Is Emotional Intelligence a mediator or moderator of the stress process?

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Abstract

The aim of the present study was to explore the Lazarus and Folkman (1999) model of stress within a workplace setting, with a particular focus on whether coping strategies mediate the impact of primary appraisal on the affective responses. A secondary aim was to determine whether Emotional Intelligence (EI), which includes emotional self awareness, emotional management and the ability to understand other's emotions, has a mediator or moderator effect on the relationship between the primary and secondary appraisal processes (Lazarus, 1999).

The research included 157 professional staff, including salaried staff, line managers, senior managers, managing directors and chief executive officers. The findings indicated that task focused coping and avoidance served as partial mediators between primary appraisal and affective outcomes. There was no support for EI as a moderator and no mediation effect was found for emotional self awareness or the ability to understand others' emotions. However, emotional management had a partial mediation affect on the appraisal and coping process.

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CHAPTER ONE

Occupational Stress

Occupational stress is a growing problem which results in substantial costs to employees and organisations world wide (Hart & Cooper, 2000). Occupational stress is defined by the New Zealand Occupational Safety and Health Service (OSH) as "an interaction between the person and their work environment, and is the awareness of not being able to cope with the demands of one's environment, which results in a negative emotional response" (OSH, 2003, p.6). In recent years there have been considerable changes in the nature of work (Oechsler, 2000). Jobs offer less security, there is increased contract work, mobility between jobs, and number of role changes, due to market competitiveness and technological advances. These changes have increased the demands placed on employees, which in turn have increased the levels of occupational stress (Oechsler, 2000).

Organisational demands influence individual stress levels and organisational performance; therefore it is important to understand the process of stress so that the appropriate interventions can be applied (Hart & Cooper, 2000). The transactional model of stress suggests that the degree of coping and control available to an individual determine the stressfulness of an event and the psychological and physiological reactions to it (Lovallo, 2005). Current research needs to investigate how the psychological and physiological effects of workplace demands are influenced by the appraisal of stressful situations and the associated use of coping strategies (Lovallo, 2005). This chapter will outline the importance of work related stress in terms of the associated individual, organisational and legal costs.

1.1 The costs of occupational stress

The negative effects of occupational stress for organisations are well established (Clarke & Cooper, 2000). For example, a report published by the National Institute for Occupational Safety and Health (1999) in the United States found that between 26-40% of all surveyed workers found their work to be very stressful (Sonnentag & Frese, 2003). Estimates from the United States and the United Kingdom suggest that half of all days lost from work are a result of occupational stress (Sonnentag & Frese, 2003). Organisations suffer because of lost working days, decreases in employee

performance, increases in absenteeism and turnover, burnout, low productivity and legal costs and hidden costs to the organisation, which may include training and replacing staff and increased workloads for the colleagues of absent or stressed employees (Hill, 2003).

Not only are there short-term outcomes of stress on organisations but research to date indicates that there are lagged effects on employees as a result of occupational stress (Hill, 2003). A meta-analysis of longitudinal studies using the stressor-strain approach found that stressors were associated with long term effects such as depression, burnout and fatigue as well as short-term impacts in terms of distress, anxiety, depressive symptoms and exhaustion (Hoboken, 2003). Physical symptoms included somatic health complaints such as cardiovascular disease and other illnesses (Hoboken, 2003). Current understanding of the nature and effects of occupational stress suggest that short term and long term effects pose a significant hazard to employee health and also act as sources of business cost (Clarke & Cooper, 2000).

1.2 The legal implications of occupational stress

The threat of litigation, as well as reduced organisational performance, has encouraged some organisations to take stress management more seriously. Organisations are realising the need to be aware of the demands that people experience at work and the need to take all reasonable measures to alleviate them (Broadbridge, 2002). Without taking such reasonable measures, employers may face an increase in financial costs associated with personal injury claims by employees who suffer from the adverse effects of workplace stress (Clarke & Cooper, 2000).

In the past, the focus of occupational health and safety legislation has predominantly been to reduce physical hazards associated with work, such as chemicals, asbestos and hazardous equipment, but the focus is shifting to the risks associated with occupational stress (Hoboken, 2003). Increasingly organisations are realising that they need to assess the risk posed by workplace stress and take adequate measures to control that risk to avoid business loss and to ensure a healthy workforce (Clarke & Cooper, 2000).

The Health and Safety in Employment Act in New Zealand aims to promote the health and safety of employees at work and of other people in or around places of work. To achieve this, it requires employers and employees to take steps to ensure their own health and safety and that of others (Department of Labor, 2002). Stress is recognized in the Act in two ways: stress may be the result of hazards in the workplace, or stress may cause hazards in the workplace (Hill, 2003). Employers must have systems in place to monitor the work environment and to ensure that hazards in that environment do not cause employees either physical or mental harm (OSH, 2002). The Act defines hazards and harm in a comprehensive way, so that all hazards and harm are covered. This includes harm caused by work related stress, as well as hazardous behavior caused by certain temporary conditions such as mental fatigue or traumatic shock. Employers need to become increasingly aware of how individuals experience stress and factors which may influence levels of workplace stress (Hill, 2003).

Although there is extensive research into the incidence of stress in various industrial settings, research into stress within retail or professional services is limited (Broadbridge, 2002). Interestingly however, research by Cooper (1988) ranked 100 jobs according to their level of stress and found retail and managerial jobs to be classified as "very stressful". Professional service occupations may be more stressful than other occupations because they are more frequently exposed to technological, structural or role changes (Broadbridge, 2002).

The individual, organisational and legal consequences of stress have resulted in increasing research into workplace stress (Clarke & Cooper, 2000). According to Newton (1998), occupational stress is a legitimate and credible area of study and future research needs to consider the process through which individuals experience stress and the associated positive and negative outcomes (Clarke & Cooper, 2000). The individual, organisational and legal costs associated with "very stressful" occupations clearly warrant further empirical investigation.

1.3 The potential for positive outcomes of stress

While the costs of stress are well established, to ensure a balanced approach to research it is important to consider the potential positive outcomes as well. This section will establish how stress may serve as an adaptive process, the current research into the positive outcomes associated with stress, and the requirements for future research.

1.3.1 Stress as an adaptive process?

While occupational stress results in a considerable cost to individual and organisational performance, stress is an inherently adaptive process. Environments are constantly changing and require that individuals continuously adjust and adapt (Nelson & Cooper, 2005). How a demand is perceived may vary, as some may appear to overextend an individual's coping ability while others may appear controllable and easy to adopt. Most individuals will try to adapt to demands through a range of psychological, behavioral and physiological coping strategies (Nelson & Cooper, 2005).

Research indicates that individuals require a certain amount of stress in their environment to improve performance (LeFevre, Matheny & Kolt, 2003). While stress may have consequences for individuals at both the psychological and physiological level, some stressors are a normal part of everyday functioning and potentially even beneficial (Nelson & Cooper, 2005). However, future research needs to examine and establish the benefits of stress for individual functioning within workplace settings.

1.3.2 Research into positive affective outcomes

Not all outcomes of stress are negative. Stressful events are inevitable and may lead to positive or negative emotions: positive emotions may promote healthy perceptions and physical wellbeing (Broadbridge, 2002). It is the individual's own ability to cope with and adapt to the various demands of life which determines whether the outcome experienced will be positive or negative (Broadbridge, 2002).

There is increasing recognition that demands encountered at work can give rise to positive outcomes. Simmons and Nelson (2001) identified the negative outcomes of

work related demands as distress. The positive outcome of taxing work demands they called eustress and defined it as "the extent to which a situation or event is seen to be beneficial, positive or enhancing to an individual's wellbeing" (Broadbridge, p.121, 2002). Their research used hope, positive affect and meaningfulness as indicators of eustress, with negative affect as an indicator of distress. The study hypothesised that due to job demands nurses would experience significant levels of eustress and distress and that each stress response would have a separate effect on perceptions of health and performance. The findings indicated that within a demanding work environment, nurses were actively engaged in their work and reported high levels of eustress, which had a positive effect on their perceptions of their health. Hope had the most positive relationship with perceptions of health. Healthy and productive nurses inspired positive expectations and raised the level of hope in their patient and this was found to be beneficial to patients' health outcomes (Nelson & Simmons, 2001).

When confronted by extremely demanding occupational stressors, workers can still maintain engagement and a positive outlook (Nelson & Cooper, 2005). Barnett (1992) found that working mothers who perceived their work as challenging reported low levels of distress, despite dissatisfaction with their children. This research assessed both positive and negative affective outcomes, which provided greater clarification of the research findings.

Stress and health researchers in various fields are calling for a more positive approach to studying organisational stress (Nelson & Cooper, 2005). Individual and organisational outcomes of stress are important research topics but an equal emphasis is required on understanding the coping process, adaptive responses and associated positive affective outcomes. Future research needs to extend and shape the concept of positive outcomes and describe how these are part of the stress process (Nelson & Simmons, 2001). The following chapter will outline different models and approaches to conceptualising and defining the stress process.

CHAPTER TWO

Different theoretical approaches to occupational stress

There are numerous approaches to conceptualising and defining stress. The majority of research recognizes two broad approaches: the stimulus-response model, and the transactional model (Cassidy, 1999). This chapter will outline these approaches and related theoretical frameworks which can be applied within an occupational setting.

2.1 The stimulus-response approach

One of the main approaches to stress is the stressor-strain or stimulus-response model. This approach maintains that stress occurs as a result of stressors within an environment (Cassidy, 1999). These include external demands placed upon a person such as a high workload which result in strain. Strain is defined as a short or long-term negative psychological or physical reaction to stressors (Sonnentag & Frese, 2003).

Research into this model has primarily focused on identifying the sources of stress or stressors in the external world and their relationship to an individual's experience of strain (Cassidy, 1999). Strain is measured by an observation of symptoms such as irritability, lack of energy, sleeplessness and headaches (Sonnentag & Frese, 2003). This approach measures the behavioural, emotional and physical consequences of demands, in an attempt to control or reduce them (Cassidy, 1999). There has been extensive occupational research to date using the stressor-strain approach, which has resulted in increased understanding of employees' psychological and physical health outcomes (Cassidy, 1999).

An example of the stressor-strain approach is French's (1982) Person-Environment Fit Theory which maintains that a misfit between a person and their environment will result in psychological, physiological and behavioural strain (Hart & Cooper, 2000). This theory places emphasis on the link between stressors and strains with minimal attention to an individual's psychological response to their environment (Lazarus & Folkman, 1984). This theory has been widely investigated and discussed in occupational stress literature.

Another stressor-strain approach is the Dynamic Equilibrium Theory which maintains that stress results from a broad system of variables that include personality and environmental characteristics, coping processes and various indices of psychological wellbeing (Hart & Cooper, 2000). Stress occurs when a state of disequilibrium exists between the stressors present in an individual's environment and their ability to cope with the stressors. When this state of disequilibrium occurs it may result in a decrease in individuals' normal levels of psychological wellbeing (Cooper, 1999). To date, this approach is used to conceptualize general wellbeing and is part of understanding general as well as occupational health (Cooper, 1999).

Future research into occupational stress needs to utilise theories that provide an integrated framework. Different stressor-strain theories have been used to aid research into the stress process; these approaches treat the different components of the stress process as separate or detachable entities. However, stress does not reside solely in the person or the environment but is relational and involves an interaction between the two (Dewe & Trenberth, 2004). Other approaches need to be considered, specifically those that provide an integrated explanation for how the stress process functions at an individual or group level (Dewe, 1997).

2.2 The transactional approach

A number of transactional theories have been developed to provide a more coherent approach to understanding stress (Hart & Cooper, 2000). Transactional theories are also known as process theories of stress, because they place an emphasis on identifying the psychological processes that link a person to their environment (Dewe & Trenberth, 2004). Lazarus, (1999, p.3) states that "in order to understand and to think of stress, researchers need to think in process terms so that their research is guided by ideas about how things work". To date, researchers have accepted the view that stress is a result of the relationship between a person and the demands in their environment (Matthews, 2001).

Transactional theories offer an integrated approach to understanding an individual's experience of stress which, is defined as "a relationship between the person and the

environment that is appraised as taxing or exceeding the individual's resources and endangering their wellbeing" (Lazarus & Folkman, 1999, p.24). The transactional approach is centered on the actions an individual takes to deal with external demands, as well as the evaluation or appraisal of the demand that influences outcomes (Matthews, 2001). This approach focuses on the psychological processes that link an individual to their environment, give meaning to the relationship and structure to the nature of the stress process. Transactional theories transcend traditional approaches which separate the individual and environmental variables (Dewe & Trenberth, 2004).

The transactional theory attempts to encapsulate a holistic, person-in-context perspective. It provides an intricate overview of stress as a set of interacting variables. This framework is more integrated and reflective of the actual stress experience of individuals than the stimulus-response model (Cassidy, 1999). Within the transactional perspective there are various theories and approaches to conceptualizing stress. One such approach is the Cognitive-Relational Theory of stress developed by Lazarus & Folkman (1986). This theory maintains that psychological stress is the difference between the environmental demands that threaten or challenge an individual and the individual's appraisal of the resources available to adapt and cope with it. This theory emphasizes the person-environment relationship and the significance of the relationship to the individual (Lazarus, 1999).

