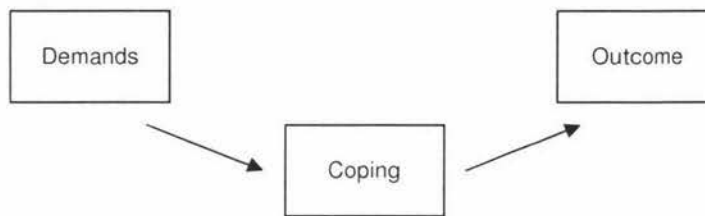


Figure 2. Theoretical mediation of demands-outcome relationship by coping.

2.9 Demands-Coping relationships

Following a transactional model (Lazarus & Folkman, 1984) we would expect higher demands to be associated with higher levels of reported coping; that is, the more demands a person reports having, the more coping behaviours they will also report using. Relationships such as this are to be expected between all demands and coping, except it is unlikely that problem-focused coping will be useful when dealing with often unchangeable interpersonal demands. On the basis of these theoretical premises, the following hypotheses will test these relationships:

Hypothesis 5: Workload will be positively correlated with the use of problem-focused coping.

Hypothesis 6: Workload will be positively correlated with the use of social support.

Hypothesis 7: Pressure from workplace relationships will be positively correlated with the increased use of social support.

2.10 Coping-Outcomes relationships

In addition, if mediation of the demand-outcome relationship by coping is to be possible, as theorised by Lazarus and Folkman (1984) higher levels of coping also need to be associated with better outcomes. That is, higher reported use of coping behaviours will be positively correlated with better outcomes. Previous research has found mixed evidence of these associations.

Although there have been mixed results for the relationship between the use of problem-focused coping and job satisfaction, Welbourne, Eggerth, Hartley, Andrew and Sanchez, (2007), found that problem-focused coping was associated with greater levels of job satisfaction. Their study focused on the effectiveness of a range of coping styles in a sample of 190 nurses. In addition, out of all of the coping styles selected for the research, including social support and avoidant coping, problem-focused coping explained the greatest amount of variance in job satisfaction scores.

There is also evidence suggesting that problem-focused coping is associated with better psychological health. Tattersall, Bennett and Pugh (1999) investigated the relationships between various methods of coping and the outcome of good psychological health in a study of hospital doctors. They found that problem-focused coping was positively associated with better health outcomes. Folkman et al. (1986) found that those who used problem-focused coping were also those who were more likely to experience positive outcomes in their study of families. Finally, Violanti's (1987) investigation found that the use of planful problem solving was associated with less distress in police recruits. In disagreement with such findings, Day and Livingstone (2001) found that problem-focused coping was not related to the outcome of stress health symptoms, however, their research focused on chronic workplace stressors, which is likely to explain the absence of a relationship. As mentioned earlier, context is an essential component of the usefulness of coping behaviours, and chronic, unchangeable demands do not lend themselves to problem-focused coping which aims to alter the situation to create a better outcome.

Findings are also mixed for the case that social support is associated with better outcomes in the stress process. Decker and Borgen (1993) in a sample of 249 employed individuals found that using social support as a coping method was associated with lower levels of outcome stress by individuals. Tyler and Ellison's (1994) research strengthens the case for social support being a useful coping mechanism. They found that nurses who had a partner had fewer stress symptoms than those with no partner, and attributed the more positive outcomes to social support. Again in contradiction, Day and Livingstone (2001) in their study on the efficacy of particular coping behaviours found no relationship between greater psychological function and the use of social support as a coping behaviour.

Although results are mixed, this study predicts that greater reported use of the adaptive coping strategies, used in this in research, will be associated with better outcomes. Specifically, the following hypotheses will be tested.

Hypothesis 8: Reported use of problem-focused coping will be positively correlated with job satisfaction.

Hypothesis 9: Reported use of problem-focused coping will be positively correlated with better state of mind.

Hypothesis 10: Reported use of social support will be positively correlated with job satisfaction.

Hypothesis 11: Reported use of social support will be positively correlated with better state of mind.

2.11 Coping as a mediator

As previously mentioned, transactional models of stress conceptualise coping as a mediator between demands and outcomes in the stress process. Ben-Zur (2005), in a representative community sample of Israelis found that the coping strategy

employed influenced the relationship between demands and affective outcomes. Specifically, the use of emotion-focused coping mediated the relationship between demands and coping and served to heighten the potential impact of demands, whereas problem-focused coping strategies were successful in reducing distress outcomes (Ben-Zur, 2005). King (2005) also found evidence of problem-focused coping's ability to mediate the stress process. In her study of New Zealand professionals, task-focused coping, a form of problem-focused coping, partially mediated the relationship between the appraisal of demands and affective outcomes. King (2005) also investigated social support's ability to mediate between appraisal of demands and affective outcomes and found no evidence of such a relationship. As a result it is hypothesised here that problem-focused coping will mediate between demands and outcomes in the stress process. Specifically, relationships will be tested between workload and problem-focused coping, as pressure from workplace relationships is unlikely to be as readily changeable, and therefore lend itself as a demand to being rectified or relieved through the use of problem-focused coping methods in the same way that workload will. As a result, the following two hypotheses will be tested.

Hypothesis 12: Problem focused coping will mediate the relationship between workload and job satisfaction.

Hypothesis 13: Problem focused coping will mediate the relationship between workload and state of mind.

2.12 Coping as a moderator

Social support is often hypothesised to moderate the stress relationship, or act as a buffer against the impacts of demands. Such a hypothesis proposes that the relationship between demands and outcomes will differ depending on the individual's level of social support. That is, those who use social support will experience less of the detrimental effects of demands than those who do not use social support (Cooper, et al., 2001).

Lim (1996) found that social support moderated between demands and outcomes in a stress process, in a sample of 306 American MBA graduates. Specifically, Lim (1996) investigated relationships between job insecurity and a number of outcomes including job and life satisfaction, and found that work-based social support significantly moderated the relationship between job insecurity and job satisfaction. Social support, both work-based and personal networks, also moderated between job insecurity and life satisfaction, with life satisfaction becoming higher as social support increased.

Moyle and Parkes (1999) also found evidence of the moderating effect of social support in workplace stress in a sample of English supermarket employees. Employees who were selected to transfer stores were evaluated before and after the transfer to ascertain the impact of transferring on their individual well-being. They found that the negative impact of transferring on well-being was buffered, or moderated, by social support. That is, those who had higher levels of social support did not suffer the same level of negative consequences from the move than their lower social support counterparts.

Investigating the role of social support in a police sample, Patterson (2003) found that social support buffered the relationship between reported number of stressful work events and distress as an outcome. This suggests that “when police officers seek social support in response to the field work events, it is effective in reducing distress” (Patterson, 2003. p. 223). Snow, Swan, Raghavan, Connell and Klein (2003) also found evidence for the moderating effect of social support in a sample of 239 female American secretarial workers. In this sample, social support was found to be a protective factor, and those who had higher levels of social support reported fewer psychological symptoms than their lower social support counterparts when facing the same level of demands.

Following the above findings, this research predicts that social support will act to moderate the relationship between demands and the outcome of psychological well-being as measured here by state of mind.

Hypothesis 14: Social support will moderate the relationship between workload and state of mind.

Hypothesis 15: Social support will moderate the relationship between pressure from workplace relationships and state of mind.

2.13 Individual differences in the stress process

In addition to coping behaviours, there is a wide array of individual difference variables that are thought to also impact on the relationship between demands and outcomes. These include such variables as personality, culture and personal values (Lazarus, 1999). One such personal value may be the importance one places on keeping work/life balance. In addition, emotional intelligence (EI) can also be considered an individual difference variable, as levels of EI vary significantly amongst the general population. Particular attention will be paid to the individual difference variable of EI in the following chapter.

Chapter Three

EMOTIONAL INTELLIGENCE

3.1 Introduction

Lazarus and Folkman's (1984) transactional stress model (see figure 1) allows for both environmental and individual difference variables to impact on the stress process. These outside influences are conceptualised as exerting their influence on primary appraisal and coping. Individual difference variables are those in which there is significant variation amongst a population, and emotional intelligence (EI) can be considered one such variable.

For the purposes of this research, EI is understood as a set of skills that "define how effectively we perceive, understand, reason with and manage our own and others' feelings" (Genos, 2006. p. 3). This study will investigate EI's ability to mediate and/or moderate relationships in the stress process. Specifically, this paper will investigate whether EI mediates the relationships between demands and outcomes and the relationship between coping behaviours and outcomes in the stress process. It is anticipated that findings will help to clarify the impact EI has in the stress process, and in so doing aid in the creation of improved resilience training programmes.

3.2 Background

Emotional intelligence (EI) was introduced by Mayer and Salovey (1990), however it was Goleman's book entitled 'Emotional Intelligence' (1995) that popularized the concept. During the late 1990's, increasing attention in the public domain and a proliferation of books on the subject saw EI become associated with effectiveness in the workplace (Cooper & Sawaf, 1997; Goleman, 1998). This corporate popularity was clearly demonstrated when the publication of an article by the Harvard Business Review in 1998 quickly became the review's most requested article (Cherniss & Goleman, 2002), which resulted in the article being republished in 2004 (Goleman, 2004).

The origins of EI can arguably be traced back to Darwinian theory when Darwin identified the importance of emotional expression for survival (Bar-On, 2006). However, it was not until the early 1900's that some researchers began to recognise that there appeared to be other forms of intelligence besides that of the purely cognitive realm.

E.L. Thorndike (1920) was the first to identify what he described as 'social intelligence', and defined this as "the ability to understand and manage men and women, boys and girls – to act wisely in human relations" (p. 228). This concept that is not dissimilar to parts of EI. However, forms of non-cognitive intelligence did not lend themselves to measurement as easily as cognitive abilities had, and Cronbach (1960) concluded that even though there had been around fifty years worth of intermittent investigation into social intelligence that it was still not clearly defined or measured and that "enough attempts were made....to indicate that this line of approach is fruitless" (p. 319).

In spite of Cronbach's assertions, fascination into the idea of intelligences outside the cognitive sphere continued. Gardner (1983) explored the idea of multiple intelligences concluding that there were potentially seven, two of which, interpersonal and intrapersonal intelligence, have since been related with the concept of EI (Goleman, 1995).

Attribution of the first use the EI concept as a distinct form of intelligence is usually given to Wayne Payne whose doctoral thesis was entitled *A study of emotion; developing emotional intelligence* (1986). However, Salovey and Mayer (1990) were the ones accredited with introducing the concept to the greater scientific community.

3.3 Defining Emotional Intelligence

EI has created controversy and a great amount of debate since its acknowledged inception as a psychological construct by Salovey and Mayer (1990). The range of definitions that have been employed since this time have been as varied as those who have sought to understand the topic, with many appearing to use the term as a 'broad brush' to explain anything that had to do with an emotional experience. Mayer, Roberts, and Barsade (2008) put it well when they stated that, "By 2007 the wide diversity of those interested in EI was matched by the wide diversity in the conceptions of EI they employed" (pg. 509).

There are three models of EI that are generally acknowledged in academic literature at this time. They are the ability model, mixed-model and the trait-based model. Salovey and Mayer (1990) are considered the proponents of the ability model and see EI as a skill that can be measured in the same vein as general intelligence (Salovey & Mayer, 1993). The largest group of EI researchers conceptualise EI as a mixed-model, viewing it as a range of non-cognitive skills which are more trait-like in their explanation. These skills are understood to be based upon inferred underlying ability (Bar-On, 1997; Cooper & Sawaf, 1997). Finally, the trait-based model proposed by Petrides, Furnham and Mavroveli (2007) classifies emotional intelligence as a personality construct rather than an ability. The complexity of the arguments around an emotional form of intelligence that is by its very nature so closely linked to behaviour, has contributed to EI being the highly contested construct that it is within the discipline of psychology.

To get a clear understanding of the concept of EI, instinct suggests breaking it down into its component parts, emotion and intelligence. Goleman (1995) defines emotion as "a feeling and its distinctive thoughts, psychological and biological states, and a range of provariations, mutations, and nuances." (pg. 289). Inherent in the definition of 'intelligence' is the idea that it requires the handling and reasoning of information (Carroll, 1993). Intelligence therefore need not only be defined in terms of academic knowledge. Mayer, et al. (2008) provide a definition of intelligence that can account

for a broad variety of skills and potentially multiple intelligences. They consider intelligence to be “a mental ability (or set of mental abilities) that permit the recognition, learning, memory for, and capacity to reason about a particular form of information such as verbal information” (Mayer, et al. 2008. pg. 509).