The Cognitive-Relational approach maintains that stress is an adaptive process as individuals try to manage demands. The continual interplay between appraisal and coping is an individual's attempt to adapt to and manage their environmental demands. This is done to maintain an optimal level of physical, psychological and social well being (Hart & Cooper, 2000). The outcomes of the stress process affect individual adaptation. These may include positive and negative affect, psychological wellbeing, physical health and social functioning (Lazarus, 1993).

Appraisal and coping mediate the relationship between a person, their environment and the resulting outcomes (Lazarus, 1999). Appraisal is a process through which individuals evaluate their environment to determine whether the conditions will have significant outcomes for their well-being (Lazarus, 1993). If the situation is appraised as significant there will be a secondary appraisal process whereby an individual will

engage in some form of coping response (Lazarus & Folkman 1999). The type of coping response used may be adaptive or maladaptive to individual wellbeing (Lazarus, 1993). Appraisal and coping mediate the relationship between demands and affective outcomes (Lazarus & Folkman 1999).

Lazarus (1999) maintains that researchers need to think in terms of a process when investigating stress and emotion at work; this will ensure that their research is guided by ideas on the way things work. The Cognitive-Relational theory provides a process framework for empirically researching stress and investigating the mediating relationship between appraisals, coping and affective outcomes. It also provides an integrated approach for identifying individual difference variables which may affect the stress process (Lazarus, 1993). The Cognitive-Relational theory provides an established basis from which future research can investigate occupational stress.

CHAPTER THREE

A Transactional Model of Stress

3.1 Background

The present research will test a model of occupational stress. Figure 1 illustrates the transactional stress process based on the Cognitive Relational theory (Lazarus & Folkman, 1986). Demands that are appraised as being potentially threatening or challenging to individuals (primary appraisal) will result in the selection of either adaptive or maladaptive coping strategies (secondary appraisal) (Hart & Cooper, 2000). In this way both primary and secondary appraisal processes are essentially dependant on one another (Dewe, 1997).

Appraisals are based on many subtle cues in the environment. These are learned from previous experience and are influenced by individual difference variables such as individual emotional resources and situational factors. Individual difference variables can influence the nature and strength of a perceived demand, available coping resources and affective responses (Matthews, Zeider & Roberts, 2002). An individual's choice among adaptive or maladaptive coping strategies will result in the experience of an affective response (Troup & Dewe, 2002). The affective response is what influences an individual's long-term health and wellbeing (Troup & Dewe, 2002). This chapter will outline each of the variables in the model and their relationships within the stress process.

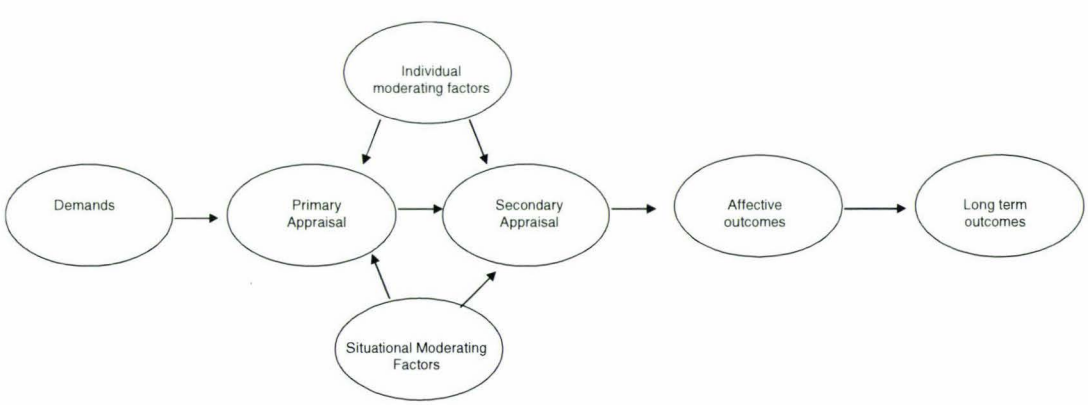

Figure 1: A Theoretical model of the stress process (adapted from Lazarus and Folkman, 1986).

3.2 Demands

Demands consist of implicit or explicit pressures from the environment or situations that individuals are required to deal with (Lazarus, 1999). There are multiple demands within the working environment such as fulfilling one's job requirements or supporting one's family, all of which can become sources of psychological stress (Lazarus, 1999). The focus of the present research was on occupational stress and so the following discussion will focus on demands arising from work.

Researchers have attempted to identify and categorise major sources of stress in the work environment (Cassidy, 1999). Most commonly used is the classification developed by Cooper (1988), who suggests that sources of stress can be encompassed within a six factor model which includes factors intrinsic to the job, role factors, relationships at work, career development, organisational factors and the interface between home and work. This six factor model provides an empirically established approach for identifying and classifying work-related demands (Jex, 1998).

3.3 Appraisal

Lazarus and Folkman (1984) brought the concept of cognitive appraisal to prominence in stress research (Cassidy, 1999). Cognitive appraisal is the constant evaluation of the environment by an individual, specifically in terms of the significance for their wellbeing (Lazarus & Folkman, 1987). Cognitive appraisal consists of two factors: an individual's interpretation about what is at stake and the assessment about what can be done to alleviate, improve, prevent or overcome it. Respectively, these are primary and secondary cognitive appraisal processes.

The concept of appraisal is central to the transactional model of stress which investigates stress as the relationship between a person and their work environment, through the meanings that individuals give to this relationship (Troup & Dewe, 2002). Appraisal determines how individuals cope with demands and the qualities and intensities of their emotional experience (Lazarus & Folkman, 1987). While an individual's appraisal is unique to them, patterns are likely to emerge in the way that people appraise their work demands and work characteristics. These underlying patterns are important for future stress research as they illustrate why and how

workplace demands challenge and threaten an individual's wellbeing (Auerbach & Gramling, 1998).

The Cognitive Relational theory of stress maintains that cognitive appraisal is the meaning that an individual gives to any encounter. Any environmental event can be a stressor to the extent that an individual appraises it as one (Cassidy, 1999). Therefore personal and environmental factors combine to jointly influence an individual's appraisal of a stressful event (Lazarus & Folkman, 1984).

The current research investigated the mediating role of appraisal on the stress process. Baron and Kenny (1986) state that a variable may function as a mediator to the extent that it accounts for the relationship between the predictor and the criterion. Appraisal and coping explain some of the relationship between the environmental demands and the individual response, making coping and appraisal mediating variables in the transactional stress model (Lazarus, 1993).

3.4 Primary appraisal

Primary appraisal involves a process of evaluating a situation to determine whether it is perceived to be stressful. A situation can be appraised as either threatening or challenging. A challenge appraisal concentrates on the anticipation of success and positive outcomes and confidence in one's ability and the resources available to cope with the demand (Skinner & Brewer, 2002). A threat appraisal focuses on the possible harm posed by the lack of resources available to allow for effective coping with the demand (Skinner & Brewer, 2002).

The more confident an individual is in their capacity to overcome obstacles, the more likely they are to be challenged rather than threatened (Lazarus, 1993). However, situations vary greatly in whether they result in a threat or challenge appraisal. Some situations may be too demanding to lead to a challenge apprisal as an individual does not perceive that they have the resources to cope effectively (Lazarus, 1999). It is a combination of environmental circumstances and personal variables that determine whether a demand will be appraised as a threat or challenge (Lazarus, 1999).

Challenge appraisals reflect the perception that coping resources are available to overcome the stressful situation and achieve a desirable outcome (Anshel, 2001). Employees dealing successfully with stressful events such as role conflict, responsibility or relationships with co workers, are more likely to experience positive than negative emotions associated with overcoming these difficulties (Lazarus, 1993). Challenge appraisals are more likely to be associated with positive than negative emotions such as excitement, exhilaration and eagerness. This may be because individuals experience a sense of control over the situation and increase or maintain their levels of confidence (Anshel, 2001). The current research proposes that challenge appraisals will have a positive relationship with positive affective outcomes.

Conversely, threat appraisals reflect a state of anxiety, as there is an expectation of possible future harm, since an individual perceives that the stressful situation exceeds their resources for coping (Lazarus, 1993). These appraisals are often accompanied by negative self statements such as "I worry" or "what if" (Anshel, 2001). At work, potentially threatening situations may include situations outside an individual's control or coping ability, such as an unmanageable workload or an organisational restructure. Individuals who experience stressful encounters as potentially threatening to their wellbeing are likely to anticipate failure (Skinner & Brewer, 2002). The appraisal of a situation as threatening has also been linked to the long-term experience of distress.

Hypothesis 1: Challenge appraisals will be positively associated with positive affect and threat appraisals will be positively associated with negative affect.

It may be possible for threat and challenge appraisals to occur simultaneously, however current research indicates that one or the other usually dominates (Lazarus, 1999). There may be situations when an individual may be more threatened than challenged and in other situations the reverse may be true (Lazarus, 1999).

Hypothesis 2: Threat and challenge appraisals will be negatively associated with each other.

3.5 Secondary appraisal

Cognitive appraisal is also relevant to how individuals cope with occupational demands. The manner in which an individual interprets a work demand will influence the type of coping strategy used. Secondary appraisal involves an evaluation of the resources and coping options that might be useful for minimizing the stress of the threatening situation (Auerbach & Gramling, 1998). Secondary appraisal is therefore the choice of coping strategies available to deal with the demand, while coping involves implementing the choice.

Coping may be defined as "constantly changing cognitive and behavioural efforts to manage specific external and internal demands that are appraised as taxing or exceeding an individual's resources" (Lazarus & Folkman, 1999, p.110). This definition of coping acknowledges the need to emphasize the importance of what people actually do to cope or deal with a stressful situation, whether or not it is effective (Lazarus, 1993). Individuals may use different types of coping strategies to deal with stressful situations and to lower stress levels (Auerbach & Gramling, 1998). Coping is essentially a transactional process as individuals constantly appraise the meaning of situations, evaluate their coping options and engage in coping behavior (Lazarus, 1993).

Coping is a dynamic process. Stress and coping may be reciprocal: if coping is ineffective then an individual's level of stress is likely to increase, however if coping is effective then stress levels are likely to decrease (Lazarus & Folkman, 1984). Individuals are constantly dealing with multiple situations and their attention shifts as they reappraise the significance of events and assess how successfully they have dealt with a particular situation (Auerbach & Gramling, 1998). Cognitive reappraisals differ from appraisals in that they follow and modify an earlier appraisal (Lazarus & Folkman, 1984). The appraisal of a situation is influenced by an individual's knowledge of past events and satisfactory outcomes (Auerbach & Gramling, 1998). The shifts or changes in the person-environment relationship may be a result of changes in an individual's environment which are independent of their coping ability or from coping activities (Lazarus & Folkman, 1984). Either way, coping is best

described as a process, because coping is mediated by cognitive appraisals and reappraisals.

3.6 Different types of coping strategies

Various types of coping strategies have been identified. One widely used distinction is between task focused coping strategies and emotion focused coping strategies. Research by Lazarus and Folkman (1999) found that for 1332 stressful situations, individuals engaged in task focused and emotion focused coping strategies to deal with both external and internal demands. According to Lazarus and Folkman (1984), coping serves two main functions: managing or directing the problems causing distress and regulating emotional responses to the problem (Lazarus, 1999). In both cases the individual is attempting to control their stress level (Auerbach & Gramling, 1998). Folkman and Moskowitz (2003) maintain that these two classifications provide a useful framework for conceptualising different forms of coping discussed in the literature, with other conceptualisations of coping functions fitting easily into one of these two categories.

Task focused coping strategies may be defined as attempts to modify, avoid, or minimize the situation at hand (Auerbach & Gramling, 1998). Task focused coping strategies are similar to strategies used for problem solving as they are directed at defining a problem, generating alternative solutions, weighing the alternatives up in terms of their costs and benefits, choosing among these and then acting (Lazarus, 1993). Task focused coping strategies encompass on both the environment and the individual (Lazarus, 1999). Some strategies may be focused on changing resources, procedures and barriers whereas others may include changing the level of individual involvement or ego involvement (Lazarus, 1993). The types of task focused coping strategies used are dependant on the types of problems encountered.

Emotion focused coping strategies may be defined as attempts to moderate or eliminate unpleasant emotions (Hart & Cooper, 2000). Emotion focused strategies can be separated into avoidance strategies and those which involve social support. Social support reduces the emotional distress associated with a stressor (Lazarus, 1999). It involves constructive attempts to change the way a situation is interpreted, such as

discussing it with family or friends. Social support involves drawing upon the resources of others to cope effectively with a situation (Hagihara, 2003). In this way social support is adaptive, as it is a buffer between the stressful situations and associated affective outcomes.

Avoidance coping, also called repression, rejection and disengagement, consists of turning away from a stressor and ignoring, discounting or psychologically distancing oneself from it (Anshel, 2001). Avoidance strategies attempt to lessen emotional stress by avoiding or distancing from the situation. Avoidance forms of emotion focused coping such as drinking or venting do not change the meaning of the event. Theses strategies can be maladaptive if they increase distress and avoid the problem (Lazarus, 1999).

Task and emotion focused coping can be further defined by the extent to which they are adaptive or maladaptive to individual wellbeing. Matthews, Zeider and Roberts (2002) maintain that adaptive or functional coping is seen as a buffer as it absorbs the negative impact of the stressful event and protects the person against the immediate and damaging effects of stress. Task focused strategies are often viewed as more adaptive because they change the realities of the situation. Lazarus (1999) maintains that adaptive coping strategies can reduce stress reactions by actions that change the actual relationship (such as task focused coping) or by merely changing the meaning of that relationship (such as social support emotion focused coping). Emotion focused coping, such as social support or avoidance, is aimed at regulating the emotions tied to the situation, and while it may be less adaptive than some strategies, may be useful when a situation is outside a person's control (Lazarus, 1993). In this way task focused coping and emotion focused coping serve different and complementary adaptive functions for individuals trying to manage a stressful situation.

Several studies which compared different coping strategies found that problem-focused coping strategies are more adaptive or beneficial to wellbeing than some forms of emotion focused strategies such as avoidance, which tend to be maladaptive or harmful to wellbeing (Hart & Cooper, 2000). Research into occupational stress has found that poorer levels of mental health were associated with avoidant coping

methods than with task focused coping or social support (Rick & Guppy, 1994). Higher levels of job satisfaction were also associated with the use of task focused coping and social support, but not with avoidance. Some forms of emotion focused coping such as substance abuse, venting and avoidance, that in most situations are maladaptive. However, other forms such as social support may be useful in helping individuals manage their emotions (Lazarus, 1993). The type of coping strategies used may be maladaptive or adaptive depending upon the situation and the type of strategy and individual resources available to deal with it (Lazarus, 1999).

3.6.1 Challenge appraisal and task focused coping

The cognitive appraisals of events influence the type of coping strategy used (Anshel, 2001). Rick and Guppy (1994) conducted research into task focused coping, social support and avoidance coping strategies. They found that if a demand was seen to exceed the resources for coping, then avoidance strategies were more likely to be used, but if the demand was seen to be in line with the coping resources available, then task focused coping was more likely. The current perspective on coping strategies is that emotion focused strategies such as avoidance are effective when an encounter is appraised as unchangeable, while task focused strategies are effective when the situation is able to change (Lazarus, 1999).

Research into cognitive appraisals and coping strategies has found that situations which are appraised as challenging and controllable were related to engaging in behaviours to reduce the perceived demand (Anshel, 2001). The use of task focused coping is more probable for individuals who appraise a demand as being in-line with their coping resources (Anshel, 2001). Therefore challenge appraisals are likely to be related to the use of task focused coping.

If the individual appraises a demand as challenging, but they have minimal control over it, they are more likely to engage in coping behaviors which manage their feelings, such as social support (Lazarus, 1993). Social support is likely to reduce the stress associated with a situation that has been appraised as a challenge (Anshel, 2001). This research maintains that social support is more likely to be used as a coping strategy if a demand is appraised as a challenge.

Hypothesis 3: Challenge appraisals will be positively associated with task focused coping and social support

3.6.2 Threat appraisal and emotion focused coping relationship

Generally, emotion focused coping such as avoidance is more likely to occur when an individual perceives that a situation cannot be changed (Lazarus, 1999). Specifically, if a situation is anticipated to be threatening to the individual's wellbeing because they perceive they do not have the resources available to effectively deal with or alleviate it, they are likely to engage in avoidance coping (Lazarus, 1999). In situations where an individual cannot effectively manage the stressful situation, avoidance coping is used to help them deal with the distress emotions. Avoidance coping is more likely if a situation is appraised as stressful and threatening to an individual's wellbeing.

Hypothesis 4: Threat appraisals will be positively associated with avoidance coping strategies.

Any coping strategy can be effective to the extent to which it is able to effectively reduce the negative impacts of stress and improve wellbeing (Lazarus & Monat 1991). Task focused, social support and avoidance coping strategies will all result in some form of affective outcomes. The next section will consider in more detail the specific affective outcomes of different coping strategies.

3.7 Coping strategies and affective outcomes

According to LeFevre, Matheny and Kolt (2003), a complete model of occupational stress needs to incorporate affective outcomes. Many stress researchers have acknowledged the role of positive affect but few have incorporated it into their research (Nelson & Cooper, 2005). Positive affect results when the resources for coping are in relation to the demands present. This relationship results in effective performance at work (Nelson & Cooper, 2005). Negative affect results when demands exceed the capacity of the individual and results in poor performance (Nelson & Cooper, 2005). The present research will incorporate both positive and negative affect as outcome variables of the appraisal and coping process. This will ensure a more

holistic and realistic portrayal of an individual's stress experience and the organisation's ability to promote health and wellbeing (Nelson & Cooper, 2005).

3.7.1 Positive Affect and task focused or social support coping

Positive affect reflects the extent to which a person feels enthusiastic, active, and alert. An individual experiencing positive affect is characterized by high energy levels, full concentration, and pleasurable engagement (Watson, Clark & Tellegen, 1988). Furthermore, Simmons and Dakota, (2001) suggest from their research that individuals try to prolong and promote the experience of positive affect, as it is a positive response to the demands of their work environment (LeFevre, Matheny & Kolt, 2003).

Positive affect may occur within even extremely stressful situations because demands are mediated by individual appraisal and coping processes. Studies of hospital nurses and home health care nurses found that despite the demands of their work, the nurses reported a positive psychological state and remained actively engaged in their work. Intensive care nurses who were exposed to extremely stressful situations such as death and dying were even more hopeful and engaged in their work than their peers (LeFevre, Matheny & Kolt, 2003). These findings indicate that within even extremely stressful situations positive affect can be experienced and that this may be a result of the primary and secondary appraisal processes (LeFevre, Matheny & Kolt, 2003).

Individuals who appraise a demand as a challenge, anticipate success and positive outcomes and maintain confidence in their ability to obtain such goals are more likely to engage in coping strategies that deal with the task or provide social support (Simmons & Nelson, 2001). Accordingly, these individuals are more likely to experience positive feelings associated with the positive outcomes of dealing with the stressful demand (Skinner & Brewer, 2002). The current research proposes that task focused and social support coping styles will correlate with positive affect.

Hypothesis 5: Task focused coping and social support will be positively associated with positive affect

3.7.2 Negative affect and avoidance coping

Negative affect is often characterized by an individual's experience of distress and disengagement and can include a variety of emotions such as anger, contempt, disgust, fear and guilt (Watson, Clarke & Tellegan, 1988). Individuals who appraise a situation as threatening tend to focus on possible harm to their self esteem and social identity posed by the disapproval and negative evaluation of others, and they may negatively evaluate their resources or ability to effectively cope (Skinner & Brewer, 2002). Such appraisals are more likely to result in maladaptive forms of coping such as avoidance.

LeFevre, Matheny and Kolt, (2003) maintain that distress occurs as a result of too many or too few demands. Avoidance coping strategies do not deal with the problem, which results in the continual existence or rise of demands and continual lack of perceived effective coping resources to deal with the situation, resulting in negative emotions or distress (Lazarus, 1999). This research proposes that avoidance coping strategies will correlate with negative affect.

Hypothesis 6: Avoidance will be positively associated with negative affect.

3.8 Coping strategies as mediators of the primary appraisal and affective outcome relationship

According to transactional models of stress, cognitive appraisal mediates the relationship between demands and outcomes (Carpenter, 1992). For example, an employee who makes an error at work may appraise the stressor as threatening to self esteem, while another employee experiencing the same demand may appraise it as a challenging opportunity to learn. Threat and challenge are both appraisals occurring within the stress process. For both appraisals something is at stake: other forms of appraisal, such as irrelevant or benign, are possible but not considered to be part of the stress process (Carpenter, 1992). After a situation is appraised as stressful, the coping processes then work to manage the troubled person-environment relationship. These processes influence subsequent appraisals and the type of affective outcome.

Research by Ben-Zur (2005) found that the coping strategy influenced the relationship between the stressful situation and related affective outcome, distress or eustress.

Emotion focused coping mediated the demand-distress relationship and task focused coping influenced the demand-eustress relationship. This indicates that the type of coping strategy used will mediate the relationship between stress and affective outcomes.

The present research proposes that the type of coping strategy used will mediate the primary appraisal and affective outcome relationship, as illustrated in Figure 2 below.
Hypothesis 7: Task focused coping will mediate the relationship between challenge appraisal and positive affect.
Hypothesis 8: Social support will mediate the relationship between challenge appraisal and positive affect.
Hypothesis 9: Avoidance will mediate the relationship between threat appraisal and negative affect.

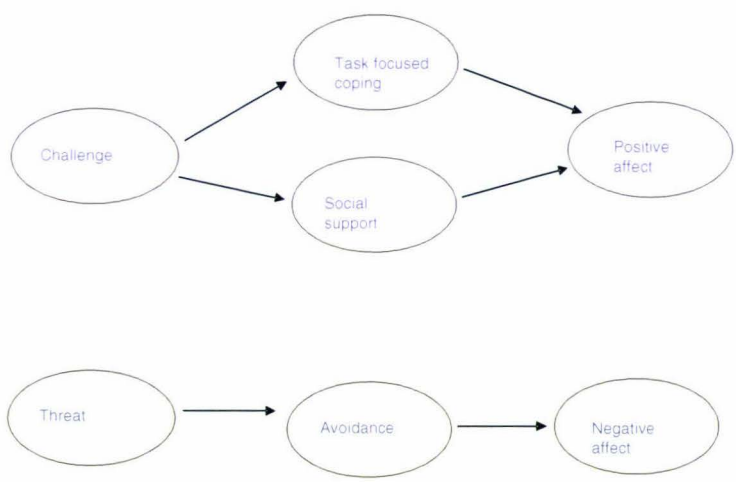

Figure 2: Hypothesised relationships in a transactional approach to occupational stress

This research brings together appraisal, coping and affect to provide a coherent framework for the stress process.

3. 9 Long term outcomes of the stress process

The transactional model of stress is useful for understanding the long term effects of occupational stress on health, morale, somatic and social functioning. Individuals will interpret the same event in different ways which will have consequences for their wellbeing (Lovallo, 2005).

Different types of coping are linked to long term outcomes associated with the experience of stress. Long term outcomes may include functioning in work and social living, morale or life satisfaction and health (Lovallo, 2005). Coping can affect stress reactions, the use of injurious substances and health related behaviour. Research needs to provide a more complete analysis by "investigating the nature of these causal systems and potential effects on the long-term outcomes of stress" (Morano, p.117, 2003). Future longitudinal research is needed to investigate the relationship between long-term outcomes associated with the appraisal and coping process. However, this is outside the scope of the present research.

The present research investigated a transactional approach to occupational stress and relationships between appraisals, coping and affective outcomes. These relationships are affected by individual and situational factors, and so the research will include an investigation of individual differences in Emotional Intelligence (EI) and how they may moderate the relationships between the variables in the model.

CHAPTER FOUR

Emotional Intelligence as a moderator or mediator of the stress process

4.1 Introduction

The Cognitive Relational model includes individual and environmental variables that may affect primary appraisal and coping processes. Individual difference variables may include mediating or moderating factors that could account for variance within the relationships or affect the direction or strength of the relationships within the model (Baron and Kenny, 1986). The exact nature of EI within the stress process has not yet been clearly defined or researched (Cassidy, 1999). Within the stress process, EI may function as mediating or moderating individual difference variable (Gardner & Stough, 2003). Future research into workplace stress needs to assess the nature of EI as an individual difference variable in the stress process (Lazarus, 1993).

The present research will measure individual differences in EI, or the ability to understand one's own emotions, to manage one's emotions and to understand the emotions of others at work. A mediator variable is one which "accounts for the relation between the predictor and the criterion" (Baron & Kenny, p. 117, 1986). A moderator variable may be described as "a variable which affects the relationship between two variables so that the nature of the impact of the predictor on the criterion varies according to the level of value of the moderator" (Morano, p.76, 2003). The present research will investigate whether EI functions as a mediator or moderator on the appraisal and coping processes. This chapter will provide background into the development, importance and effects of EI on occupational stress.

4.2 Intelligence versus Emotional Intelligence

There are many definitions and conceptualizations of intelligence. Numerous forms of intelligence have been explored, such as emotional, social and even musical intelligences (Brody, 1992). Through the examination of the different theories of intelligence it becomes evident that these theories differ in their approaches, testability, intricacy and understanding of intelligence, and each theory contributes to

broadening the field and understanding of intelligence. This chapter will outline how EI developed out of traditional approaches to measuring intelligence.