Taking into account the definitions of both intelligence and emotion, it would follow that emotional intelligence is the recognition, learning, memory for, and capacity to reason with feelings. For the purposes of this research, the Genos (2006) mixed-model of EI will be used. Genos’ (2006) definition states that “Emotional Intelligence involves a set of skills that define how effectively we perceive, understand, reason with and manage our own and others’ feelings.” (2006. p. 3).

3.4 Conceptual and measurement issues

Debate over the conceptualisation of EI has led onto dispute over how EI is best measured. Ability models view EI as an intelligence, and as such, believe it can be measured in the same way as a traditional reasoned ability, by way of a maximum ability intelligence test (Mayer and Salovey, 1993). In contrast mixed and trait-based models of EI are measured through behavioural reports, both self and multi-rater. In the case of mixed model EI, behaviour is theorised as inferring ability.

One of the strongest arguments for behavioural measures is that emotions do not fit the same logical and rational type of reasoning that other abilities have. There is a *feeling* element to emotions that is not shared by abilities such as verbal-comprehension (Petrides, Pita, & Kokkinaki. 2007b). As it is emotionally intelligent *behaviour* that we are ultimately after in the workplace, and ability does not necessarily perfectly translate into behaviour (Goleman, 1998), it follows that behaviourally based measures are more appropriate at assessing the implications of this form of intelligence. Unfortunately, proponents of mixed-models do not appear to have strongly advanced this perspective in defence of their approaches. However, regardless of the lack of defence for behavioural measures, the self-report mixed

model measure of EI is still the most frequently used approach for measuring EI in occupational settings (King, 2005). A behaviourally based self-report measure of emotional intelligence will be used for the purposes of this research due to its favourability in the workplace.

3.5 Self-report measures of Emotional Intelligence

There are a number of self-report measures of EI. Three commonly applied examples are the Goleman (1998) competency approach, the Bar-On EQI (2006) and the Genos EI (Genos, 2006) measure. The self-report measures of EI vary radically in the facets they measure further indicating the disagreement over the conceptualisation of the EI construct.

Mixed-models have been strongly criticised by the scientific community. One such critic, Locke (2005), argues that models such as these are so all-inclusive in their definition that it serves to make the concept proposed unintelligible. "The concept of EI has now become so broad and the components so variegated that no one concept could possibly encompass or integrate all of them" (Locke, 2005. p 426).

After Goleman (1995) initially popularised the concept of EI, he went onto develop a competency-based model of EI specifically for workplace application (Goleman, 1998). Competencies can best be conceptualised as an interaction between knowledge and ability which produces the desired effect, that being excellent behaviour. Goleman defines a 'competence' as "a personal trait or set of habits that leads to more effective or superior job performance" (1998, p. 16). Goleman (2004) derived his EI competency model, by analysing organisation's behavioural competency frameworks and clustering skills that he felt reflected emotional intelligence. As a result, this model can be considered theoretical in formulation. There are 24 competencies identified as being reflective of emotional intelligence, however, sometimes the links with one underlying ability could be described as tenuous at best.

Bar-On (2006) conceptualises the skills that are often referred to as 'emotional intelligence' as 'emotional and social intelligence' (ESI) to indicate that some are intrapersonal while others are interpersonal competencies. This model of EI is measured by the Bar-On Emotional Quotient Inventory (EQ-I). The EQ-I is a self-report tool that was developed from clinical practice. However, it is regularly used in occupational settings. This complex model measures five overarching components and 15 sub-components. Unique to this model is the inclusion of stress management and adaptability as two of the overarching constructs. Arguably these are constructs that are likely to be impacted by EI rather than compromise EI. The EQ-I has been criticised for its lack of theoretical construct validity, as measuring such a diverse range of skills suggests with a high degree of certainty that there is most likely more than one underlying psychological construct being measured. (Pfeiffer, 2001).

The Genos EI questionnaire is a psychometric test that was developed specifically for use in occupational settings (Genos, 2006). It is available as a self-report or multi-rater tool, and measures seven empirically derived factors of emotional intelligence. These factors are:

- Emotional self awareness
- Emotional expression
- Emotional awareness of others
- Emotional reasoning
- Emotional self management
- Emotional management of others
- Emotional self control

The questions that contribute to all of these seven factors also measure overall emotional intelligence, the one underlying construct. The Genos model of EI is arguably one of the most theoretically and empirically advanced in the mixed-model domain, and will be used to measure emotional intelligence in this study.

One limitation that plagues all psychological measurement is the need for inference. Like all psychological constructs, including intelligence, psychometric measures are only a posteriori estimation of an assumed internal, and therefore un-measurable, construct (Michell, 2000). So the relationship between a psychometric measure of an internal construct is only ever at best a representation of an inferred relationship and an imperfect estimation. This does not mean that psychometric measures are unhelpful. In many situations it is better to have a fair estimation than no information at all. It should be kept in mind, however, that any measure of EI used here can only ever be an estimation of the construct.

3.6 Emotional intelligence and workplace stress

There has been increasing research interest into the relationships between emotional intelligence and stress. Of particular interest in this research is how emotional intelligence is related to individuals response to stress in their environment and if it can be linked to more effective outcomes. A range of studies have indicated the potential important role EI can play in the workplace.

EI has been theoretically tied to effective outcomes in the stress process. Goleman (1998) suggests that it is emotion that motivates individuals and that “great work starts with great feeling” (1998, pg. 106). He further states that an individual who is emotionally intelligent will be able to manage their emotions so that they can effectively walk the line between boredom and immobilizing anxiety and use stress to their advantage, as a motivator. He conceptualises EI as a factor that helps individuals turn pressure into ‘good stress’, indicating the positive outcomes associated (Goleman, 1998).

Bar-On (2006) also intimately associates EI with effective stress outcomes in his theory of emotional-social intelligence. Bar-On (2006) claims that consistent with having higher emotional-social intelligence is the skill to “successfully cope with daily demands, challenges and pressures” (pg. 14), and this is due to one’s ability to

be aware of oneself, to understand one's own strengths and weaknesses and the ability to express thoughts and feelings in a non-destructive manner.

More recently, empirical research has begun to substantiate some of the claims made somewhat prematurely by theorists. Bar-On, Brown, Kirkcaldy and Thorne (2000) found a direct association between EI and job satisfaction in a sample of 314 working professionals. In addition, Kafetsios and Zampetakis (2008) recently found an association reflective of a medium size ($r = .43$) between trait EI and job satisfaction in a group of 523 educators. Slaski and Cartwright (2002) investigated EI and outcomes in the management population ($n = 224$) of a large retail chain in the UK and found that total EI was associated with more positive outcomes. Specifically high EI was associated with higher morale, lower levels of distress and lower levels of perceived stress in these managers (Slaski & Cartwright, 2002). Tsaousis and Nikolaou (2005) confirmed the finding that higher EI is associated with better psychological health in a study of 365 individuals. Finally, Mikolajczak, Menil and Luminet (2007) also found a strong negative association ($r = -.54$) between trait EI and burnout in a population of working individuals. As a result, EI is hypothesised here to be directly associated with better outcomes, as measured by job satisfaction and state of mind (a measure of psychological health).

Hypothesis 16: Those with higher levels of EI will also report higher levels of job satisfaction.

Hypothesis 17: Those with higher levels of EI will also report higher levels of state of mind.

EI has also been related to the perception of demands, in terms of theory and empirical evidence. For example, George (2000) theorised that there would be relationships between demands and EI, asserting that having higher EI will influence the way individuals' perceive demands.

Nikolaou and Tsaousis (2002) in an investigation of EI and occupational stress, found that overall EI was negatively correlated with all demand subscales. This

suggests that emotionally intelligent individuals feel less distressed at work. Nikolaou and Tsaousis (2002) separated respondents into high EI and low EI groups, and using *t* tests found significant differences between the groups in terms of their perception of pressure from work relationships and overload. Low EI individuals were significantly more likely to report greater pressure from work relationships and overload than their higher EI counterparts.

More recently, Pau et al. (2007) found a significant inverse relationship between EI and perceived demands in a sample of 596 dental students. That is, students with higher EI perceived less demands than their lower EI counterparts. EI continued to be a significant predictor of demands when gender and academic background were controlled. Pau et al. (2007) go on to assert that these results indicate that “students with higher EI can cope better with the stressful demands of their training” (Pau, et al. 2007, p. 201).

Finally, King (2005), in a study of New Zealand employees, found that pressure from workplace relationships was the most frequently identified workplace pressure. Although not tested in King’s (2005) research, it is suggested that due to the interpersonal EI competencies, there will be relationships between EI and the level of pressure from workplace relationships. King (2005) predicts that “low EI may increase this source of stress because EI encompasses an individual’s ability to understand the emotion of others and to modify their behaviour to best manage the situation” (pg. 76).

Following previous research indications, it is predicted in this paper that those with higher levels of EI will perceive lower levels of demands than their lower EI counterparts.

Hypothesis 18: Those with higher levels of EI will report lower levels of perceived stress from workload than their lower EI counterparts.

Hypothesis 19: Those with higher levels of EI will report lower levels of perceived stress from workplace relationships than their lower EI counterparts.

3.7 Emotional intelligence's impact on the stress process

Transactional models of stress conceptualise individual differences as important characteristics that have the ability to impact and interact upon the stress process (Slaski & Cartwright, 2002). Psychologists have studied many individual characteristics over the years in an attempt to find explanations as to why individuals faced with similar demands demonstrate varying degrees of well-being (Donaldson-Feilder & Bond, 2004). EI can be considered a major individual difference variable that may influence organisational outcomes and EI's ability to do so should be investigated further (Matthews & Zeidner, 2000; Zeidner, Matthews & Roberts, 2004).

The transactional stress model (Lazarus & Folkman, 1984) highlights the importance of psychological processes, and it has been suggested that EI could possibly be conceptualised as the psychological basis for adaptive coping, or emotional intelligence in action (Matthews & Zeidner, 2000). A link between EI and coping is consistent with Saklofske's (2007) finding. When data from their study on stress was factor analysed, EI and rational coping loaded on the same high-order factor, suggesting one construct. Adaptive coping is considered to coping that that leads to improved outcomes (Lazarus, 1993), or alternatively adaptive or functional coping behaviour is considered to exert its influence in the stress process by buffering against the immediate impact of a demand (Matthews & Zeidner, 2000). Jordan, Ashkanasy and Hartel (2002) have conceptualised EI as a moderator in the stress process exerting its effect on the relationships between pressure and coping behaviours. It is presupposed that low emotional intelligence employees will be more likely than higher EI employees to adopt negative coping strategies when faced with job insecurity. Such theoretical discussions demonstrate that EI is thought to be an important individual difference variable that is likely to play a central role in a transactional stress process.

As a result, EI is likely to be an important individual difference variable in the stress process and this study will investigate how EI interacts with this process.

Specifically, hypotheses will focus on whether EI acts to mediate or moderate the relationships between demands, coping and outcomes in a transactional stress process.

3.8 Emotional intelligence as a mediator of the stress process

Empirical evidence, although it is still relatively scarce, is starting to indicate that EI is an individual difference variable that is having an important influence in the stress process. Slaski and Cartwright (2002) findings in a workplace sample, indicated several relationships between EI and positive outcomes, which they believed were encouraging. Slaski and Cartwright (2002) go on to suggest that EI may play an important role in mediating or moderating the stress process and increasing individual resilience. If EI is acting as a mediator in the stress process it will be a variable that can explain the relationship between two other variables. That is, a mediator is the generative mechanism through which an independent variable is influencing a dependent variable (Baron & Kenny, 1986).

Kafetsios and Zampetakis (2008) undertook a study into the relationships between positive and negative affect, job satisfaction and emotional intelligence using a sample of 523 employed educators. Regression analyses indicated that the EI facet of emotional control can account for variance in positive affect at work. This research also found that another EI facet, perceiving others' emotions, can explain variance in job satisfaction over and above that explained by positive affect (Kafetsios & Zampetakis, 2008). Such findings suggest that EI can explain significant variance in positive workplace outcomes, strengthening the case for EI as a mediator in the stress process.

In a study aiming to identify predictors of occupational stress, Nikolaou and Tsaousis (2002) found that EI could account for significant variance in the levels of reported job stress over and above that explained by organisational commitment.

These results indicate that EI is able to partially explain the variance in stress levels of individuals, suggesting EI is functioning as a mediator in the stress process.