EI is often understood as an individual's ability to intelligently use emotions within daily life. It a term which is used to describe an individual's level of ability to appraise, regulate and utilize their emotions effectively on a day-to-day basis (Roberts, Zeidner, & Matthews, 2001). Currently there is a lot of interest, research and debate into EI (Mayer, Ciarrochi, & Forgas, 2001).

Traditionally the term intelligence has been used to describe an individual's complex mental abilities (Sternberg, Lautrey & Lubart, 2003). The layperson uses the term intelligence when referring to quickness of mind, academic success, occupational attainment or success in a particular field or endeavor (Corsini, 1994). The construct of intelligence largely developed out of psychologists' and scientists' needs, within the last two decades of the nineteenth century, to measure individual differences in mental functioning (Corsini, 1994). As a result of this there are now numerous standardised intelligence tests[1] available that assess aspects of intelligence and provide a measure of this in the form of IQ (Sternberg, Lautrey & Lubart, 2003).

The notion of an intelligence or IQ score has implications for individuals' lives such as university choice or occupational attainment (Matthews, Roberts & Zeidner, 2003). It is commonly believed that intelligence as assessed by IQ tests is imperfectly related to an individual's ability to function intelligently in every day life (Brody, 1992). Although "intelligence test scores correlate with both school grades and work performance, their correlation with school grades is substantially higher and they correlate better with job training performance than with actual work performance" (Sternberg, Lautrey, & Lubart, p.5, 2003). There have been several attempts to go beyond IQ and consider alternative forms of intelligence which may determine an individual's ability to function in everyday life (Brody, 1992).

[1] Intelligence tests may comprise a variety of tasks such as arithmetic skills, information, reasoning, manipulation of objects, vocabulary and memory. The objective is still to appraise the overall performance to obtain an estimate of an individual's intellectual functioning (Corsini, 1994).

One such attempt was the development of the Constructive Thinking Inventory[2] (Brody, 1992). This instrument rediscovered the notion that personality traits are related to social behavior. It was from this notion that Wagner and Sternberg (1990) developed a theory of tacit knowledge[3], which assumed that this form of knowledge is necessary for success in different work settings (Brody, 1992). Tacit knowledge scores accounted for 25% or more of the variance in professional accomplishment and tacit knowledge was found to be uncorrelated with scores on general intelligence measures (Brody, 1992). Tacit knowledge was viewed as a step forward in understanding individual differences in occupational performance.

The development of the theory of tacit knowledge spurred research into measuring individual differences in social functioning or social intelligence (Brody, 1992). Profile of Nonverbal Sensitivity (PONS) is a measure of an individual's general ability to accurately judge emotional expressions, while abilities measured by the PONS were found to be independent of general intelligence measures (Brody, 1992).

Although there is limited research on the construct of social intelligence, results to date indicate that social intelligence includes a variety of performance skills which are related to the mastery of appropriate behaviours in different social settings (Brody, 1992). Research has found that measures of social intelligence weakly related to intelligence (Brody, 1992). The development of social intelligence led to the advancement in EI theory and measuring instruments (Salovey & Pizarro, 2003).

4.3 What is Emotional Intelligence?

EI provides a framework for understanding the ways in which people recognise and deal with emotions (Jordan, Ashkanasy, & Hartel, 2002). Emotions provide adaptive responses to conditions within an individual's environment (Strongman, 2003). People can apply intelligence to their emotional states as they do not have to follow every impulse generated from emotional responses (Strongman, 2003). EI provides a model through which investigators can understand the relationship between emotion and intelligence (Salovey & Pizarro, 2003).

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[2] The constructive thinking inventory is designed to measure competence in constructive thinking (Brody, 1992).
[3] Tacit knowledge is defined as "knowledge about managing oneself, managing others, and managing a career" (Brody, p.334, 1992).

Emotions are an important part of everyday functioning. By effectively managing emotional responses, individuals can use their emotions to full benefit (Salovey & Pizarro, 2003). The theory of EI maintains that emotions are not rigid, automatic and reflexive but rather they are open to alteration, regulation and management (Salovey & Pizarro, 2003). EI is necessary for effective functioning within an occupational setting, as it encompasses the empathy, communication, stress tolerance and the social skills required for effective functioning at work (Reuven, 1999). To date, there are various measures of these EI abilities which are used in an occupational settings for employee selection, development and performance management.

4.4 The problems with measuring and defining EI

Currently, there are three approaches to measuring EI: the self-report (mixed-model), observer report (mixed-model) and ability measures. Self report and observer report approaches are often referred to as 'mixed- models' of EI because they measure a mix of constructs related to EI such as empathy, wellbeing, and optimism (Mayer, 2003). Ability measures try to assess an individual's specific abilities related to EI, such as the ability to identify emotions associated with certain facial expressions. Each measure uses a range of related constructs or dimensions that define EI. The most frequently used approach for measuring EI in occupational settings is the self report 'mixed models' measures. The present research will use a self report measure of EI. This section will outline different types of self report measures and dimensions, and the associated issues and limitations.

There are many self report measure of EI available such as the BarOn Emotional Quotient Inventory (EQI), the competency based model and the Genos Emotional Intelligence (EI) measure (Reuven, 1999). Each measure assesses different aspects of EI.

The BarOn EQI measures EI as a set of self reported abilities and these cover an array of emotional and social capabilities that influence the overall ability to cope with environmental demands (Matthews, Roberts & Zeidner, 2003). This tool was

developed from clinical practice to be applied within a clinical setting: however, it is often applied to the selection and development of employees.

This measure of EI identifies four main abilities:

1 the ability to be aware of, to understand and express oneself
2 the ability to be aware of, to understand and relate to others
3 the ability to deal with strong emotions and control one's impulses
4 the ability to adapt, to change and to solve problems of a personal or social nature (Goleman, 1998).

Another self report approach is the competency-based model of EI developed by Goleman (2001) which was developed specifically for use within an occupational setting. This assessment maintains that EI is comprised of 20 competencies[4] that distinguish individual differences in work performance. These competencies underlie four main general abilities, namely:

1 Self-awareness, the ability to understand feelings and possess an accurate self assessment
2 Self-management, the ability to manage internal states, impulses and resources
3 Social awareness, the ability to read people and groups accurately
4 Relationship management, the ability to induce desirable responses in others (Goleman, 2001).

Similarly, the Genos Emotional Intelligence (EI) is a self report questionnaire developed for occupational use (Genos, 2003). This approach maintains that EI is related to:

- Networking abilities
- Listening
- Oral communication skills
- Stress tolerance
- Adaptability
- Conflict management
- Building healthy trusting relationships with clients and colleagues

[4] Competency may be defined as "a learned capability that results in outstanding performance at work" (Goleman, 2001, p.27).

- Teamwork effectiveness
- Skills at negotiating agreements
- Leadership (Genos, 2003).

This inventory provides an assessment of the way people typically think, feel and act with emotions at work according to an empirically-based five-factor model of emotional intelligence (Genos, 2003). The Genos EI assessment is based on five competencies related to work. These include:

1 The ability to identify one's own feelings and emotional states
2 The ability to express those inner feelings to others
3 The ability to identify and understand the emotions of others which manifest in external stimuli
4 The extent to which emotions and emotional knowledge are incorporated in decision-making and/or problem solving
5 The ability to manage positive and negative emotions both within oneself and others; the ability to effectively control strong emotional states experienced at work such as anger, stress, anxiety and frustration (Genos, 2003).

There are many measures of EI and numerous dimensions related to EI, and a lack of consensus amongst practitioners and researchers as to the exact dimensions and associated definitions of EI. "At present it is unclear what is meant by EI, it is of concern that the proponents of EI have moved too fast in making claims based on limited data and we remain doubtful that EI will shake its elusive status" (Mayer, 2002, p. 98). Research supports this disparity between measures of EI, as Schaie (2001) found a lack of cohesiveness between measures of EI in terms of which underlying domains combine to form the construct.

The overall problem with such mixed-model measures is that the abilities and skills they tap to produce the EI measurement are not strictly emotional abilities. The BarOn EQI has 15 scales; consequently the instrument is attempting to sample an extraordinarily large number of independent psychological constructs such as empathy, happiness, stress and optimism (Schaie, 2001). The problem with such mixed-model approaches is the adequacy of construct validity, as "it is almost certain that these 15 scales sample considerably more than one psychological construct" (Pfeiffer, 2001, p.5). Research has criticized such measures and attributed the

problems with broad measurement to poor theoretical grounding and construct definition (Roberts, Zeidner, & Matthews, 2001).

Research by Matthews, Roberts, & Zeidner, (2003) into these seemingly unrelated definitions and dimensions of EI found that EI is made up of three broad abilities; the ability to manage one's emotions effectively, to understand the emotions of oneself, and to understand the emotions of others. In line with this, the present research proposes a three factor model of EI made up of emotional management, understanding one's own emotions and understanding others' emotions.

This lack of construct consensus or validity may also lead to poor predictive validity. The concept of EI has had minimal research conducted in an organisational context (Dulewicz & Higgs, 2000). Most of the current research has stemmed largely from instruments that were developed in a clinical context such as the BarOn EQI. The lack of predictive and criterion validity raises the need for researchers to assess the measures they use against a theoretical framework and sound definition of EI (Dulewicz & Higgs, 2000). Although an assessment of the construct validity of EI instruments is important, there are inherent limitations in self report measures of EI which need to be considered. The next section will outline each of these issues and the associated implications.

4.5 The limitations in measures of EI

Although there is a range of EI measures, each presents issues for measurement with implications for conducting valid research. According to Zeidner, Roberts, and Matthews (2001), self-report scales suffer several drawbacks. Firstly, intelligence refers to an individual's ability to solve problems therefore the appropriate form of assessment should be ability testing and not a self-report questionnaire. Secondly, people are generally poor judges of their ability: self-estimates of cognitive intelligence are almost always unrelated to measured intelligence and correlate highly with positive affect and attitude. Thirdly, self-report measures rely on a person's self-understanding and consequently are inaccurate if an individual has limited self

awareness (Zeidner, Roberts, & Matthews, 2001). Lastly, although cognitive ability scores are based on the number of correct items, self-report inventories do not define an item as correct or incorrect (Decker, 2003).

The use of Likert scale scoring methods without correct or incorrect answers is one of the main areas in which EI measurement contrasts with traditional intelligence assessment scoring methods Often intelligence tests are based on some formal rule-bound system where an answer is unequivocally correct or incorrect (Decker, 2003). Therefore it is relatively straightforward to decide whether an individual possesses a specific ability. An assessment of EI should depend on answers to questions assessing various abilities related to managing and understanding emotions, such as correctly recognising the emotion associated with a facial expression. These answers can be categorised as correct or incorrect (Mayer, Salovey, Caruso, & Sitarenios, 2001). Observer-rating assessments, whereby informants rate an individual on their EI, suffer from many of the same problems as the self-report measures since little is known of their psychometric properties, and observers suffer the same ambiguity with regard to scoring measures (Mayer, 2002). A more systematic and categorical approach to scoring EI measures is required for an objective assessment of an individual's actual level of EI.

Measures of EI should be replaced with a more stable and accurate approach if the measures are indeed to be labelled a form of intelligence. Until such measures are developed, researchers need to validate current measures and theoretical approaches. This can be done by using factor analysis to assess the construct validity of the dimensions and related definitions of EI. The present research will take into account these limitations by analysing the dimensions of EI.

4.6 The importance of EI for individual functioning at work

The ability to effectively manage emotional reactions is one of the key dimensions of EI that facilitates effective outcomes in an occupational setting (Salovey & Pizarro, 2003). Previous literature has investigated the impact of workplace EI on leadership, performance and life satisfaction (Gardner & Stough, 2003). As a result of current

research findings, EI is currently used in organisations for recruitment and for predicting job performance, negotiations, performance management and peer relationships (Foote, 2001).

A lack of EI ability can result in deficits in performance at work (Ciarrochi, Forgas & Mayer, 2001). Individuals with high EI are more likely to effectively identify their emotions, which will provide them with an awareness of their feelings and the ability to accurately read other people's feelings (Ciarrochi, Forgas & Mayer, 2001). Understanding emotions offers insights into what motivates people and others' points of view, while managing emotions allows an individual to deal with their feelings constructively at work (Ciarrochi, Forgas & Mayer, 2001). Findings by Gardner and Stough, (2001) indicate that these emotional 'competencies' are necessary for high performance in most occupations.

Effective emotional management and the ability to understand emotions are important for effective leadership at work. Research into emotions and leadership is related to the way that unregulated emotions compromise the capacity to function effectively (Caruso & Wolfe 2004). Neuroscientists now suggest that emotion is necessary for effective judgement and decision making (London, 2004). Emotionally intelligent leaders should behave in ways that engender better and more effective communications with followers, and identify the emotions of their staff and alter their approach accordingly (Caruso & Wolfe, 2004). In addition, they should be able to create an emotional tone that will facilitate optimal team performance, they should understand the emotional impact of organisational changes on staff, and they should manage emotions to cope effectively at work (Caruso & Wolfe, 2004). Carmeli (2003) states that the skills of managing people are important in the creation of effective management and leadership and EI may be the most critical component of these skills.

Research indicates that EI has a strong relationship with leadership ability. Hay & McBer (2000) surveyed 3781 executives and found that 50 to 70% of employees' overall perception of the working climate was attributed to the EI abilities of the leader (Goleman, 2004). Cavallo (2000) surveyed 358 managers and found that the highest performing managers had significantly more emotional competence than other managers (Salaski & Cartwright, 2002). EI enhances a leader's ability to solve

problems and to address issues and opportunities (Gardner & Stough, 2001). EI is an important factor for effective leadership in organisations. These findings are fundamental for organisations that acknowledge the critical role played by managers and leaders in maintaining their success.

EI is an important ability for everyday functioning. EI is often referred to as a learned ability and research has found that EI competencies can be significantly improved with these improvements being sustainable over time (Emmerling & Goleman, 2003). An interesting aspect of EI is that it increases with age and maturity, therefore through practice and commitment EI can be learned and enhanced (Salaski & Cartwright, 2002). EI is used within development programmes at work in an attempt to improve individual functioning across a range of abilities.

4.7 EI and occupational stress

Recently there has been an increase in research into the relationship between EI and stress. Previous research into individual differences that may affect the stress process has primarily investigated dispositional variables such as Type A Behaviour, hardiness, optimism, locus of control and social support (Slaski & Cartwright, 2003). There is emerging interest in emotions and how they affect the way in which individuals appraise and respond to a stressful situation. Svyantek & Rahim (2002) conducted a literature review of research into EI and its relationships with other variables, finding that research has traditionally focused on the relationships of EI with intelligence and concluding that there is a need for research into the relationship between EI and the stress process. EI is an important construct when considering individual performance and its relationship to effective coping, the experience of positive emotions and long-term health outcomes. There is emerging interest in the role and importance of emotions in affecting the way individuals appraise and respond to potentially challenging situations (Slaski & Cartwright, 2003).

Emotionally intelligent individuals should consistently use more adaptive coping strategies in handling a variety of different challenges (Matthews, Zeider & Roberts, 2002). Jordan, Ashkanasy, and Hartel (2002) maintain that events within the workplace trigger affective responses that lead in turn to attitudinal and behaviour

responses. Coping is argued to be associated with EI because the appraisal of affective events such as challenging situations is characterised in terms of emotional perception and assimilation, with the subsequent choice of a coping strategy affected by the individual's ability to understand and manage emotions (Jordan, Ashkanasy, & Hartel, 2002). In this way, EI is linked to both the appraisal and coping processes.

The three dimensions of EI (emotional self awareness, emotional management and understanding others' emotions) should each have a specific relationship with appraisal and coping. Emotional self awareness is an individual's level of insight into their emotional reactions. It accounts for individual differences in the capacity to process information in terms of its emotional significance and relate these thoughts to broader cognitions (Slaski & Cartwright, 2003). Emotional Management is an aspect of EI that involves the effective regulation of emotions, whereby an individual can connect with or disconnect from an emotion, depending on its usefulness in any given situation (Jordan, Ashkanasy, & Hartel, 2002). When experiencing a conflict at work it may be advantageous to be able to disconnect from feelings such as anger, which could distract an individual from effectively managing the conflict or completing associated tasks. In this way, the ability to understand and manage one's emotions has a relationship with the stress process. Understanding others emotions involves the ability to empathise with other's emotional reactions and gauge how they may be feeling (Matthews, Zeider, & Roberts, 2002). By generating multiple perspectives to understand a problem, an individual is more likely to consider these when trying to cope with a demanding situation (Slaski & Cartwright, 2003). Emotional understanding allows individuals to assess the feelings that others are experiencing and to use this when trying to understand others' emotional expressions and behaviours. This emotional insight is important for coping and decision making. It is more likely that those individuals who consider others' emotional perspectives will rely on their opinions, points of view and understanding when trying to cope with a difficult situation (Jordan, Ashkanasy, & Hartel, 2002).

Recently, several studies have investigated EI in the workplace in terms of its effect on conflict management strategies, stress, individual performance and team performance. Svyantek & Rahim (2002) found that EI was inversely associated with

individuals' assessments of organisational stress and that job type had an effect on this relationship, since different jobs required different levels of EI. Salaski and Cartwright (2002) investigated the relationship between EI, subjective stress, distress, general health, morale, quality of working life and the associated effect on retail managers' performance. Managers who scored higher in EI suffered less subjective stress, experienced better health and wellbeing and this relationship affected management performance.

There has been increasing interest in how emotional reactions and experiences affect physical as well as psychological health. Researchers have found associations between negative emotional states and poor psychological functioning, while positive emotional states are associated with healthier patterns of cardiovascular activity and immune functioning (Tsaousis & Nikolaou, 2005). Individuals who can regulate their emotional states have been found to be healthier because they are able to correctly appraise their emotional states, express their feelings and regulate their moods (Tsaousis & Nikolaou, 2005). It is suggested that an individual with high levels of EI will be able to cope better with challenges and control their emotions more effectively than individuals with low levels of EI, which will improve the physical and psychological health outcomes associated with stress (Tsaousis & Nikolaou, 2005).

Current research into the relationships of occupational stress and EI has implications for future organisational training programs and EI development efforts. Lam (1999) maintains that there is a relationship between coping and EI. Future research needs to clearly specify the nature of these relationships based on a sound theoretical framework. Future research into EI based on theoretical models will provide practical implications for organisations and greater understanding into the nature of the stress process (Svyantek & Rahim, 2002).

4.8 The moderating or mediating affect of EI on the stress process

Transactional theories have highlighted the importance of individual differences and their effects on appraisal and coping (Slaski & Cartwright, 2003). Individual differences such as EI can add to the current understanding of differences in the

ability to cope (Matthews, Zeider, & Roberts, 2002). To date, there have been numerous studies which consider the varying personality and demographic factors that could mediate or moderate the stress process (Slaski & Cartwright, 2003). The present research will add to current investigations by considering the role of EI as an individual difference variable, and investigate whether it has a mediating or moderating affect on appraisal and coping.

The transactional model is consistent with a possible conceptualisation of EI as an underlying competence that supports adaptive coping such as task focused or social support coping strategies (Lazarus, 1999). The link between EI and stress is founded upon the notion that negative emotions and stress are a result of some dysfunctional relationship between aspects of the individual and the environment, and that the ability to read and manage emotions may serve as either a mediator or moderator in this process (Slaski & Cartwright, 2003). EI is considered to account for individual differences in the capacity to process information that is emotional in nature and be able to relate these to wider cognitions (Matthews, Zeider & Roberts, 2002). EI is more than just an approach to understanding emotions: it offers a framework for assessing how individuals effectively integrate thoughts with behaviour to reduce aversive emotional experiences (Slaski & Cartwright, 2003). EI functions as an individual difference variable within the transactional model of stress and it influences the way individuals appraise and cope with demanding situations.

Current research findings, indicate that EI may have an important role in affecting the appraisal process (Slaski & Cartwright, 2003). EI explains the extent to which individuals are able to understand and manage emotional responses, therefore it can be argued that EI affects an individual's perception of a stressful event (Jordan, Ashkanasy, & Hartel, 2002). Effective understanding and management of emotions may reduce the aversive emotional experiences associated with a stressful situation (Slaski & Cartwright, 2003).

Within a demanding or challenging environment EI will influence the selection of coping strategies used to deal with the demands (Matthews, Zeider & Roberts, 2002).

Matthews, Zeider and Roberts, (2002) maintain that EI influences the way in which individuals respond to challenging or threatening situations in terms of specific behaviours or processes supporting or inhibiting effective coping. EI influences an individual's aptitude for handling challenging situations. Individuals with high EI are more likely to integrate emotions with thought and behaviour (Slaski & Cartwright, 2003). EI has been found to be predictive of individual performance and significantly correlated with individual levels of empathy and coping (Gardner & Stough, 2001). Inability to understand and manage emotions has been associated with maladaptive coping behaviours such as smoking, drinking and eating fatty foods, which can also lead to long term health damage (Tsaousis & Nikolaou, 2005). Future research will need to investigate whether the development of emotional self awareness and management skills may improve coping with work related demands (Cassidy, 1999).

Recent attention has been given to the type of relationship EI would have with the stress process (Cassidy, 1999). There is a need to establish whether EI functions as a mediator or moderator in the stress process (Tsaousis & Nikolaou, 2005). Nikolaou and Tsaousis (2002) found a significant correlation between measures of EI, occupational stress and organizational commitment. However, current research suggests that EI may have an important role in moderating the appraisal and coping relationship (Slaski & Cartwright, 2003). The increasing shifts towards assessing and developing EI requires that future research examine the specific effects of emotional management, emotional self awareness and understanding others' emotions on the stress process (Cassidy, 1999). The present research will investigate whether the three factors of EI function as mediators or moderators.

4.9 Hypothesised relationships between EI and appraisal

Emotional self awareness is the starting point for dealing with stressful situations effectively. The ability to recognise and analyse one's own emotions is important for overcoming demanding situations by dealing with affective responses (Jordan, Ashkanasy, & Hartel, 2002). If an individual is able to understand their emotional reactions to challenging situations they are more likely to be able to adapt to stressful situations and to use effective coping strategies (Jordan, Ashkanasy, & Hartel, 2002).

Within a transactional stress model, the ability to interpret and regulate the appropriate emotions in relation to the demands of the situation will facilitate effective management of personal resources and reduce negative affective outcomes (Lazarus 1999). In this way, emotional self awareness, understanding others' emotions and emotional management, affect the relationship between the appraisal of a demand and the choice of coping strategy (Gardner & Stough, 2001). Specifically, individuals who are able to understand and manage their own emotions and understand those of others when presented with a demand are more likely to appraise the situation as a challenge and engage in task focused coping strategies aimed at dealing with or understanding the problem (Matthews, Zeider, & Roberts, 2002). This research proposes that emotional self awareness, emotional management and the ability to understand others emotions will be positively related to challenge appraisals.

Hypothesis 10: Emotional self awareness, emotional management and understanding emotions will have a positive relationship with challenge appraisals.

4.10 Hypothesised relationships between EI and coping

A considerable body of research suggests that a person's ability to perceive, identify and manage emotions provides the basis for the competencies required for the effective management of workplace demands, stress and success in a majority of occupations (Cherniss, 2000). Research by Lam (1999) found that EI predicted performance and coping behavior. High levels of emotional self awareness, emotional management and emotional recognition (the ability to understand others' emotions) were positively associated with effective problem focused coping. The present

research proposes that emotional self awareness, emotional management and understanding others' emotions will be positively related to task focused coping.

Hypothesis 11 Emotional Self Awareness, emotional management and understanding others' emotions will have a positive relationship with task focused coping.

4.11 EI as mediator or moderator on the appraisal and coping process?

The link between EI and stress is based on the premise that negative emotions and stress are the result of an ineffective relationship between a person and their environment. The ability to understand and manage emotions may serve as either a mediator or moderator in this relationship (Slaski & Cartwright, 2003). The present research will investigate whether emotional self awareness, emotional management and the ability to understand others emotions function as either mediators or moderators within the stress process.

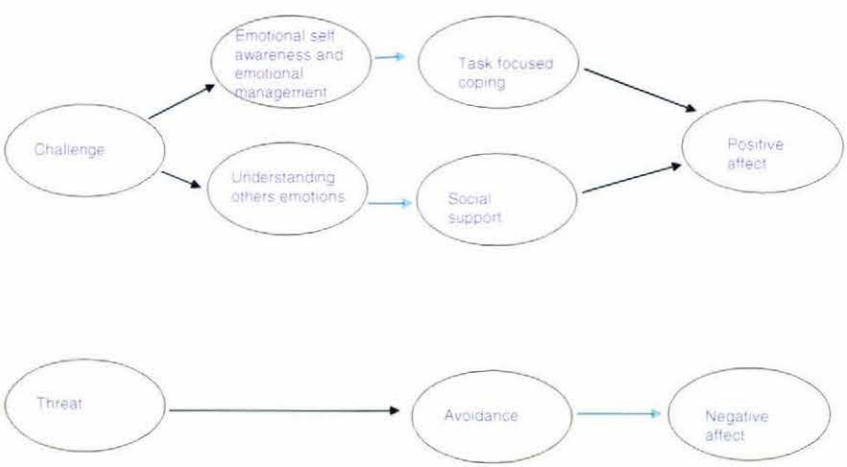

Figure 3. Emotional intelligence as a mediator of the stress process

EI may function as a mediator of the primary appraisal and coping relationship as illustrated in Figure 3. Emotional self awareness may mediate the relationship between challenge appraisal and task focused coping. The effective coordination and integration of emotional reactions may improve the relationship between challenging situations and the effective use of coping strategies (Boekaerts, 2002). Empathic ability may improve an individual's ability to solve challenging problems at work such as those which require the reconciliation of conflicting opinions or working with diverse people in an organisation (Matthews, Zeider, & Roberts, 2002). Cassidy, (1999) maintains that an individual's development of emotional self awareness and

emotional management will influence the ability to cope effectively with work related demands. Tsaousis and Nikolaou (2005) state that emotional management improves the relationship between the primary appraisal and the type of coping strategy chosen. The present research will investigate the mediating role of emotional self awareness and emotional management on challenge appraisal and task focused coping.