King (2005) undertook a study into the relationships between EI and Lazarus and Folkman's (1984) transactional model of stress in a hope to ascertain whether EI was best conceptualised as a mediator or moderator in the stress process. In this study of New Zealand professional staff, results found EI functioned as a mediator in the stress process. Specifically, King (2005) found that one dimension of EI, emotional management, had a partial mediating affect on the relationship between primary appraisal and the use of task-focused coping, and that the use of task-focused coping was associated with higher levels of positive affect. There was no evidence to support EI as a moderator of the stress process.

Theory and empirical research therefore suggests that EI may be functioning as a mediator in the stress process. To further understand how EI is influencing the stress process, this paper will break up the parts of the transactional stress model (Lazarus & Folkman, 1984) used here (demands, coping and outcomes) and test where EI, if at all, is mediating the stress process. First, hypotheses will focus on EI as a mediator of the relationship between demands and coping (see figure 3) and then of the relationships between problem-focused coping and outcomes (see figure 4).

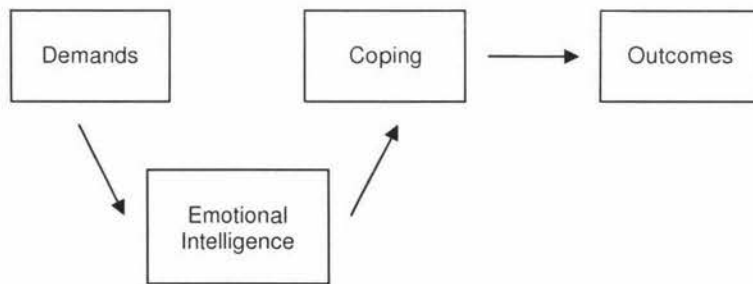


Figure 3: Emotional intelligence as a mediator of the relationship between demands and coping

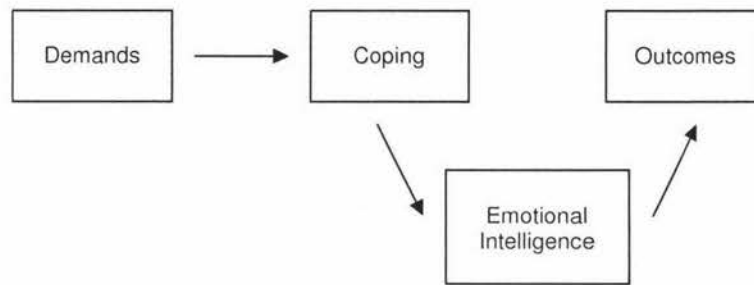


Figure 4: Emotional intelligence as a mediator of the relationship between coping and outcomes

To investigate these relationships, the following hypotheses will be tested:

Hypothesis 20: EI will mediate the relationship between workplace relationships and job satisfaction.

Hypothesis 21: EI will mediate the relationship between workplace relationships and state of mind.

Hypothesis 22: EI will mediate the relationship between workload and job satisfaction.

Hypothesis 23: EI will mediate the relationship between workload and state of mind.

Hypothesis 24: EI will mediate the relationship between problem-focused coping and state of mind.

Hypothesis 25: EI will mediate the relationship between problem-focused coping and job satisfaction.

3.9 Emotional intelligence as a moderator of the stress process

EI has also been conceptualised as a moderator in the stress process (Matthews & Zeidner, 2000). Moderation occurs when a third variable interacts with an independent variable to change an outcome; that is the effect of one variable depends on the value of another variable.

In support of the moderating ability of EI, Ciarrochi, Deane and Anderson (2002) found that EI acted to moderate between demands and a measure of psychological health, suicidal ideation, in a sample of Australian university students. Using hierarchical regression analysis, Ciarrochi et al. (2002) evaluated specifically whether EI facets could moderate the relationship between perceived stress and mental health. The EI facet, managing others emotions, was found to moderate the relationship between daily hassles and suicidal ideation. So when reporting the same level of daily hassles, those with lower levels of skill in managing other emotions were more likely to report suicidal ideation than their higher EI counterparts.

Mikolajczak et al. (2007) also found EI to be a moderator of stress responses. Breaking new ground in terms of EI and well-being research, they measured stress objectively through levels of salivary cortisol, a stress hormone, in a laboratory setting. In addition, subjective levels of stress were also measured. The focus was on whether trait EI moderated the relationships between a demand, in this case a social presentation task, and the stress outcomes. Results found EI acted as a moderator between the stress inducing task and both mood deterioration and cortisol levels. That is, a high trait EI individual's mood was less affected by the stress inducing task and they also had lower levels of salivary cortisol, than their lower EI counterparts. Such results are indicating that when individuals face the same demands, higher EI individuals are likely to have better outcomes than their lower EI counterparts. Mikolajczak et al. (2007) summarise that "this study extends and strengthens previous findings by showing that trait EI moderates not only the subjective response to stress, but also the objective (i.e. cortisol secretion) response" (p. 1007).

Empirical research has clearly indicated that EI can function to moderate the stress process, with higher EI individuals experiencing better outcomes when faced with the same demands as their lower EI counterparts. It is predicted here that overall EI may moderate the relationship between perceived workplace pressures and outcomes so that higher EI individuals when faced with the same pressures as their lower EI counterparts will experience better outcomes. Figure 5 depicts that EI will moderate the relationship between demands and outcomes, and this is what will be tested by hypotheses 26 and 27.

Hypothesis 26: EI will moderate the relationship between workplace relationships and state of mind.

Hypothesis 27: EI will moderate the relationship between workload and state of mind.

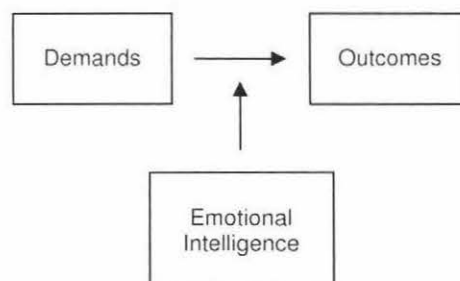


Figure 5: Emotional intelligence as a moderator of the relationship between demands and outcomes

Chapter Four

METHODOLOGY

4.1 Procedure

The aim of the research was to identify how emotional intelligence (EI) impacted on the experience of stress and well-being in professional individuals. In order to first measure stress and EI, permission was gained to use two commercially available psychometric tools to collect data, the Pressure Management Indicator (PMI) and the Genos EI self-report tool. Product owners/developers were contacted directly and written permission to use their tools free of charge for the purposes of academic research was given. The PMI is a workplace stress questionnaire which measures demands, individual differences/coping and outcomes. It was developed in the UK and is now used in organisations throughout the world (Williams & Cooper, 1998). The Genos EI self-report tool is an empirically derived psychometric questionnaire that measures seven facets of emotional intelligence as well as overall EI.

Ethical approval from Massey University was sought once permission to use the PMI and Genos EI tool were gained. As an incentive to complete the research, all participants received a free comprehensive Genos EI development report worth \$295NZD within 48 hours of completion of the survey. Although identifying information was not needed for research purposes, in order for an individual to receive their Genos EI report, a valid email address was needed. This information was collected by Genos Pty Ltd. and kept in strict accordance with their privacy and data security policies (see: <http://www.genos.com.au/privacy>). In accordance with assuring anonymity, email addresses of participants were not sent on to the researcher with the final data. To further ensure privacy, only raw scores and raw scale scores, as opposed to standardized comparative scores, were passed onto the researcher. The researcher gathered the PMI data through SurveyMonkey and permission was sought from participants to allow anonymous raw data to be sent on to distributors of the PMI, Resource Systems, for the purpose of creating

comparative norm groups. Permission was also attained for Genos Pty Ltd to keep the anonymous data to assist in the formulation of norm groups. This project was reviewed and approved in March 2008 by Massey University's Human Ethics Committee: Northern, application number 07/064.

To recruit participants, access to a national human resource consulting company's database was gained. Larger corporate organisations were identified and the appropriate contact was derived from the database and approached to see if their organisations were interested in participating in the research. Those who were interested acted as the internal champions for that organisation and were sent the standard introductory email (see appendix A) which contained an embedded link to the first survey. It was the internal contacts responsibility to distribute this throughout their organisation.

The study was comprised of two surveys. The first was the PMI, which measured all of the stress variables used in this research (demands, coping and outcomes). Participants who completed the PMI were then automatically taken to the starting page of the Genos EI questionnaire and invited to proceed. Genos EI collected all of the EI data. Data from the two surveys was linked after collection through the use of identifiers, personally created by the participants, which were asked to be used on both surveys.

The introductory email (see appendix B) outlined that the study consisted of two linked surveys. In addition, it highlighted that participation was voluntary and that all responses were confidential and not accessible to their organisation. It also stated that the survey was expected to take between 25-45 min to complete and that completion of the questionnaires implied consent. Participants were also informed in this email that if they completed the research they would receive a free comprehensive Genos EI development report worth within 48 hours. Participants were asked to make contact with the researcher if they had any concerns or questions about their personal EI reports. This was done to avoid any potential harm

to participants, and was in accordance with ethics approval. The researcher is an accredited Genos EI coach and would take participants through full feedback and coaching if necessary free of charge.

The link took participants to the information sheet (see Appendix B). Upon clicking to proceed, individuals were asked for their name or anonymous identifier before beginning the PMI questionnaire. Once the PMI questionnaire was completed, participants were automatically redirected to the first page of the Genos EI questionnaire. Results for the PMI were saved online through SurveyMonkey and could be downloaded into an excel spreadsheet. Both excel spreadsheets and internet results accessibility were password protected and only accessible to the researcher. Genos EI data was sent directly to the Genos Pty Ltd. database and upon completion forwarded onto the researcher in accordance with that discussed above.

There was no identifying link between the email request to the participant and the site they were requested to go to at surveymonkey.com or <http://ev.genos.net.au> to complete the questionnaires. With technology it is theoretically possible to trace the computer source of any link to an internet site, however, SurveyMonkey and Genos do not include that information in the survey results and do not make it available to researchers. SurveyMonkey and Genos guarantee anonymity provided that no identifying information is sought in the questionnaire. The database does not store details or track participant's email addresses. After six months the website membership of the researcher to SurveyMonkey will be terminated and information will be deleted from the internet. Data will also be deleted from the computers of the researchers after the research is completed.

4.2 Survey-Delivery

The methodology employed was an online survey. As the aim of the research involved the study of professional individuals, it was decided that an online survey was likely to be the most appropriate form of distribution to target this group

effectively. Kraut et al. (2004) state that “internet research is inherently no more risky than traditional observational, survey or experimental methods” (pg. 105) and affords some distinct advantages, such as the minimal cost involved in data collection and the automation of data which minimizes human error. Another useful advantage of internet research in this situation was the increased control over survey completion, as full data sets can be obtained as the survey will not allow participants to skip questions. As these tests were psychometric in nature, full data sets were necessary to ensure the psychometric properties of scales could be maintained.

Although the questionnaire was originally distributed within organisations and contained no request to pass it on, it appears through an analysis of the range of occupation groupings apparent in the final data that the link was sent on. This was to be expected. Respondent driven sampling is noted by Wejnert and Heckathorn (2008) to be a highly effective and efficient method of data collection, especially when the internet is used as a distribution tool.

4.3 Participants

Six corporate New Zealand organisations agreed to participant in the research. Industries included exporting, consulting, banking and insurance. A total of 186 cases were able to be used for data analysis. Two hundred and twenty nine individuals began the surveys and due to non completion 32 cases had to be deleted giving an attrition rate of 14%. A further 11 cases had to be deleted as the data could not be matched across the two surveys. Due to likely use of respondent driven sampling a accurate response rate could not be calculated.

All demographic questions apart from gender were voluntary, and as a result there was significant data missing. A demographic summary of the final sample is tabled below (see table 1). The sample appeared to be generally representative of a professional sample when looking at most demographic variables. The majority of participants had a Bachelors degree or higher qualification, suggesting a

professional group, and the majority of the sample were in the age bracket of 26-45, indicative of a standard working age group. Interestingly there were close to two times as many female as male respondents, which is unlikely representative. Females are often more interested in subjects like emotional intelligence, and it is likely that this propensity has contributed to higher female numbers.

Demographic Category	Frequency	Percentage
Gender		
Female	123	66.1%
Male	63	33.9%
Age		
<26	32	17.2%
26-35	56	30.1%
36-45	46	24.7%
46-55	15	8.1%
>56	7	3.8%
Missing	30	16.1%
Education Level		
Postgraduate	44	23.7%
Bachelor Degree or Graduate Diploma	57	30.6%
Other	43	23.1%
Missing	42	22.6%
Role Level		
Executive Level Manager	13	7.0%
Middle Manager	55	29.6%
Employee	70	37.6%
Other	8	4.3%
Missing	40	21.5%
Role Type		
Administration	25	13.4%
Operations	7	3.8%
Sales/Marketing	26	14%
Financial	12	6.5%
Managerial	38	20.4%
Other	44	23.7%
Missing	34	18.3%

Table 1 Demographic summary of all participants.

4.4 Stress/Well-Being Measure (PMI)

The Pressure Management Indicator (PMI) was used to measure the variables of interest in a transactional stress model for the purposes of this research. These were demand, coping and outcome variables. The PMI is a psychometric test consisting of 150 questions that create 24 scales. The scales are conceptualised into sources of stress (demands), individual difference/coping and outcome variables. In order to gain permission to use the test and to keep its psychometric properties, the questionnaire had to be completed in its entirety, however, only selected scales were used. Examples of questions could not be used here due to copyright restrictions.

Out of the eight sources of stress variables, two were chosen to be used in this research, workload and workplace relationships. These demands were selected as they are two of the most commonly researched workplace demands, and this research is specifically interested in workplace stress. Two out of the seven individual difference/coping variables, problem-focused coping and social support, were selected again for methodological reasons (see chapter 2 for a discussion). The PMI also measures nine outcome variables of which two, job satisfaction and state of mind, were used for the purposes of this research. These outcomes were selected to ensure a adequate diversity in well-being outcomes. Job satisfaction is an important well-being goal of many organisations, and state of mind is reflective of personal psychological health, a highly important personal well-being variable. Data was collected using a Likert scale on which labels varied depending upon the wording of the question.

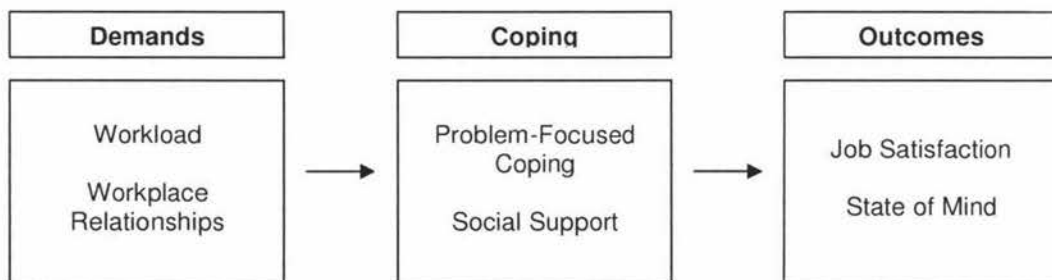


Figure 6. PMI Scales used.

4.4.1 Workload

The workload scale measures the amount of work an individual perceives they have. The measurement of perceived workload is in accordance with transactional stress theory which postulates that it is not the demand or the source of pressure that is important, but rather the *perception* of that pressure (Lazarus, 1966; Williams & Cooper, 1998). Participants were asked to rate how much of a source pressure a particular statement related to workload was for them, where; 1 = very definitely is not a source, 2 = definitely is not a source, 3 = generally is not a source, 4 = generally is a source, 5 = definitely is a source, 6 = very definitely is a source. The scale was made up of 6 items had good reliability, indicated by a Cronbach's alpha of .83 ($\alpha = .83$). This was a broad measure of a number of differing workload pressure sources, however, high scale reliability was expected as an alpha statistic of .84 was found in a very large sample during the original development of the tool (Williams & Cooper, 1998)

4.4.2 Workplace relationships

The relationships scale measures pressure from how well an individual gets on with those around them, particularly those at work (Williams & Cooper, 1998). On a 6-point rating scale participants were asked to rate how much pressure they felt from a number of relationship based situations which included a lack of support from colleagues, discrimination or favouritism, and feeling undervalued. Eight questions went into the scale which had good reliability ($\alpha = .90$).

4.4.3 Problem-focused coping

The problem-focused coping scale measures the extent to which time management, forward planning and task oriented skills are used to deal with problems. Skills may include, for example, time management and setting priorities. Participants were asked to rate how often they used a range of behaviours on a 6-point scale where; 1 = never used by me; 2 = seldom used by me; 3 = on balance not used by me; 4 = on balance used by me; 5 = extensively used by me; and 6 = very extensively used by

me. Six questions went into make up the scale and the reliability was acceptable ($\alpha = .73$).

4.4.4 Social Support

Social support is conceptualised in the PMI as a coping resource, and measures the help one gets by discussing situations with others (Williams & Cooper, 1998). It is a measure of the extent of which social support is used. Three questions made up the scale and the individual rated the extent to which they used the behaviour stated on a 6-point rating scale. Lower scores indicate less use of social support and higher scores indicate more use of social support. Scale reliability was acceptable ($\alpha = .82$).

4.4.5 Job Satisfaction

The job satisfaction scale measures the extent to which an individual is satisfied with the type of work that they do in terms of tasks and functions (Williams & Cooper, 1998). It is not related to how satisfied one is with their organisation, but is rather job specific. Participants were asked to rate their levels of satisfaction with their job on 6 items; where 1 = very much dissatisfaction; 2 = much dissatisfaction; 3 = some dissatisfaction; 4 = some satisfaction; 5 = much satisfaction; very much satisfaction. Reliability as measured by internal consistency was high ($\alpha = .89$).

4.4.6 State of Mind

State of mind is an outcome measure that rates how depressed or anxious an individual reports feeling. Low scores indicate poorer mental well-being and higher scores indicate contentment (Williams & Cooper, 1998). Questions were situationally based and asked participants if they ever felt a certain way. Items were rated on a 6-point rating scale with 1=definitely no (indicating disagreement with the statement) and 6=definitely yes (indicating agreement with the statement). Five questions, both positively and negatively worded, make up the scale and the internal consistency was acceptable ($\alpha = .83$).

4.5 Emotional Intelligence Measure (Genos)

Emotional Intelligence data was collected using the Genos EI questionnaire. This is a psychometric test consisting of 70 questions that create an overall measure of EI and seven sub-scales. All scales were made up of the sum of their items. In addition, the Genos questionnaire collected some demographic information.

This questionnaire is an empirically derived measure of EI, based on well developed theory and research (Genos, 2006). The Genos EI questionnaire is measuring behavioural indications of underlying EI skill. The overall EI score measures an individual's general workplace emotional intelligence. The seven sub-scales measure more specific workplace emotional abilities, namely, emotional self awareness, emotional expression, emotional awareness of others, emotional reasoning, emotional self management, emotional management of others and emotional self control.

There is a lot of debate surrounding the conceptualisation of EI, and the three models most prominent in research are the ability model (Salovey & Mayer, 1990); mixed models (e.g. Goleman, 1995; Bar-On, 2006); and trait-models (Petrides et al. 2007). The Genos EI is a mixed model (see chapter 3 for a discussion) of EI which measures behaviours as opposed to abilities. There is also little agreement on the structure of EI, and in turn debate around the facet structure of the concept, including its number of sub-constructs.

The Genos EI self-report questionnaire focuses on behaviour, and participants were asked to rate how often they believe they demonstrated certain behaviours. Data was collected using a 5-point Likert scale where 1 = almost never, 2 = seldom, 3 = sometimes, 4 = usually, 5 = almost always. Examples of questions have not been provided in the following discussion due to copyright restrictions.

4.5.1 Demographic Information

Gender was the only compulsory demographic variable. In line with ethics approval all other demographic data was voluntary. Data for the following demographic variables was collected through the Genos EI questionnaire:

- Gender
- Date of birth
- Education level
- Role level
- Role type

4.5.2 Overall EI

The measure for overall EI utilised all 70 behavioural questions from the Genos EI questionnaire. The reliability of this scale was very high ($\alpha = .94$).

4.5.3 Emotional Self Awareness

Emotional self awareness is conceptualised as the skill of perceiving and understanding one's own emotions. It looks at how frequently an individual is aware of their moods at work, the causes of their feelings, and the impact feelings have on their thoughts, decisions and behaviour. The emotional self awareness scale was derived from ten questions in the Genos EI questionnaire. The reliability of the scale was acceptable ($\alpha = .80$).

4.5.4 Emotional Expression

Emotional expression is a skill focused on the effectiveness of emotional expression. The scale was made up of ten items in the Genos EI questionnaire focusing on behaviours such as how an individual displays emotions like happiness and frustration at work. The reliability of the scale was acceptable ($\alpha = .77$).

4.5.5 Emotional Awareness of Others

Emotional awareness of others measures one's ability to perceive and understand the emotions of others. The scale was created through ten of the Genos EI questions

focusing on behaviours which demonstrate whether an individual displays understanding of how other people are feeling in a work context. The scale had acceptable reliability ($\alpha = .82$).

4.5.6 Emotional Reasoning

The scale measuring emotional reasoning measures one's skill in using emotional information in reasoning, decision making and planning. Again, ten items made up this scale that focused on behaviours which indicate whether an individual considers their own and others emotions when making decisions. Its reliability was below the usually considered acceptable level ($\alpha = .69$). This could indicate that emotional reasoning is not a strong facet construct and certainly leads to questioning of the seven factor model.

4.5.7 Emotional Self Management

The emotional self management scale is derived from ten items in the Genos EI questionnaire and measures an individual's skill in effectively managing their own emotions. A behaviour that may indicate high skill in emotional self management could be the ability to move on quickly from things that have upset you in the workplace. The reliability of the scale was within acceptable limits ($\alpha = .77$).

4.5.8 Emotional Management of Others

Emotional management of others scale measures one's skill in being able to influence the moods and emotions of others. It had ten questions from the Genos questionnaire that went into it and the scale had acceptable reliability ($\alpha = .83$). Behaviours that are considered part of this skill include the ability to create a positive work environment for others and the ability to help others resolve workplace issues.

4.5.9 Emotional Self Control

The emotional self control scale measures one's skill in being able to manage strong emotions. It differs from emotional self management in that it focuses on more

extreme emotional conditions, such as one's ability to remain focused while experiencing anxiety about a task. It was made up of ten questions from the Genos questionnaire. Its reliability was again below the acceptable level, and the lowest out of all the EI scales ($\alpha = .63$). This suggests that emotional-self control may not be a strong construct, and again leads question to the appropriateness of a seven facet model of EI.

4.6 Data Analysis

4.6.1 Statistical Assumptions

All variables from both the PMI and Genos EI questionnaires were calculated through a sum of their items. All selected scales were assessed for normality by generating histograms and analysing distribution statistics for kurtosis and skewness. The Kolmogorov-Smirnov statistic was used here to assess for normality (Pallant, 2003). It gives a measure of the goodness of fit between data and a standard normal reference distribution. All scales had non-significant results at a $p < .05$ level indicating they were normally distributed.

Histograms also allowed for the visual assessment of scales that had outliers. Outliers were identified on 4 scales; workload, emotional expression, emotional self management and emotional management of others. These scales were then closely examined to see if these scores were having a significant impact on scale means by removing the identified outliers and recalculating means. Any differences were found to be inconsequential as would be expected with a large sample size.

4.6.2 Bivariate Correlations

Correlations were calculated for all variables using the Pearson product-moment correlation. This follows recommendations by Pallant (2003).

4.6.3 Mediation Analysis

Mediation analysis was used to ascertain whether emotional intelligence and coping variables could explain relationships between variables in a transactional stress process. Mediation demonstrates the function of a third variable which represents the generative mechanism through which the independent variable is influencing the dependent variable (Baron & Kenny, 1986). Stated otherwise, the relationship between the independent and dependent variables can be explained by a third variable which mediates the relationship.

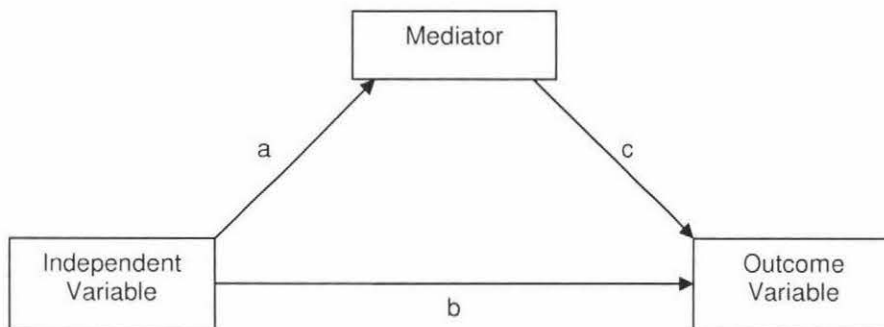


Figure 7: Mediation casual chain (Baron & Kenny, 1986).