The ability to understand others emotions may mediate the challenge appraisal and social support relationship. Individuals who are able to understand others feelings are more likely to require support from others in challenging situations (Slaski & Cartwright, 2003). Specifically, they may need others to empathise with their situation, identify their emotional reactions and provide social support or resources to deal with a stressful situation (Jordan, Ashkanasy, & Hartel, 2002). Social support coping involves attempts by an individual to regulate distressful emotions and channel negative affect and reconceptualise the problem by engaging with others (Matthews, Zeider & Roberts, 2002). When presented with a challenging situation, individuals who understand others' emotions are more likely to use adaptive forms of coping such as discussing or sharing how they are feeling with others, or drawing on social and emotional support from family or friends. (Jordan, Ashkanasy, & Hartel, 2002). The ability to cope effectively with a stressful situation may be mediated by an individual's ability to understand others' emotions as they engage in behaviours to effectively manage feelings of distress (Lazarus, 1999). In this way, the ability to understand others emotions may mediate the relationship between challenge appraisal and social support coping.

Hypothesis 12: Emotional self awareness will mediate the relationship between challenge appraisals and task focused coping

Hypothesis 13: Emotional management will mediate the relationship between challenge appraisals and task focused coping

Hypothesis 14: Understanding others' emotions will mediate the relationship between challenge appraisals and social support coping

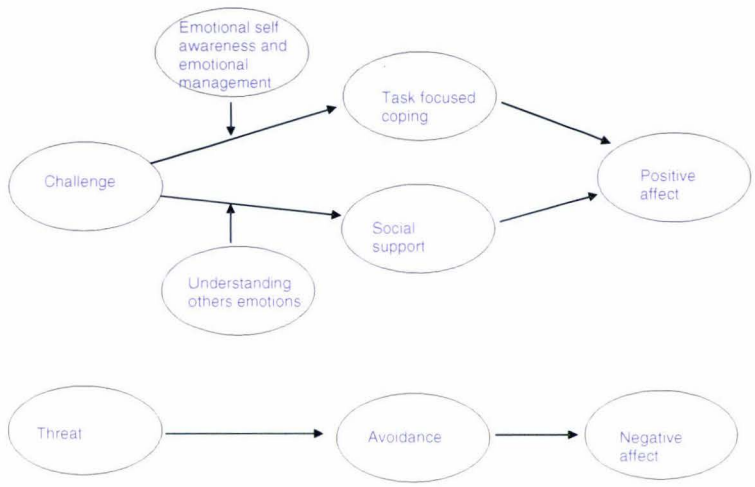

Figure 4. Emotional intelligence as a moderator of the stress process

EI may function as a moderator of the primary appraisal and coping relationship as illustrated in Figure 3. Emotional self awareness and emotional management may serve as moderators of challenge appraisal and task focused coping. The ability to understand emotions may increase adaptive behaviours that manage feelings of distress and allow an individual to cope effectively, such as task focused coping strategies (Slaski & Cartwright, 2003). When presented with a demanding situation, an individual that has a high ability to understand the emotions of others may be more likely to effectively recognise and interpret the motivations, expressions and behaviours of others, which in turn will modify the individual's subsequent choice of coping strategies (Matthews, Zeider, & Roberts, 2002). In this way, the ability to understand others' emotions may change the relationship between challenge appraisals and task focused coping.

Research suggests that emotional regulation may serve as a moderator in the stress process (Matthews, Zeider, & Roberts, 2002). For example, research by Boekaerts (2002) predicted that an individual's level of emotional regulation would determine both the type of coping strategy used and the associated experience of stress. The findings indicated that there was support for emotional regulation as a moderator on the stress process, as individuals with high levels of emotional regulation were more

likely to use effective coping strategies. In this way, emotional self awareness and emotional management may moderate the challenge appraisal and task focused coping relationship.

The ability to understand others emotions may serve as a moderator on the challenge appraisal and social support coping relationship. Cassidy (1999) suggests that a high ability to understand the emotions of others may increase an individual's use of social support coping. Research by Jordan, Ashkanasy, and Hartel (2002) found that employees with low EI are not well equipped to deal with their own or others affective responses, whereas individuals with high EI were able to understand others' points of view: they would then engage with others to reframe their perceptions of the situation, which would help to deal with the situation more effectively. A high ability to understand others emotions is likely to increase the use of social support coping, as an individual is more likely to relate to others, discussing and utilising their empathy and support (Matthews, Zeider, & Roberts, 2002). In this way, the ability to understand others emotions may serve as a moderator of challenge appraisal and social support coping.

Hypothesis 15: Emotional self awareness will moderate the relationship between challenge appraisals and task focused coping

Hypothesis 16: Emotional management will moderate the relationship between challenge appraisals and task focused coping

Hypothesis 17: Understanding others' emotions will moderate the relationship between challenge appraisals and social support coping

The previous chapters have outlined the background to the research and proposed hypotheses. The next sections will outline how the research was conducted, the results and the associated discussion.

CHAPTER FIVE

Method

5.1 Web-based research

The research aim was to test a model of stress and the effect of EI with a sample of professional employees across New Zealand. In order to attain a cross-section of industries and occupational levels, the research was conducted through the use of an online (web-based) questionnaire. Research by Bartman and Brown (2002) found that scale reliabilities and covariances were unaffected by the differences between supervised and unsupervised web-based administration conditions. Internet samples are more diverse with respect to age, gender, socioeconomic status and geographic region, findings were found to generalize across presentation formats. Internet research is inherently no more risky than traditional observational, survey or experimental method and has some distinct advantages in terms of respondent diversity (Vazire & Srivastava , 2004).

5.2 Participants

With the assistance of a recruitment organisation, 300 out of 1000 individuals who were registered to receive emails from the organisation were randomly selected and contacted via email and asked to participate in the research. The email contained a link to the survey website: a copy of this is in Appendix A.

Participants were informed that partaking was voluntary, that the survey would take approximately 20-40 minutes to complete, and that they could choose not to participate by closing the webpage and deleting the email. Participants who agreed to take part in the research were asked to complete a consent form.

Participants were asked to register with a unique individual password provided in the email. All individual responses were protected with an access identification number and password. Results were saved online in an Excel spread sheet which was also protected by a password to which only the researcher had access. Data identifying individual respondents was not collected. After three months the website terminated itself and the information was deleted form the internet.

5.3 The survey

The survey included a demographic questionnaire, an emotional intelligence questionnaire, a question on organisational demands, a primary appraisal questionnaire, a secondary appraisal questionnaire and an affect questionnaire.

5.3.1 Demographic information

Information was collected regarding:

- Date of birth
- Education level
- Employment level
- Employment position
- Computer experience
- First language (English)
- The level of management
- The approximate number of employees within the organsiation

5.3.2 Emotional Intelligence

EI data was collected using the Genos EI self-assessment. This provides an overall score that indicates an individual's general work-place emotional intelligence and five sub-scale scores that indicate an individual's more specific capabilities according to the five dimensions of the model: emotional recognition and expression; understanding others emotions; emotions direct cognition (emotional problem solving); emotional management and emotional control. There are a total of 64 items from this assessment. Participants were asked to indicate the extent to which each statement was true of the way they typically think, feel and act when at work, and respond on a 5-point scale where 1 = strongly disagree and 5=strongly agree. EI items were subject to principle components analysis outlined in the results.

5.3.3 Demands

Respondents were asked to think of a specific stressful situation at work that they had experienced in the last two weeks and to briefly outline this situation in the text box provided. Responses were then coded according to the classification system for

occupational demands developed by Cooper (1998) into factors intrinsic to the job, role factors, relationships at work, career development, organisational factors and the interface between home and work.

5.3.4 Primary appraisal

The primary and secondary appraisal items were answered in relation to a situation at work that was identified by the participant as being stressful or demanding. Primary appraisal was assessed using the eight item Cognitive Appraisal Scale (Skinner & Brewer, 2002). Four items assessed threat appraisal, such as "I was concerned about my ability to perform under pressure". Another four items assessed challenge appraisal, such as "I was thinking about the good consequences of performing well". Answers were on a 5-point scale where 1= strongly disagree and 5= strongly agree. Reported alpha reliability for threat was: .92 the alpha reliability for challenge was .80 (Skinner & Brewer, 2002).

Exploratory factor analysis (EFA) was conducted for the Genos Eqi and the Brief COPE The 28 items in the Brief COPE had been reduced to 20 because religion and substance were not included, since previous research evidence has suggested they are less statistically significant (Carver, 1997). The factor structure of the Genos was unknown but EFA was used to determine the underlying dimensions which make up EI. Items with factor loadings lower than 0.3 were removed. The PANAS and CAS factor structures have been confirmed by previous research (Skinner & Brewer, 2002).

5.3.5 Secondary Appraisal

Coping was assessed using the Brief COPE, which includes a total of 28 items (Carver, 1997). The Brief COPE measures 15 coping reactions: active coping; planning, positive reframing; acceptance; humour; and social support forms such as emotional support; instrumental support; and avoidance forms such as self distraction, denial, venting, behavioural disengagement; and self blame. Answers were on a 5-point scale where 1= strongly disagree and 5= strongly agree (Caver, 1997). Reportedly, scale reliabilities all exceed the value of .50 (Caver, 1997).

5.3.6 Positive and negative affect

Affective outcomes were measured using the PANAS. Ten items measured positive affect such as "indicate the extent to which the situation made you feel excited" and ten items covered negative affect such as "indicate the extent to which the situation made you feel guilty" (Simmons & Nelson, 2001). Responses ranged from one to four, with 1 = "very slightly or not at all" and 4= "quite a bit".

The internal reliabilities of each of the measures and subscales in accordance with their supported factor structures were assessed. Table 1 below outlines the internal reliabilities for each of the measures and subscales confirmed by factor analysis.

Table 1.

Internal consistency reliabilities for the 11 variable measures

Measure	Scale	Number of items	Alpha
Genos Eqi	Understanding others	24	.92
	Emotional management	20	.90
	Emotional self awareness	16	.76
CAS	Threat	4	.77
	Challenge	4	.77
Brief COPE	Task focused	8	.74
	Social support	4	.68
	Avoidance	6	.72
PANAS	Positive affect	10	.90
PANAS	Negative affect	10	.83

5.4 Data Analysis

5.4.1 Descriptive statistics

Data collected via the online survey was saved to an Excel spreadsheet then exported into SPSS, with respondents only having an identification number. Descriptive statistics were computed for demographic information.

5.4.2 Statistical assumptions and Scale Reliabilities

The measurement instruments were examined for evidence of normality, outliers, and homoscedesticity as recommended by Pallant (2003).

Firstly, histogram plots were used to assess normality (normal distributions) for challenge appraisal, threat appraisal, task focused coping, social support, avoidance, positive affect, negative affect, understanding others' emotions, emotional self awareness and emotional management, all of which had normal distributions. For these scales the Kolmogorov-Smirnov statistic was used to assess normality. Each scale had a non-significant result, indicating normality. For all these scales skewedness and kurtosis values fell within the normal range as recommended by Pallant (2003). Normality was also supported by an inspection of the normal probability plots. In these plots the observed value for each score is plotted against the expected value from the normal distribution. Each of these scales had a straight line suggesting a normal distribution (Pallant, 2003).

Secondly, outliers were identified and examined to see what influence they would have on the scale means. This can be assessed by examining the 5% trimmed mean, where the top and bottom 5% of cases are removed and the mean is recalculated, and examined against the original mean score. This examination gave an indication of how much influence the extreme scores were having on the mean (Pallant, 2003). The means were examined and had similar values, so they were retained. For example, the challenge scale had a mean of 3.35 and a trimmed mean of 3.12, therefore the outliers were retained (Kenny, 2003).

Finally, evidence of homoscedesticity (equal error variances) was examined through standardised plots of the residuals for the relationships under study (Pallant, 2003). All standardised residual plots showed a normal distribution of errors centred around zero at all values of X, thus providing support for the assumption of homoscedesticity (Pallant, 2003).

Internal consistency estimates of reliability for all scales were calculated using Cronbach's alpha. Means and standard deviations of all scales were tabulated and are included in the results section.

5.4.3 Intercorrelations

Bivariate correlations were assessed using the Pearson product-moment correlation, as recommended by Pallant (2003). Mediation and moderation were tested using multiple regression as recommended by Kenny (2003).

5.4.4 Mediation analysis

Multiple regression allows prediction of a single dependent variable from a group of independent variables (IV) (Pallant, 2003). It can be used to test the relative contribution of each individual variable (Pallant, 2003). As illustrated below, the effect of X on Y may be mediated by a process or mediating variable M, and the variable X may still affect Y (Kenny, 2003).