Baron and Kenny (1986) recommend the calculation of three separate regression models to test for mediation. This involves three steps as outlined below:

- Step 1. Regress the mediator variable on the independent (outcome) variable. For mediation to occur the independent variable must have a significant relationship with the mediator.
- Step 2. Regress the dependent variable on the independent variable. For mediation to occur the criteria in step 1 must be met and in addition the independent variable must be significantly related to the outcome variable.

- Step 3. Regress the dependent variable on both independent variable and mediator.

Once the three regression models have been estimated, and all the conditions in steps 1 through 3 hold, then the effect of the independent variable on the dependent variable must be smaller in the third equation than it was in the second equation for mediation to have occurred. Full mediation is said to occur when the relationship between the independent variable and the dependent variable in step 3 is reduced to non-significance. Partial mediation occurs if this relationship is significantly reduced yet still significant (Baron & Kenny, 1986).

In line with recommendations by Baron and Kenny (1986) the Sobel test for the significance of mediations was used to test the strength of the effect.

4.6.4 Moderation Analysis

A moderator is a variable which interacts with an independent variable to alter the direction and/or strength of the relationship between an independent (predictor) and dependent (outcome) variable. The impact of the independent variable on the dependent variable is *dependant upon* the moderator variable (Bobko, 2001).

To evaluate the effect of emotional intelligence and coping to moderate the relationship between stressors and outcome variables, the hierarchical regression technique outline by Baron and Kenny (1986) was used.

When doing regression analyses, predictor variables should be checked for evidence of multicollinearity to avoid misleading or inaccurate results. This can be done by ensuring correlations between predictor variables are not above .50 (Leech, Barrett & Morgan, 2008). In addition, as recommended by Golberg and Cho (2004), before testing for interactions the independent and moderator variables were also 'centred' in order to reduce any potential additional effects of multicollinearity due to first order terms of the independent variable being compared to the higher order

interaction variable. Centring was achieved through subtracting the scale mean from all individual scores, which produces a revised sample mean of zero. Centring in effect standardises the scores and is achieved by subtracting the scale mean from each of the individual participants' scores.

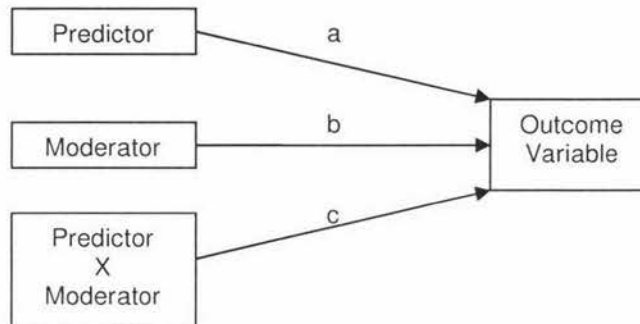


Figure 8: Moderator model (Baron & Kenny, 1986).

Figure 8 outlines the three relationships that feed into the outcome variable, the impact of the predictor, the impact of the moderator and the impact of the interaction between the product of the two.

Three steps were taken to test for main effects and moderation. The below steps outline the order of entry for the hierarchical regression.

- Step 1. Enter the predictor variable (and any demographic variables that need to be controlled for).
- Step 2. Enter the predictor and moderator into regression model (in addition to any of the demographic variables that need to be controlled for).
- Step 3. Enter the predictor, moderator and the interaction term (predictor x moderator) (in addition to any of the demographic variables that need to be controlled for).

When analysing results, moderation is said to occur if path 'c' (the interaction term) (see figure 8) is significant in the third step.

Chapter Five

RESULTS

5.1 Demographic Variables

There were no significant differences found among gender across any of the EI dimensions. The only significant difference found between the gender groups across variables was on the social support scale where women reported having more social support than men ($t(184) = -5.60, p < .01$).

There were no significant differences in any of the variables in terms of age, level of education and role type. Differing role levels did report varying levels of job satisfaction ($F(7, 138) = 3.77, p < 0.01$), with the executive management group appearing to be more satisfied than others. The group indicating their role level as 'other' also appeared to report lower levels of emotional management of others than their counterparts $F(7, 138) = 3.40, p < 0.01$. As greater than 25% of the data was missing on these demographic variables, they have not been controlled for in the analyses.

5.2 Emotional Intelligence correlations

All of the seven EI dimensions were significantly correlated with each other. Most had Pearson's r figures over .5, which are considered to reflect large effect sizes (Cohen, 1988) (see table 4). EI is a broad concept, and is conceptualised here as consisting of seven sub-constructs. As a result of this correlations were expected. Whether the construct of EI really does have seven dimensions is a conceptual issue that is up for debate. Theorists have put forward models with many more dimensions (Goleman, 1995; Bar-On, 2006) and some with less (Mayer & Salovey, 1990). As only scale data was provided from the test developers, a meaningful factor analysis on the structure of EI could not be completed, and as a result, the

scales created by the Genos developers have been used. Because of high intercorrelations between scales, and the questionable validity of two of the facet scales, only overall EI was used in analyses.

Interestingly, the more intra-personal control dimensions of EI, emotional expression, emotional self management and emotional self control, showed consistently higher correlations with each other than with the other EI dimensions. The highest correlation amongst the dimensions was between emotional expression and emotional self management. In addition emotional self control correlated most highly with emotional self management. Consistent with this distinction, the more inter-personally oriented dimensions, emotional awareness of others and emotional management of others, were also correlated particularly highly. This appears to be suggesting a two factor structure, intra and inter-personal EI, which is consistent with Bar-On's (2006) theoretical conceptualisation of the construct. The number of factors that make up EI is still an issue open for debate.

5.3 Demands, coping and outcomes

Hypotheses 1-4 predicted that there would be negative correlations between demands and outcomes. As expected, higher demands were associated with less positive outcomes. Workload was negatively correlated with state of mind, and pressure from workplace relationships was negatively correlated with job satisfaction and state of mind. Hypotheses 2, 3 and 4 were therefore supported. Hypothesis 1, that perceived workload would be negatively correlated with job satisfaction was not supported.

Hypotheses 5-7 predicted that higher levels of perceived demands would be related to higher levels of the use of two adaptive coping styles, problem-focused coping and the increased use of social support. Workload was uncorrelated with problem-focused coping and pressure from workplace relationships was uncorrelated with the

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	Mean	SD.
1. Workload	1														17.67	5.99
2. Workplace Relationships	0.35**	1													22.70	7.30
3. Problem Focus	-0.03	-0.17*	1												26.54	3.55
4. Social Support	-0.19**	0.01	-0.03	1											11.94	2.99
5. Job Satisfaction	-0.03	-0.38**	0.24**	0.02	1										27.42	4.59
6. State of Mind	-0.38**	-0.39**	0.30**	0.00	0.41**	1									22.59	4.65
7. Emotional Self Awareness	-0.06	-0.12	0.26**	0.23**	0.27**	0.37**	1								41.22	4.40
8. Emotional Expression	-0.03	-0.26**	0.33**	0.20**	0.45**	0.41**	0.61**	1							39.05	4.65
9. Emotional Awareness Others	0.03	-0.13	0.11	0.28**	0.28**	0.18*	0.54**	0.49**	1						40.15	4.49
10. Emotional Reasoning	0.14	-0.05	0.21**	0.17*	0.33**	0.18*	0.56**	0.57**	0.55**	1					38.97	4.15
11. Emotional Self Mgmt.	-0.18*	-0.33**	0.35**	0.13	0.38**	0.50**	0.52**	0.72**	0.38**	0.39**	1				38.05	4.46
12. Emotional Mgmt. Others	0.01	-0.18*	0.18*	0.26**	0.32**	0.31**	0.55**	0.68**	0.68**	0.64**	0.56**	1			40.31	4.57
13. Emotional Self Control	-0.10	-0.24**	0.18*	-0.05	0.27**	0.34**	0.41**	0.46**	0.45**	0.32**	0.57**	0.35**	1		39.27	4.01
14. Overall EI	-0.03	-0.24**	0.30**	0.23**	0.43**	0.43**	0.78**	0.84**	0.76**	0.75**	0.77**	0.83**	0.65**	1	277.03	23.72

Table 2. Correlation matrix.

use of social support. Therefore there was no support for hypotheses 5 and 7 respectively. The hypothesised correlation between workload and the use of social support was significant, but in the opposite direction to that expected, and therefore, hypothesis 6 was rejected. These findings demonstrate that the picture is more complex than that explained by the simple relationships between demands and coping. Findings on the complexity of this relationship are consistent with Lazarus and Folkman's (1984) transactional model of stress which highlights the importance of context in the stress process.

Social support and problem-focused coping have both been associated with positive outcomes in previous research. As a result, hypothesis 8 predicted higher levels of problem-focused coping would be associated with higher levels of job satisfaction and hypothesis 9 predicted that problem-focused coping would be positively correlated with state of mind. Both hypotheses were confirmed, with problem-focused coping having correlations reflective of positive medium effect sizes with both outcome variables.

In addition, the use of social support was also hypothesised to be positively related to outcomes. Hypothesis 10 theorised that higher reported use of social support would be related with higher levels of job satisfaction, and hypothesis 11 predicted higher levels of social support would be associated with higher levels of state of mind. However, there were no correlations between social support and outcomes, leading to rejection of both these hypotheses.

This data found that the use of problem-focused coping is associated with better outcomes, but reporting higher levels of social support is not related to outcomes at a simple bivariate level.

Mediation and moderation processes that may affect these variables are examined in 5.4 and 5.5.

5.4 Mediation of the demand-outcome relationship by problem-focused coping

Lazarus and Folkman (1984) theorise that coping mediates the relationships between demands and outcomes in the stress process. As a result, problem-focused coping was hypothesised to mediate the relationships between workload and outcomes.

Hypothesis 12, which predicted problem-focused coping would mediate between workload and job satisfaction, was not supported. Hypothesis 13 which predicted problem-focused coping would mediate between workload and state of mind was not supported either. Mediation could not occur as there was no relationship between problem-focused coping and workload, necessary for step 2 of mediation proposed by Baron and Kenny (1986). This ruled out the possibility of problem-focused coping mediating the relationship between demands and outcomes in the stress process.

5.5 Moderation of the demand-outcome relationship by social support

Hypothesis 14 predicted that social support would moderate the relationship between workload and state of mind, and hypothesis 15 theorised that social support would moderate the relationship between pressure from workplace relationships and state of mind. The independent variables, workload and pressure from workplace relationships, were both related to the dependant variable of workload, so there was a relationship to moderate.

Controlling for gender (as a dichotomous predictor variable), workload accounted for 14% of the variance in state of mind ($R^2 = .14^{**}$). Social support, and the interaction term however, did not add to the explanation of variance indicating moderation had not occurred, leading to hypothesis 14 being rejected.

Pressure from workplace relationships and gender, the control variable, accounted for 15% of the variance in state of mind in the first step of the hierarchical regression analysis ($R^2 = .15^{**}$). Again, the addition of social support at step 2, and the interaction term at step 3, did not add statistically to the variance accounted for in state of mind by pressure from workplace relationships alone, indicating moderation had not occurred. As a result, hypothesis 13 was not supported.

5.6 Emotional Intelligence, demands, coping and outcomes

Higher levels of EI were associated with higher levels of job satisfaction and state of mind, supporting hypothesis 16 and 17 respectively. Correlations reflective of medium effect sizes were found between overall EI and both of the outcome variables. These findings are consistent with a large body of research which has found associations between EI and positive workplace outcomes.

Hypothesis 18 predicted that higher EI would be associated with lower levels of perceived demands. This was not supported as there was no relationship between overall EI and perceived workload. Hypothesis 19 theorised that those with higher EI would perceive less pressure from workplace relationship, and this supported as EI was negatively correlated with workplace relationships.

5.7 Emotional intelligence as a mediator of the stress process

The role of EI as a mediator was explored. This section presents the analysis examining, firstly, whether EI mediated the relationship between demands and outcomes, and secondly, whether EI mediated the relationships coping and outcomes.