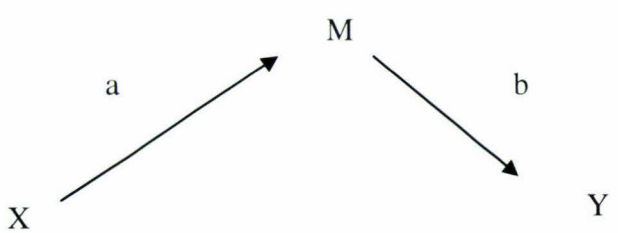

Figure 4. Mediation analysis (Kenny, 2003)

This research used the multiple regression procedure for assessing complete[5] and partial[6] mediation affects of EI and secondary appraisal on the stress process, as recommended by Baron and Kenny (1986). Baron and Kenny (1986) and Judd and Kenny (1981) have discussed four steps in establishing mediation:

Step 1: Show that the initial variable is correlated with the outcome. Use Y as the criterion variable in a regression equation and X as a predictor (estimate and test path c). This step establishes that there is an effect that may be mediated (Kenny, 2003).

Step 2: Show that the initial variable is correlated with the mediator. Use M as the criterion variable in the regression equation and X as a predictor (estimate and test path a). This step essentially involves treating the mediator as if it were an outcome variable (Kenny, 2003).

Step 3: Regress the dependant variable (DV) on both the independent variable (IV) and the mediator (M) to show that the mediator affects the outcome variable. Use Y as the criterion variable in a regression equation and X and M as predictors. It is not sufficient just to correlate the mediator with the outcome; the mediator and the outcome may be correlated because they are both caused by the initial variable X. Thus, the initial variable must be controlled in establishing the effect of the mediator on the outcome (Kenny, 2003).

Step 4 To establish that M completely mediates the X-Y relationship, the effect of X on Y controlling for M should be zero. The effects in both Steps 3 and 4 are estimated in the same regression equation (Kenny, 2003).

If all four of these steps are met, then the data are consistent with the hypothesis that variable M completely mediates the X-Y relationship, and if the first three steps are met but the Step 4 is not, and the effect of the IV on the DV is reduced, then partial mediation is indicated (Kenny, 2003).

If Step 2 (the test of a) and Step 3 (the test of b) are met, it follows that there is necessarily a reduction in the effect of X on Y (Kenny, 2003). An indirect and

[5] Complete mediation is the case in which variable X no longer affects Y after M has been controlled and so path c' is zero (Kenny, 2003).

[6] Partial mediation is the case in which the path from X to Y is reduced in absolute size but is still different from zero when the mediator is controlled (Kenny, 2003).

approximate test that ab = 0 is to test that both a and b are zero (Steps 2 and 3) (Kenny, 2003). Sobel (1982) developed a test for assessing this indirect effect, which is given by dividing ab by the square root of the above variance and treating the ratio as a Z test (i.e., larger than 1.96 in absolute value is significant at the .05 level). The Sobel formula is an approximation (Kenny, 2003). Preacher and Leonardelli (2003) have developed a web page that calculates the Sobel test online (Kenny, 2003).

5.4.6 Interaction Analysis

Moderation occurs when a variable changes the relationship between two other variables. As illustrated below, complete moderation would occur in the case when the effect of X on Y would go to zero when M takes on a particular value (Kenny, 2003).

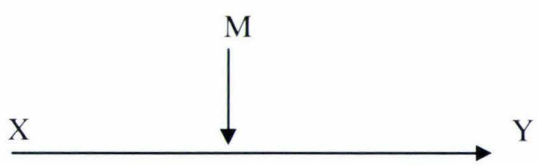

Figure 5. Moderation Effect (Kenny, 2003).

To assess the interacting affects of emotional management, emotional self awareness and understanding others' emotions on the appraisal and coping process, the hierarchical regression analysis recommended by Baron and Kenny (1986) was used. Hierarchical regression analysis tested for linear and interaction relations between the appraisal processes and EI. The recommended order of entry is

1. Control variables such as age or gender
2. The independent variable
3. The independent variable and the moderator
4. The independent variable, moderator and interaction term (Kenny, 2003).

Before testing for the interactions, the scores for the independent variable and moderator were 'centred' by subtracting their respective scale means from all individuals' scores thus producing a revised sample mean of zero (Atiken & West, 1991). This procedure is suggested by Atiken and West (1991), and it was used to

eliminate the possible effects of multicolinearity between first order items of the main independent variables and the higher order interaction term.

CHAPTER SIX

Results

6.1. Descriptive Statistics

6. 1.1 Demographic statistics

A total of 156 individuals participated in this research. A demographic summary of the group is illustrated below in Table 2. The computer prompted individuals to answer all questions and no missing data was found. The total number of participants was 156. The response rate was 15.6%

Table 2. Demographic summary of all participants

Demographic Category	Frequency	Percent
Gender		
Female	76	49%
Male	80	51%
Age		
>37	56	36%
36-48	50	32%
<48	50	32%
Ethnicity		
European	136	87.2%
Other	15	9.6%
Pacific Island People	2	6.0%
Maori	1	1.3%
Asian	1	1.3%
Education Levels		
Postgraduate	72	46.2%
Tertiary	52	33.3%
Non tertiary	21	13.5%
Other professional qualifications	11	7.1%

Employment Level		
Line Managers/ General Managers	59	43.6%
Salaried staff	28	37.8%
Chief Executive Officers/ Board of Directors	69	18.6%

Ninety-four percent of respondents came from large organisations with more than 100 people. For all participants English was their first language. All participants indicated that they were competent to use a computer.

6.1.2 Demands

For the categorical variable *demands*, Cooper's (1988) six factor model was used (Jex, 1998). These factors include:

1. Factors intrinsic to the job
2. Role factors, (which includes, workload and deadlines etc)
3. Relationships at work
4. Career development
5. Organisational factors
6. Interface between home and work (Cassidy, 1999).

Each participant's qualitative description of a recent stressful situation at work was classified by two raters into one of these six categories. The inter-rater reliability was 85%. The results are illustrated below, the implications of which will be outlined in the discussion section.

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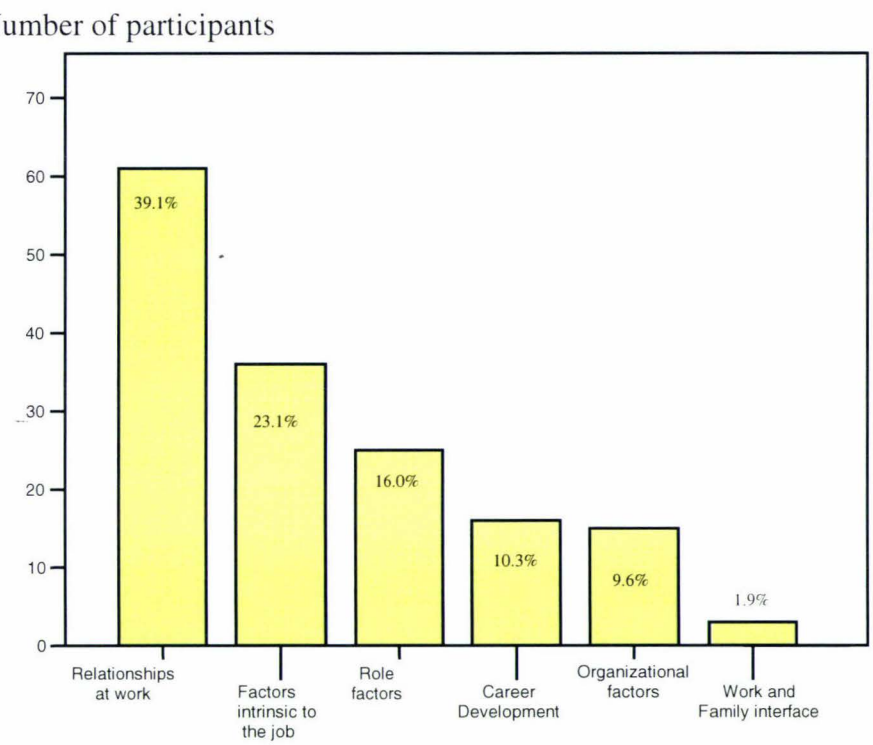
Table3. Demands.



6.3 Factor analysis

6.3.1 Emotional Intelligence

The 64 items of the Genos Eqi tool were subject to principal components analysis (PCA) using SPSS. Prior to performing PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed coefficients of .3 and above. Baron and Kenny (1986) recommend removing items that do not correlate .3 and above with the scale. Therefore using PCA results 7 items were dropped from the EI scale. The Kasier-Meyer-Oklin value was .81, exceeding the recommended value

of .6, and the Barlett's Test of Sphericity reached significance, supporting the factorability of the correlation matrix (Pallant, 2003).

PCA revealed the presence of 15 components with eigenvalues exceeding 1, explaining a total of 65.6% of the variance. An inspection of a screeplot revealed a clear break after the third component. Using Catel's (1996) scree test, it was decided to retain the 3 components for further investigation (see Appendix 2). The initial solution was an unrotated factor solution. To aid in the interpretation of these three components, Varimax rotation was performed.

The rotated solution revealed the presence of a three factor structure, with all components showing a number of medium to strong loadings. According to Pallant (2003), if the reliability analysis of the scales dropped due to cross loading items. these items are to be omitted from the scale. Therefore 3 items were dropped. The three factor solution explained 35.18% of the variance. Component 1 contributes 14.76%, component 2 contributes 26.61% and component 3 contributes 35.17%. The three components were consistent with definitions of EI which maintain that EI is made up of the ability to manage one's emotions effectively, the ability to understand the emotions of oneself (Emotional self awareness) and the ability to understand the emotions of others (Matthews, Roberts, & Zeidner, 2003).

Understanding others emotions items loading strongly on component 1, such as "I can tell how my colleagues are feeling at work". Managing ones emotions loaded strongly onto component 2, such as "I find it difficult to manage my feelings under stress". Emotional Self Awareness loaded strongly onto component 3. This factor encompassed recognising and expressing ones emotions at work with items such as "colleagues are aware of how I am feeling at work". Scale scores were computed for each of these three EI scales by taking the mean of the scale items. The reliability coefficients were as follows understanding others emotions. 92, emotional management .90, emotional self awareness .97. The total number of items per scale is outlined previously in table 1.

6.3.2 Brief COPE

The Brief COPE has a total of 28 items, these were reduced to 20. Religion and substance abuse were not included, as previous research evidence suggested that they were not statistically significant (Carver, 1997). The 20 items of the Brief COPE tool were subject to principal components analysis (PCA) using SPSS. Prior to performing PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix revealed many coefficients of .3 and above. The Kasier-Meyer-Oklin value was .76, exceeding the recommended value of .6, and the Barlett's Test of Sphericity reached significance, supporting the factorability of the correlation matrix (Pallant, 2003).

PCA revealed the presence of 6 components with eigenvalues exceeding 1, explaining a total of 67.6% of the variance. An inspection of a screeplot revealed a clear break after the third component. Using Catell's (1996) scree test, it was decided to retain the three components for further investigation (see Appendix 3). To aid in the interpretation of these two components, Varimatrix rotation was performed. The rotated solution revealed the presence of a three factor structure, with all components showing a number of medium to strong loadings. Items which loaded onto two factors were examined for suitability and retained on the appropriate factor. The three factor solution explained 45.4% of the variance, component 1 contributing 20.4%, component 2 contributing 14.0% and component 3 contributing 11.0%. The interpretation of the three components was consistent with the hypothesised structure. Task focused coping items loaded strongly on component 1, such as "I concentrated on doing something about the situation". Avoidance coping loaded strongly onto component 2, such as "I turned to work or other activities to take my mind off things". Social support items loaded strongly onto component 3 such as "I got comfort and understanding from someone". The results of this analysis support the use of three separate scales for measuring different forms of coping. The findings indicate alpha reliability for task focused coping .74, social support .68, and avoidance .72.

6.5.1 Means and standard deviations

Table 4 presents the means and standard deviations for the variables. Scales for threat and challenge items, and affect were calculated through a sum of the items. The mean of this sum is illustrated below in addition to the standard deviations.

Variable	M (N=156)	SD(N=156)
Understanding others emotions	95.80	10.40
Emotional management	74.40	9.52
Emotional self awareness	49.24	6.90
Threat	12.74	3.97
Challenge	13.38	3.97
Task focused coping	34.20	4.25
Social support	15.24	3.63
Avoidance	22.70	2.80
Positive affect	27.00	7.51
Negative affect	32.19	5.70

Table 5. Mean scores and standard deviations for the independent and dependent variables

6.5.2 Correlation matrix

Table 6 presents the correlation matrix between the scales. Hypothesis 1 was supported, as challenge appraisal was positively associated with positive affect and threat appraisal was positively associated with negative affect. Hypothesis 2 was supported, as threat appraisal did not correlate with challenge appraisal. Hypothesis 3 was supported, for the challenge appraisal and task focused coping relationship but not for the challenge appraisal and social support relationship. Hypothesis 4 was supported as threat appraisals were positively associated with avoidance. Hypothesis 5 was supported, for task focused coping was positively associated with positive affect but not for social support. Hypothesis 6 was supported as avoidance was positively associated with negative affect. Hypothesis 10 was supported, for emotional management and understanding other's emotions, which had a positive relationship

with challenge appraisal but not for emotional self awareness. Hypothesis 11 was supported, for understanding others' emotions, which had a positive relationship with task focused coping but not emotional self awareness or emotional management. The implications of these findings will be considered in the discussion.