The pathways that were suitable for mediation testing were those with significant relationships between the independent and dependent variables and those in which

the independent variable was also related to the proposed mediator, in this case EI (Baron & Kenny, 1986). From table 2 it is evident that workplace relationships and state of mind, problem-focused coping and job satisfaction, problem-focused coping and state of mind are significant pathways and these were examined further.

Hypothesis 20 predicted that EI would mediate between pressure from workplace relationships and the outcome variable of job satisfaction. In accordance with steps 1 and 2 of Baron and Kenny's (1986) model of testing for mediation the independent variable, workplace relationships, was related to both the mediator and outcome variable. The correlation between workplace relationships was significantly reduced once EI was added into the regression at step 3 (see table 3). As a result, partial mediation occurred, supporting hypothesis 20 (see figure 9).

	Dependent Variable	Independent Variable	B	β	Sig.	Model R ²	Adj. R ²	Sobel Test	Med.
Hypothesis 20									
Step 1	Overall EI	Workplace Relationships	-.78	-.25	.00**	.06	.06		
Step 2	Job Satisfaction	Workplace Relationships	-.24	-.38	.00**	.15	.14		
Step 3	Job Satisfaction	Workplace Relationships	-.19	-.30	.00**	.26	.26	-3.11**	Partial
		Overall EI	.07	.35	.00**				

*<.05

**<.01

Table 3. Mediation effect of EI on the relationship between workplace relationships and job satisfaction (hypothesis 20).

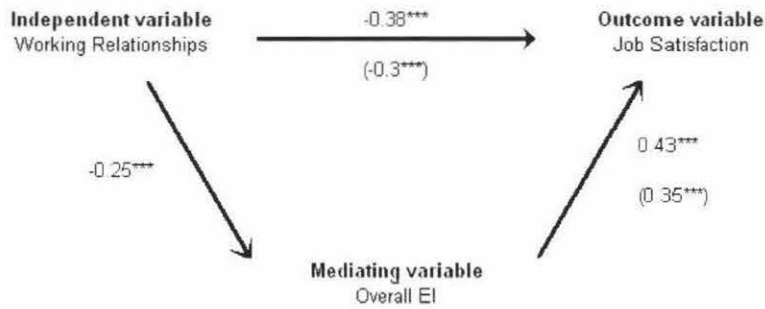


Figure . 9 Hypothesis 20: Overall EI's partial mediation of relationship between workplace relationships and job satisfaction (*p< .05, **p<.01, ***p<.001).

Hypothesis 21 proposed that EI would mediate the relationship between pressure from workplace relationships and the outcome of state of mind. As mentioned above, steps 1 and 2 of Baron and Kenny's (1986) model of testing for mediation were met. Hierarchical regression analysis, as outlined in table 4, found that EI partially mediated the relationship between pressure from workplace relationships and the outcome of state of mind, therefore supporting hypothesis 21.

	Dependent Variable	Independent Variable	B	β	Sig.	Model R ²	Adj. R ²	Sobel Test	Med.
Hypothesis 21									
Step 1	Overall EI	Workplace Relationships	-.78	-.25	.00**	.06	.06		
Step 2	State of Mind	Workplace Relationships	-.25	-.39	.00**	.16	.15		
Step 3	State of Mind	Workplace Relationships	-.20	-.31	.00**	.27	.26	-3.11**	Partial
		Overall EI	.07	.35	.00**				

*<.05

**<.01

Table 4. Mediation effect of EI on the relationship between workplace relationships and state of mind (hypothesis 21).

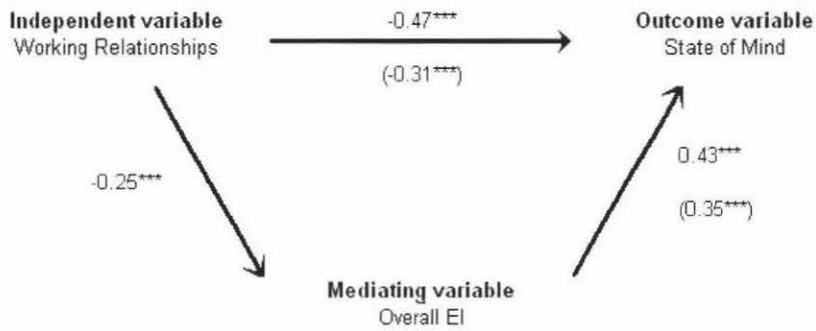


Figure 10. Hypothesis 21: overall EI's partial mediation of relationship between workplace relationships and state of mind (* $p < .05$, ** $p < .01$, *** $p < .001$).

Hypothesis 22 predicted that overall EI would mediate the relationship between workload and job satisfaction, but this was not supported. In accordance with the steps set out by Baron and Kenny (1986) the independent variable must be related to both the dependent variable and the mediator, and neither of these relationships were apparent in this situation.

Hypothesis 23 stated that overall EI would mediate the relationship between workload and psychological well-being. This was not supported as there was no relationship between workload and overall EI, the independent and mediator variables.

Hypotheses 24 and 25 were formulated to test whether EI acted as a mediator between coping and outcomes. Hypothesis 24 proposed that EI would mediate between problem-focused coping and state of mind. Problem-focused coping was significantly related to both state of mind and the mediator EI. In step 3, where EI and problem-focused coping were added into the regression equation together, the relationship between problem-focused coping and state of mind was reduced, but still significant, indicating partial mediation (see table 5; figure 11). As a result, hypothesis 24 was confirmed.

	Dependent Variable	Independent Variable	B	β	Sig.	Model R ²	Adj. R ²	Sobel Test	Med.
Hypothesis 24									
Step 1	Overall EI	Problem Focus	.44	.35	.00**	.12	.12		
Step 2	State of Mind	Problem Focus	.40	.30	.00**	.09	.09		
Step 3	State of Mind	Problem Focus	.19	.15	.03*	.27	.26	3.95**	Partial
		Overall EI	.47	.45	.00**				

*<.05

**<.01

Table 5. Mediation effect of EI on the relationship between problem-focused coping and state of mind (hypothesis 24).

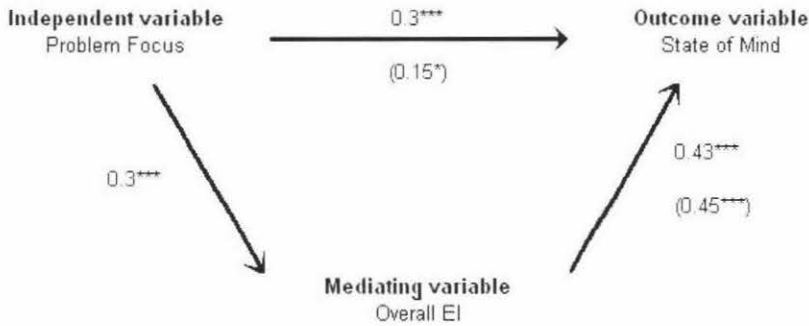


Figure 11. Hypothesis 24: overall EI's partial mediation of relationship between problem focus and state of mind (* $p < .05$, ** $p < .01$, *** $p < .001$).

EI was found to fully mediate the relationship between problem-focused coping and job satisfaction. As a result, hypothesis 25 was supported. At step three of Baron and Kenny's (1986) test for mediation, the addition of overall EI into the regression equation reduced the relationship of problem-focus with job satisfaction to a level below statistical significance (see table 6; figure 12) indicating full mediation. This finding implies that EI can account for all of the significant variance between problem-focused coping and the positive outcome of job satisfaction.

	Dependent Variable	Independent Variable	B	β	Sig.	Model R ²	Adj. R ²	Sobel Test	Med.
Hypothesis 25									
Step 1	Overall EI	Problem Focus	2.01	.30	.00**	.09	.09		
Step 2	Job Satisfaction	Problem Focus	.31	.24	.00**	.06	.05		
Step 3	Job Satisfaction	Problem Focus Overall EI	.16 .08	.12 .39	.09ns .00**	.20	.19	3.77**	Full

*<.05

**<.01

Table 6. Mediation effect of EI on the relationship between problem-focused coping and job satisfaction (hypothesis 25).

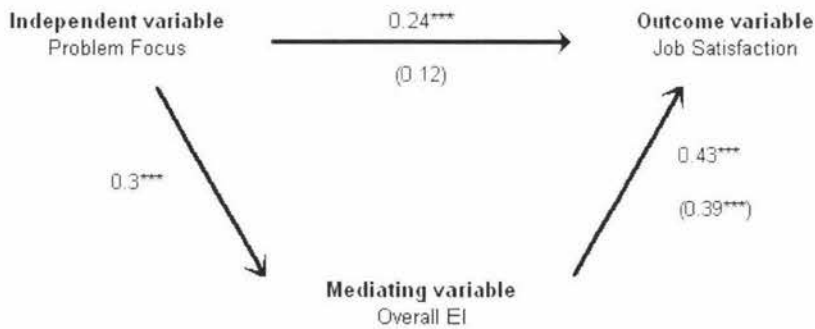


Figure 12. Hypothesis 25: overall EI's full mediation of the relationship between problem focus and job satisfaction (*p< .05, **p<.01, ***p<.001).

5.8 Emotional intelligence as a moderator of the stress process

It was hypothesized that EI would moderate the relationship between pressure perceived from workplace relationships and state of mind. Workplace relationships accounted for 15% ($R^2 = .15$) of the variance in state of mind. When EI was added to the regression (step 2) 26% of the variance in state of mind could be explained. However, in the third regression equation suggested by Baron and Kenny (1986), the interaction term did not significantly add to the variance explained. As a result, moderation did not occur, and hypothesis 26 was not supported.

Hypothesis 27 predicted that EI would moderate the relationship between workload and state of mind. This was not supported. Step 1 and 2 of Baron and Kenny's (1986) suggested model for mediation were significant, with workload and overall EI at step 2 accounting for 31% ($R^2 = .31$) of the variance in state of mind. However, again the interaction term did not add to the variance explained.

Chapter Six

DISCUSSION

The primary aim of this research was to investigate how emotional intelligence is related to psychological outcomes in accordance with the Lazarus and Folkman (1984) transactional model of stress. Specifically, the goal was to understand the role of EI as a potential mediator or moderator of workplace demands and coping on outcomes. Findings suggest that workload and pressure from workplace relationships are important for job satisfaction and an employee's state of mind, and that coping plays a role in the stress process. In addition, EI also appears to be influential throughout the stress process, particularly in regard to interpersonal processes. A secondary aim was to explore the relationships within a transactional stress process. Associations were not always as had been predicted. A discussion follows.

6.1 Associations between demands, coping and outcomes

Results indicated that the relationships between workplace demands and coping are complex. Two demands were explored, these being pressure from workload and workplace relationships. These demands have repeatedly been shown to be important and frequent stressors in the workplace (Cooper et al., 2001; King, 2005) and were therefore chosen to investigate here. Demands were generally related to outcomes, as had been expected.

The one exception to this was the lack of a relationship between workload and job satisfaction. This finding can be explained by appraisal research. It is likely that some individuals will appraise high levels of workload as a challenge and see it as a source of achievement (Cavanaugh, Boswell, Roehling & Boudreau, 2000) which will therefore lead on to increased job satisfaction, whereas others are likely to view

high workload as a threat. The range of appraisals in this sample is likely to have contributed to there being no discernable direct relationship between these variables. Higher levels of perceived workload were however related to lower levels of psychological health.

Importantly, pressure from workplace relationships was significantly negatively related to both outcome measures. Therefore those who perceived more pressure from workplace relationships also reported much lower levels of both job satisfaction and state of mind than their less pressured peers. King (2005) found that pressure from workplace relationships was the most frequently identified stressor in a sample of professional New Zealanders. These findings demonstrate that workplace relationships are a very important demand variable, and in addition, they are relevant to emotional intelligence.

The relationships between demand and coping behaviours was somewhat counter-intuitive. However, upon reflection these can be better elucidated. When people experience problems with workload, they seek help through the use of social support. According to these results, problem-focused coping is not being used to deal with workload issues, which was unexpected. This may be because the participants of this study do not have the relevant skills to draw upon when under pressure, and raises the question of whether time management/prioritising training may be useful.

In terms of the associations between pressure from workplace relationships and coping, it is interesting to see that more pressured individuals are less likely to use social support to deal with relationship pressure than their less pressured counterparts. This is likely due to the fact that is not available. If individuals are reporting pressure from workplace relationships, it is likely that they do not have support in the work environment that they can utilize. In addition, the more interpersonal hassles an individual reports the less problem-focused coping they are using. Decker and Borgen (1994) reported that in their research interpersonal

pressures seem to work relatively independently of the stress process. From the information we have available we are unable to tell what resources people are using to deal with interpersonal demands.

In agreement with the body of research (e.g. Folkman, et al. 1986; Tattersall, 1999) it was found that more use of problem-focused coping was related to better psychological functioning. This is important, as people who are more personally satisfied in the workplace are more likely to stay in their jobs (Cowin, Johnson, Craven & Marsh, 2008). In addition, the increased use of problem-focused coping was also associated with higher levels of job satisfaction which has frequently been inversely associated with the intention to leave a particular job. For example, Shields and Ward (2001) found that employees who were dissatisfied with their jobs had a 65% higher probability of intending to quit than those who reported being satisfied.

Although there have been mixed findings about the efficacy of social support, this research found no relationship with either of the outcomes. This is consistent with Day and Livingstone's (2001) earlier findings on the relative use of coping strategies on chronic stressors, but contradicts other workplace findings, such as that of Decker and Borgen (1994) who found that the use of social support was related to better outcomes generally. There are a range of differing types of measures for the use of social support, and perhaps this has played a part in the inconsistency of results.

Lazarus and Folkman's (1984) transactional model of stress postulates that coping mediates between perceived demands and outcomes. It was hypothesised therefore that problem-focused coping would mediate the relationship between workload and job satisfaction. This, however, could not be tested as there was no association found between workload and job satisfaction. Additionally social support was found to have no association with better outcomes and as a result could not mediate the relationship between demands and outcomes.

Social support was also tested as a moderator between demands and outcomes as previous research (Snow et al., 2003; and Patterson, 2003) has demonstrated social support's ability to act as a moderator in the stress process. Not unexpectedly, women reported using higher levels of social support than their male counterparts, however, even controlling for gender, social support did not moderate the relationship of demands with outcomes. As previously mentioned, varying measures of social support are likely one cause of the vast variation in findings.

6.2 Emotional intelligence's associations with the stress process

EI was found in this study to be related to interpersonal stressors and not important in terms of workload stressors. This is not surprising as EI has been theorised to be related to the social aspects of the workplace and particularly important for managing problems and issues that are interpersonal in nature. (Goleman, 1998; Bar-On, 2006). As such, one would expect higher EI individuals to have more effective workplace relationships, leading to less reported pressure.

Although it was not predicted, the lack of a relationship between the non-interpersonal demand of workload can be explained by EI theory as mentioned above. Workload is a demand likely unrelated to social aspects of the workplace, and as such, its lack of relationship with overall EI is understandable. Interestingly, workload was related to a facet of EI, emotional self management, suggesting that those with higher skill in managing their own emotions are likely to perceive less stress. This makes sense, as this facet of EI is focused on personal internal mechanisms, not the interpersonal components. Basic associations do confirm Goleman's (1998) assertion, that those with higher EI appear to experience less stress. The clear association between overall EI and less reported pressure from workplace relationships is particularly promising. Further research should investigate EI facets relationships with stress.

6.3 Emotional intelligence as a mediator of the stress process

EI was found to act as a mediator in the stress process. EI partially mediated between the interpersonal demand of pressure from workplace relationship and both outcome variables demonstrating that it has an important part to play in the stress process. EI appears to be a mechanism by which people facing interpersonal hassles in the workplace can maintain their psychological well-being, and potentially even reduce interpersonal hassles as well.

EI was also found to mediate between problem-focused coping and outcomes. EI was responsible for some of the relationship between the use of problem-focused coping and positive state of mind as it was found to be a partial mediator of this process. Surprisingly, EI was found to fully mediate the relationship between problem-focused coping and job satisfaction. This indicates that EI is able to account for the positive relationship between problem-focused coping and job satisfaction. This is an important finding as it strengthens the case for the importance of EI in the workplace. This data suggests that were it not for emotional intelligence, there would be no significant relationship between problem-focused coping and higher job satisfaction.

EI was also tested for its ability to interact with demands to influence the impact they had on outcome variables. This research did not support the role of EI as a moderator of the stress process. EI, according to this paper, is best conceptualised as a mediator in the stress process, a finding consistent with that of King (2005).

6.4 Limitations

The major limitation of this research is that it is a cross-sectional study. Using a cross-sectional design means that causal inferences cannot be made about the relationships between the variables examined. It is possible, for example, that state of mind is impacting upon emotional intelligence, and not vice versa as proposed.

Future research should look to understand the causal pathways, through both the use of structural equation modelling and longitudinal study designs.

Another possible limitation of this study is how data was collected. Data was collected at one time using an online survey. As a result, there may be some problems with mono-method bias. The problem inherent in the use of a single method to collect data is that any effect found may be an artefact of the method employed rather than the construct under study. For example, the social support variable did not act as was predicted, and this may have been due to its measurement. The fact that the study was a one-time measure also means that the full breadth of the variables may not have been covered.

Finally, this study was made up of participants who were generally a white-collar professional sample who had internet access. This is a reasonably specific group of individuals, and as a result the findings cannot be generalised too far.

6.5 Implications for practice

This research has found relatively strong associations between EI and the desirable outcomes of job satisfaction and positive state of mind, further supporting the notion that EI is related to positive outcomes.

It was also found in this study that higher levels of workload are not in fact associated with lower levels of job satisfaction. However, high workload is associated with poorer state of mind. Although this is a point that needs to be investigated further, if employers are trying to increase job satisfaction they should be aware that a decrease in workload may not be an effective remedy.

In addition, EI was found to mediate between pressure from workplace relationships and well-being, suggesting it is an individual difference variable that should duly be considered important for its ability to contribute to better psychological outcomes

when individuals experience certain workplace stressors. Specifically, findings from this research suggest that EI appears to be able to help people with interpersonal issues, although not issues to do with workload. This demonstrates that although not a cure all, EI has its uses in mitigating workplace stress.

EI was also found to fully account for the relationship between problem-focused coping and job satisfaction. Job satisfaction is an important outcome variable as it has been shown to have strong associations with an employee's intention to leave (e.g. Shields & Ward, 2001). This finding seems to suggest that increasing skill in EI is likely to be more effective in raising levels of job satisfaction than is traditional problem-focused coping training such as time management courses. These results should be interpreted with caution however, as causation cannot be inferred from this study. EI was also able to partially account for the relationship between problem-focused coping and state of mind. These results again strengthen the premise that EI is an important workplace variable that is likely to be associated with positive outcomes in the workplace.

In conclusion, EI has been found to have clear associations with positive outcomes within this New Zealand sample. Additionally, EI's ability to mediate several relationships in the transactional stress process indicates that EI is an important variable that should not be overlooked for its potential to contribute to positive outcomes in the workplace. Of particular note are the indications that EI is likely to lead to more effective functioning when dealing with interpersonal relationships.

7. References

- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence (ESI). *Psicothema*, 18 . *supl.*, 13-25.
- Bar-On, R., & Parker, J. Eds. (2000). *The handbook of emotional intelligence. Theory, development, assessment, and application at home, school, and in the workplace*. San Francisco: Jossey-Bass.
- Bar-On, R., Brown, J.M., Kirkcaldy, B.D., & Thorne, E.P. (2000). Emotional expression and implications for occupational stress; an application of the Emotional Quotient Inventory (EQ-I). *Personality and Individual Differences*, 28, 1107-1118.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Barrer, M (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology*, 14, 413-445.
- Ben-Zur, H. (2005). Coping, distress, and life events in a community sample. *International Journal of Stress Management*, 12(2), 188-196.
- Bobko, P. (2001). *Correlation and Regression. Applications for Industrial Organizational Psychology and Management*. Thousand Oaks, California: Sage.
- Brackett, M.A., & Mayer, J.D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin*, 29 (9), 1147-1158.
- Brackett, M.A., Rivers, S.E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: A comparison of self-report and performance measures of emotional intelligence. *Journal of Personality and Social Psychology*, 91(4), 780-795.

- Brackett, M.A., Warner, R.M., & Bosco, J. 2005. Emotional intelligence and relationship quality among couples. *Personal Relationships*, 12 (2), 197-212.
- Cavanaugh, M.A., Boswell, W.R., Roehling, M.V., & Boudreau, J.W. (1998). Challenge and hindrance related stress among U.S. managers. *Journal of Applied Psychology*, 85, 65-74.
- Chandler, M., Kennedy, P., & Sandhu, N. (2008). The association between threat appraisals and psychological adjustment in partners of people with spinal cord injuries. *Rehabilitation Psychology*, 52(4), 470-477.
- Chang, E.C., & Strunk, D.R. (1999) Dysphoria: relations to appraisals, coping and adjustment. *Journal of Counseling Psychology*, 46(1), 99-108.
- Cherniss, C. & Goleman, D. (2002). *The emotionally intelligent workplace: How to select for, measure, and improve emotional intelligence in individuals, groups and organisations*. Amazon: New York.
- Ciarrochi, J., Deane, F., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences*, 32, 197-209.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Cooper, C.L., Dewe, P.J., & O'Driscoll, M.P. (2001). *Organizational Stress: A review and critique of theory, research and applications*. Thousand Oaks: Sage.
- Cooper, R.K., & Sawaf, A. (1997). *Executive EQ: Emotion intelligence in leadership and organizations*. New York: Grosset/Putnam.
- Cowin, M., Johnson, R., Marsh, C. (2008). Casual modelling of self-concept, job satisfaction, and retention of nurses. *International Journal of Nursing Studies*, 45(10), 1149-1259.
- Cox, T. 1985. *Stress*. (2nd ed.) New York: MacMillian.
- Cronbach, L.J. (1960). *Essentials of psychological testing* (2nd ed.). Oxford, England: Harper.

- Day, A.L., & Livingstone, H.A. (2001). Chronic and acute stressors among military personnel: do coping styles buffer their negative impact on health? *Journal of Occupational Health Psychology, 6*(4), 348-360.
- Decker, P.J., & Borgen, F.H. (1993). Dimensions of work appraisal – stress, strain, coping, job satisfaction, and negative affectivity. *Journal of Counseling Psychology, 40*(4), 470-478.
- Department of Labour (2006). *Occupational Health Research Strategy*. Retrieved from <http://www.otago.ac.nz/research/forms/HRC>
- Department of Labour (2000). *Minister of Labour: Review of the Health in Safety in Employment Act 1992: Working time / occupational stress*. Retrieved from <http://www.osh.govt.nz/publications/hseamend-cabinet/hours-work-stress000914.pdf>
- Donaldson-Feilder, E.J., & Bond, F.W. (2004). The relative importance of psychological acceptance and emotional intelligence to workplace well-being. *British Journal of Guidance and Counselling, 32* (2), 187-203.
- Eaton, R.J., & Bradley, G. (2008). The role of gender and negative affectivity in stressor appraisal and coping selection. *International Journal of Stress Management, 15*(1), 94-115.
- Folkman, S., & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behaviour, 21*(3), 219-239.
- Folkman, S., Lazarus, R.S. Dunkel-Schetter, C., DeLongis, A., & Gruen, R. (1986). The dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology, 50*(5), 992-1003.
- Folkman, S., & Moskowitz, J.T. (2004). Coping: pitfalls and promise. *Annual Review of Psychology, 55*, 745-768.
- Friedman, M. (1966). *Type A Behaviour: Its diagnosis and treatment*. New York: Plenum Press.

- Gallagher, E.N., & Vella-Brodrick, D.A. (2008). Social support and emotional intelligence as predictors of subjective well-being. *Personality and Individual Differences, 44*, 1151-1561.
- Genos Pty Ltd. (2006). *Genos: EI coaching accreditation manual*. Sydney, Australia: Genos.
- George, J.M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations, 53*, 1027-1055.
- Golberg, M.A., & Cho, H.A. (2004). *Introduction to regression analysis*. Southampton: WIT Press.
- Goleman, D. (1995). *Emotional intelligence: why it can matter more than IQ*. New York: Bantam Dell.
- Goleman, D. (1998). *Working with emotional intelligence*. New York: Bantam.
- Goleman, D. (1998b). What makes a leader? *Harvard Business Review, 76*(6). 93-102.
- Goleman, D. (2004). What makes a leader? *Harvard Business Review, 82*(1). 82-91.
- Hann, N. (1977). *Coping and defending: Processes of self-environment organization*. New York: Academic Press.
- House, J. (1981). *Work stress and social support*. Massachusetts: Addison-Wesley.
- Jordan, P.J., Ashkanasy, N.M., & Hartel, C.E. (2002). Emotional intelligence as a moderator of emotional and behavioral reactions to job insecurity. *Academy of Management Review, 27*(3), 361-372.
- Johnson, J., & Hall, E. (1988). Job strain, work place social support and cardiovascular disease: A cross-sectional study of a random sample of the working populations. *American Journal of Public Health, 78*, 1336-1342.
- Kafetsios, K., & Zampetakis, L.A. (2008). Emotional intelligence and job satisfaction: Testing the mediatory role of positive and negative affect at work. *Personality and Individual Differences, 44*. 712-122.
- Kahn, R.L., & Byosiere, P. (1992). Stress in Organizations. In M.D. Dunnette (Ed.), *Handbook of Industrial and Organizational Psychology* (pp. 571-648). Chicago: Rand McNally.

- Karasek, R.A. (1979). Job demands, job design latitude, and mental strain: implications for job redesign. *Administrative Science Quarterly*, 24(2), 285-308.
- King, M.P. (2005). *Is emotional intelligence a mediator or moderator of the stress process?* Unpublished master's thesis, Massey University, Albany, New Zealand.
- Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. (2004). Psychological Research Online: Report of Board of Scientific Affairs' Advisory Group on the Conduct of Research on the Internet. *American Psychologist*, 59(2), pp. 105-117.
- Lazarus, R.S. (1999). 'A new synthesis: Stress and Emotion'. New York: Springer.
- Lazarus, R.S. & Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.
- Lazarus, R.S. (1993). Coping theory and research: Past, present and future. *Psychosomatic Medicine*, 55, 237-247.
- Lazarus, R.S. (1966). *Psychological stress and the coping process*. New York: McGraw Hill.
- Leech, N.C., Barrett, K.C., & Morgan, G.A. (2008). *SPSS for intermediate statistics: use and interpretation*. New York: Taylor & Francis Group.
- LeFevre, M., Matheny, J., & Kolt, G. (2003). Eustress, distress, and interpretation in occupational stress. *Journal of Managerial Psychology*, 18(7), 726-744.
- Lim, V. (1996). Job insecurity and its outcomes: Moderating effects of work-based and nonwork-based social support. *Human Relations*, 49(2), 171-194.
- Locke, E.A. (2005). Why emotional intelligence is an invalid concept. *Journal of Organizational Behavior*, 26, 425-431.
- Lopes, P.N., Brackett, M.A., Nezlek, J.B., Schutz, A. Sellin, I., & Salovey, P. (2004). Emotional intelligence and social interaction. *Personality and Social Psychology Bulletin*, 30 (8), 1018-1034.
- Matthews, G., & Zeidner, M. (2000). Emotional intelligence, adaption to stressful encounters, and health outcomes. In R. Bar-On, & J. Parker (Eds.). *The handbook of emotional intelligence: theory, development, assessment, and*

- application at homes, school and in the workplace* (pp.459-489).. San Francisco: Jossey-Bass.
- Mavroveli, S., Petrides, K.V., Rieffe, C., (2007). Trait emotional intelligence, psychological well-being and peer-rated social competence in adolescence. *British Journal of Psychology*, 25(2), 263-275.
- Mayer, J.D., Roberts, R.D., & Barsade, S.G. (2008). Human abilities: emotional intelligence. *Annual Review of Psychology*, 59, 507-536.
- Mayer, J.D., & Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence*, 17, 433-442.
- McEwan, B. 2002. *The end of stress as we know it*. Washington, D.C.: Joseph Henry Press.
- Menninger, K. (1963). *The vital balance: The life process in mental health and illness*. New York: Viking.
- Michell, J. (2000). Normal science, pathological science and psychometrics. *Theory Psychology*, 10 (5). 639-637.
- Mikolajczak, M., Roy, E., Luminet, O., Fillee, C., & Timary, P. (2007) The moderating impact of emotional intelligence on free cortisol responses to stress. *Psychoneuroendocrinology*, 32, 1000-1012.
- Moyle, P., & Parkes, K. (1999). The effects of transition stress: a relocation study. *Journal of Organizational Behavior*, 20, 625-646.
- Nikolaou, I., & Tsaousis, I. (2002). Emotional intelligence in the workplace: exploring its effects on occupational stress and organizational commitment. *The International Journal of Organizational Analysis*, 10(4), 327-342.
- Pallant, J. (2003). *SPSS a survival guide*. NSW, Australia: Allen & Unwin.
- Palmer, B., Walls, M., Burgess, Z., & Stough, C. (2000). Emotional Intelligence and effective leadership. *Leadership and Organization Development Journal*, 22(1), 5-10.
- Patterson, G.T. (2003). Examining the effects of coping and social support on work and life stress among police officers. *Journal of Criminal Justice*, 31, 215-226.

- Pau, A., Rowland, M.L., Naidoo, S., AbdulKadir, R., Makrynika, E., Moraru, R., et al. (2007). Emotional intelligence and perceived stress in dental undergraduates: A multinational survey. *Journal of Dental Education*, 71(2), 197-204.
- Payne, W.L. (1986). A study of emotion: developing emotional intelligence; self integration; relating to fear, pain and desire. *Dissertation Abstracts International*, 47, p. 203A. (University microfilms No. AAC 8605928).
- Pekrun, R., & Frese, M. (1992). Emotions in work and achievement. *International Review of Industrial and Organizational Psychology*, 7, 153-200.
- Petrides, K.V., Furnham, A., Mavroveli, S. (2007). Trait emotional intelligence: moving forward in the field of EI. In G. Matthews, M. Zeidner, & R. Roberts. (Eds.), *The science of emotional intelligence: Knowns and unknowns* (pp. 151-166). New York: Oxford University Press.
- Petrides, K.V., Pita, R., & Kokkinaki, F. (2007b). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273-289.
- Pfeiffer, S.L. (2001). Emotional intelligence: Psychometric status and developmental characteristics, *Roepers Review*, 21, 138-145.
- Salanova, M., Grau, R., Martinez, I. (2006). Job demands and coping behaviour: the moderating role of professional self-efficacy. *Psychology in Spain*, 10(1), 1-7.
- Salovey, P. & Mayer, J.D. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9(3), 185-211.
- Sankaran, R. (2007, Mar). Stress has clear impact. *Thought Leaders*, 24.
- Sheilds, M., & Ward, M. (2001). Improving nurse retention in the National Health Service in England: the impact of job satisfaction on intentions to quit. *Journal of Health Economics*, 20(5), 677-701.
- Slaski, M., & Cartwright, S. (2002). Health, performance, and emotional intelligence: an exploratory study of retail managers. *Stress and Health*, 18, 63-68.

- Sinha, B.K., & Watson, D.C. (2007). Stress, Coping and Psychological Illness: A cross-cultural study. *International Journal of Stress Management*, 14(4), 386-397.
- Smith, A. (2000). The scale of perceived occupational stress. *Occupational Medicine*, 50(5), 294-298.
- Snow, D.L., Swan, S.C., Raghavan, C., Connell, C.M., & Klein, I. (2003). The relationship of work stressors, coping and social support to psychological symptoms among young female secretarial employees. *Work and Stress*, 17(3), 241-263.
- Tattersall, A.J., Bennett, P., & Pugh, S. (1999). Stress and coping in hospital doctors. *Stress Medicine*, 15, 109-113.
- Thorndike, E.L. (1920). Intelligence and its uses. *Harper's Magazine*, 140, 227-235.
- Tsaousis, I., & Nikolaou, I. (2005). Exploring the relationship of emotional intelligence with physical and psychological health functioning. *Stress and Health*, 21, 77-86.
- Tyler, P.A. & Ellison, R.N. (1994). Sources of stress and psychological well-being in high-dependency nursing. *Journal of Advanced Nursing*, 19, 469-476.
- Vaillant, G.E. (1977). *Adaption to life*. Boston: Little Brown.
- Violanti, J.M. (2001). Coping strategies among police recruits in a high-stress training environment. *Journal of Social Psychology*, 132(6), 717-729.
- Welbourne, J.L., Eggerth, D., Hartley, T.A., Andrew, M.E., & Sanchez, F. (2007). Coping strategies in the workplace: Relationships with attributional style and job satisfaction. *Journal of Vocational Behaviour*, 70, 312-325.
- Wejnert, C., & Heckathorn, D.D. (2008). Web-Based Network Sampling: Efficiency and Efficacy of Respondent-Driven Sampling for Online Research. *Sociological Methods and Research*, 37(1), 105-134.
- Williams, S., & Cooper, C.L. (1998). Measuring occupational stress: development of the pressure management indicator. *Journal of Occupational Health Psychology*, 3(4), 306-321.
- Zeidner, M., & Kaluda, I. (2008). Romantic Love: What's emotional intelligence got to do with it? *Personality and Individual Differences*, 44, 1684-1695.

Zeidner, M., Matthews, G., & Roberts, R. (2004). Emotional intelligence in the workplace: a critical review. *Applied Psychology: an international review*, 45(3), 371-399.

8. Appendices

Appendix A: Introductory Email

Hi,

My name is Amy-Kate Scott and I am interested in how emotional intelligence is related to coping and wellbeing in the workplace. I am currently studying towards an MSc in industrial/organisational psychology through Massey University, and my research is focused on wellbeing at work and will look at how resilience and coping strategies can help us to manage stressors better.

Participation in this research is voluntary. All individuals that complete the questionnaires will receive a free comprehensive individual Genos Emotional Intelligence (EI) Self Assessment report usually worth \$295. I will be providing a summary of the results via email around mid 2008. If you have any questions about this study please let me know.

All responses are confidential and your answers will not be linked back to you in anyway. Your organisation will not have access to any individual responses. Only summary findings will be included in any reporting. In addition, I will not have access to your personal emotional intelligence report.

If you would like to take part in the study, please click below (or cut and paste link into your browser).

http://www.surveymonkey.com/s.aspx?sm=PfgEco_2bYuRvYxVFGjjH2aA_3d_3d

This will take you to the beginning of the first questionnaire. In order to receive your personal Emotional Intelligence report it is essential that you complete both questionnaires in one sitting. It should take between 25-45 minutes to complete. If you would not like to participate please ignore this email. Completion and submission of the questionnaires implies that you consent to take part in the study.

Once you have completed both questionnaires, your Emotional Intelligence report will be sent to your email address within 48 hours (you may need to also check your junk mail folder). If upon receiving your Emotional Intelligence report you have any queries or concerns please contact me on the details provided below. I am accredited as a Genos EI coach and will be happy to provide feedback. I will have no way to know who has taken part in the research unless you contact me directly. Neither will I have access to your personal reports.

All emotional intelligence data will be sent directly to Genos Pty and then sent to myself excluding your email address. Anonymous data pertaining to the PMI only will be sent to Resource Systems (provider of the PMI). The reason for providing Genos and Resource Systems with the anonymous data is to enable the development of anonymous New Zealand comparison groups.

I thoroughly appreciate your support,

Amy-Kate
Email: amykatescott@gmail.com.

Appendix B: Information Sheet

This research aims to explain how emotional intelligence is related to psychological outcomes in terms of wellbeing, to help us better understand what builds resilience and coping in individuals. Data is being collected to measure pressure and stress as well as how you understand and reason with emotions.

So that information from the two questionnaires can be linked, you will be asked to provide a name. It is up to you whether you put your actual name on the surveys. However, if you do chose to use an identifying sequence rather than your name you **MUST** use the same sequence on the both of the questionnaires. To avoid confusion in matching results your identifier must include both letters and numbers. This identifying word will also appear on your Genos EI report. If you do not wish to use your actual name, you could use the name of a favourite pet for example followed by your street address (e.g. kitty21). In order to receive your Genos EI report you will need to provide a valid email address and your gender. All other demographic information is voluntary.

As the surveys are psychometric all questions must be answered, even those which do not seem to apply to you.

If you would like to take part, please continue on to the next page. It will take about 25-40 minutes to complete. Once you have completed the first survey you will be automatically taken to the opening page of the second questionnaire. Both questionnaires do need to be completed in one sitting.

If you have any questions or would like to know more about the research, please do not hesitate to contact me.

Thank you very much for your help and support.

Yours sincerely,

Amy-Kate Scott
Phone: (021) 829 477
Email: amykatescott@gmail.com

This project has been reviewed and approved by the Massey University Human Ethics Committee: Northern, Application 07/064. If you have any concerns about the conduct of this research, please contact Dr Mark Henrickson.