Table 5. Correlation matrix of measurement scales

	Task Focused Coping	Social Support	Avoidance	Negative Affect	Threat	Challenge	Positive Affect	Understand Others	Emotional Management	Emotional Self Awareness
Task focused coping	1	.154	-.170(*)	-.304(**)	-.216(**)	.335(**)	.362(**)	.399(**)	.369(**)	.084
Social support		1	-.008	.111	.000	.080	.070	.256(**)	.062	.121
Avoidance			1	.542(**)	.329(**)	-.042	-.104	-.050	-.266(**)	-.080
Negative affect				1	.500(**)	-.196(*)	-.231(**)	-.104	-.334(**)	.180(*)
Threat					1	-.016	-.028	-.106	-.306(**)	.076
Challenge						1	.457(**)	.298(**)	.220(**)	.007
Positive affect							1	.204(*)	.111	-.006
Understand others								1	.379(**)	.254(**)
Emotional management									1	-.021
Emotional self awareness										1

* Correlation is significant at the 0.05 level (1-tailed).
** Correlation is significant at the 0.01 level (1-tailed).

6.6.1 Mediation analyses

The mediated regression procedure recommended by Baron and Kenny was used (1986). It had three steps; firstly, to establish the effect of the independent variable on the dependent variable; secondly, to identify the effect of the mediator on the independent variable; and finally, to examine the effects of the hypothesised mediator and the IV together on the dependent variable. This procedure was used to investigate the mediator effects of different coping strategies and EI on the stress process.

Hypothesis 7, that task focused coping would mediate the relationship between challenge appraisal and positive affect, was supported. Positive affect and task focused coping were significantly associated with challenge appraisal (β = .457). With the proposed mediator, task focused coping included in the regression the effect of challenge appraisal on positive affect was reduced but remained significant (see Table 6) so partial mediation was observed.

Hypothesis 8, that Social Support would mediate the relationship between challenge appraisal and positive affect, was not supported (see Table 6). Social support was not significantly related to challenge appraisal (β = .08ns). While the independent variable had a significant effect on the dependent variable, the mediator was not related to the independent variable, thus violating the first requirement of Baron and Kenny (1986) for mediation.

Hypothesis 9, that avoidance coping would mediate the relationship between threat appraisal and negative affect was supported (see Table 6). Negative affect and avoidance coping (the mediator) were significantly associated with threat appraisal (β = .500, β=.329 respectively). With the mediator included in the regression, the effect was reduced but remained significant, so partial mediation was observed (see Table 6).

Table 6: Mediation effects of coping.

Dependent variable	Independent variable	Beta	Change in beta [7]	Sobel test	R^2 change	df
Hypothesis 7						
Positive affect	Challenge appraisal	.457**				157
Task focused coping	Challenge appraisal	.355**				157
7						
Positive affect	Challenge appraisal	.379**	78%			
	Task focused coping	.235**		1.256*	.258	153
Hypothesis 8						
Positive affect	Challenge appraisal	.457**				
Social support	Challenge appraisal	.080 ns				157
Hypothesis 9						
Negative affect	Threat appraisal	.500**				157
Avoidance	Threat appraisal	.329**				157
Negative affect	Threat appraisal	.361**	139%			
	avoidance	.423**		0.865*	.409	153

* p<.05

** p<.01

*** p<.001

Hypothesis 12, that emotional self awareness would mediate the relationship between challenge appraisal and task focused coping, was not supported (see Table 5). While task focused coping and challenge appraisal were significantly correlated, (β = .355) emotional self awareness and challenge appraisal were not significantly related (β = .007). The mediator was unrelated to the independent variable, thus violating the first requirement of Baron and Kenny (1986) for mediation.

Hypothesis 13, that emotional management would mediate the relationship between challenge appraisal and task focused coping, was partially supported. Task focused coping and emotional management (the mediator) were significantly associated with

[7] Percentage attenuation of the beta following the introduction of the mediator variable.

challenge appraisal (β = .355, β=.220 respectively). With the proposed mediator, emotional management included in the regression the effect of challenge appraisal on task focused coping was reduced (see Table 4). When the independent variable and the mediator were entered into the regression together the effect of the independent variable was reduced so partial mediation was observed.

Hypothesis 14, that understanding others' emotions would mediate the relationship between challenge appraisal and social support, was not supported (see Table 5). The initial requirement of Baron and Kenny (1986), that challenge appraisal would have an effect on the dependent variable of social support, was not significant (β = .08) thus violating the requirements for mediation.

Table 7. Mediation effects of EI

Dependent variable	Independent variable	Beta	Change in beta [8]	Sobel test	R^2 change	df
Hypothesis 12						
Task focused coping	Challenge appraisal	.335**				157
Emotional self awareness	Challenge appraisal	.007				
Hypothesis 13						
Task focused coping	Challenge appraisal	.335**				157
Emotional management	Challenge appraisal	.220**				
Task focused coping	Challenge appraisal	.266**	89%			
	Emotional management	.311**		0.865*	.409	153
Hypothesis 14						
Social support	Challenge appraisal	.080				157

6.7 Interaction effects

Hypothesis 15 was not supported, as emotional self awareness was not found to significantly interact with challenge appraisal and task focused coping. Emotional self awareness was predicted to have changed the relationship challenge appraisal (IV) and Task Focused Coping (DV). Demographic variables of age and gender, were included as control variables which together accounted for 5% (R^2 = 0.05**) of the variance in task focused coping (see Table 8). Also, challenge appraisal accounted for 11.2% of task focused coping (R^2 = 0.112**). Challenge appraisal and emotional self awareness together accounted for 19% (R^2 = 0.19**) of the variance in task focused coping. The interaction of challenge and emotional self awareness did not reach significance, see Table 8. Although a direct effect was found for challenge appraisal and task focused coping, emotional self awareness did not moderate the relationship with challenge appraisal and task focused coping.

[8] Percentage attenuation of the beta following the introduction of the mediator variable.

Hypothesis 16 was not supported, as emotional management did not moderate the challenge appraisal and task focused coping relationship. Demographic variables of age and gender were included as control variables which together accounted for 5% (R^2 = 0.05**) of the variance in task focused coping (see Table 9) Also challenge appraisal accounted for 11% of task focused coping (R^2 = 0.11**). Emotional management and challenge appraisal together accounted for 20% (R^2 = 0.20**) of the variance in task focused coping. The interactive item of challenge appraisal and emotional management did not reach significance, see Table 9. While a direct effects was found for emotional management and challenge appraisal no interaction effect was found.

Hypothesis 17 was not supported, as understanding others' emotions did not moderate the challenge appraisal and social support relationship. Demographic variables of age and gender were included as control variables which together accounted for 5% (R^2 = 0.05**)of the variance in Social Support (see Table 10). Challenge appraisal, understanding others' emotions, and the interaction item, did not statistically significantly account for the variance in social support. The interactive item of challenge appraisal and understanding others emotions did not reach significance, see Table 10.

Table 8. Moderation effects of emotional self awareness on task focused coping and challenge appraisal

Dependent variable	Order of entry for independent and interacting variables	Beta	R^2 change	df
Hypothesis 15				
Task focused coping				157
1.	*Demographic variables*		0.05**	153
	Age	.007		
	Gender	-.318**		
2.	*Independent variable*		0.112**	154
	Challenge	-.335**		
3.	*Independent variable and the moderator*		0.19**	153
	Challenge	-.344**		
	Emotional self awareness	-.082		
4.	*Independent variable, moderator and interaction term.*		0.18**	150
	Age	.073		
	Gender	- 234**		
	Challenge	-.314**		
	Emotional self awareness	-.089		
	Challenge X emotional self awareness	-.130		

* p<.05

** p<.01

*** p<.001

Table 9. Moderation effects of emotional management on challenge appraisal and task focused coping

Dependent variable	Order of entry for independent and interacting variables	Beta	R^2 change	df
Hypothesis 16				
Task focused coping				157
1.	*Demographic variables*		0.05**	153
	Age	.007		
	Gender	-.318**		
2.	*Independent variable*		.011**	154
	Challenge	-.335**		
3.	*Independent variable and the moderator*		0.20**	153
	Challenge	-.266**		
	Emotional management	-.311**		
4.	*Independent variable, moderator and interaction term.*		0.25**	150
	Age			
	Gender	.029		
	Challenge	.228**		
	Emotional management	-.275**		
	Challenge X emotional management	-.300**		
		-.066		

* p<.05

** p<.01

*** p<.001

Table 10. Moderation effects of understanding others' emotions on social support coping and challenge appraisal

Dependent variable	Order of entry for independent and interacting variables	Beta	R^2 change	df
Hypothesis 17				
Social support				157
1.	*Demographic variables*		0.05**	153
	Age	.003		
	Gender	-.227**		
2.	*Independent variable*		0.006	154
	Challenge	-.080		
3.	*Independent variable and the moderator*		0.06	153
	Challenge	-.004		
	Understanding others emotions	-.254		
4.	*Independent variable, moderator and interaction term.*		0.10	150
	Age	.009		
	Gender	-.915*		
	Challenge	-.016		
	Understanding others emotions	-.180		
	Challenge X understanding others emotions	-.093		

* p<.05

** p<.01

*** p<.001

CHAPTER SEVEN

Conclusions and recommendations

7. Discussion

The purpose of the present study was to investigate Lazarus and Folkman's (1999) model of stress within the workplace setting. The aim was to identify whether coping strategies mediated the relationship between primary appraisal affective outcomes, and whether EI functioned as a mediator or moderator variable in the stress process. The findings, limitations, and future implications of this study, will be outlined below.

7.1. Demands

The present research identified different types of workplace demands. Respondents predominantly consisted of European, tertiary educated, professional staff, and for this group relationships at work were the most frequently identified demand. This finding is consistent with previous research findings which have identified that negative interaction with co-workers, employees, clients and supervisors are the most frequently reported sources of workplace stress (Cooper, 1998). Matthews, Roberts and Zeidner (2003) suggest that this demand is manifested by low trust, low supportiveness, and low interest in listening to and trying to deal with problems that confront organisational members and when these interpersonal relations are not satisfactory, stress follows. Low EI may increase this source of stress because EI encompasses an individual's ability to understand the emotions of others and to modify their behavior to best manage the situation (Matthews, Roberts & Zeidner, 2003). Future research should investigate whether EI moderates an individual's experience of relationships at work.

7.2 Appraisal, coping, affective responses and EI

The more a demand is appraised as a threat the less likely the use of task focused coping and the less positive affect was experienced. Conversely, challenge appraisal was associated with more use of task focused coping (but not social support) and more positive affect. This suggests that different factors are associated with the positive and negative outcomes of the stress process. This research finding should be further investigated in future research.

With regard to EI, understanding others' emotions was positively related to challenge appraisal, task focused coping, social support and positive affect, suggesting that higher levels of understanding others' emotions is associated with positive outcomes. Emotional management was positively associated with challenge appraisal, task focused coping (but not social support) and positive affect. Emotional management was negatively associated with avoidance, negative affect and threat appraisal. The ability to manage one's own emotions seems therefore to play an important role in appraisal and coping with work related stress. Emotional management and understanding other's emotions were positively correlated with each other.

Emotional self awareness played less of a role in stress. It was associated positively with negative affect but with no other variables in the stress process, although it did correlate positively with understanding others. The management of emotions of oneself and others seems to be the key aspect of EI for successful negotiation of workplace demands.

7.1.3 Coping as a mediator of primary appraisal and affective response

As expected, coping partially mediated the relationship between primary appraisal and affective outcomes. Findings indicated that the effect of challenge appraisal on positive affect was mediated in part by adaptive processes of task focused coping, while the impact of threat appraisal on negative affect was partially mediated by maladaptive avoidance strategies. The amount of variance in the DV accounted for the IV and mediator together ranged from 14% -62 %, indicating the need to examine other possible mediating factors. Social support did not play a mediating role, nor was it related to any of the primary appraisal or affective variables.

Social support had no relationship with the primary appraisal and affective responses. This may be because the four item measure of social support was not a constructually valid measure of social support within a workplace setting (Matthews, Roberts, & Zeidner, 2003). Social support, in the workplace setting may include speaking to a mentor or coach, sharing ones feeling with colleagues or seeking advice from a supervisor (Matthews, Roberts & Zeidner, 2003). Findings supported the hypothesis

that social support would be related to the ability to understand emotions. However, this was a weak significant correlation; alternative measures of social support in the workplace may provide a more accurate reflection of bivariate relationships between social support, the stress process and EI. Researchers may need to investigate alternative measures of social support using items which reflect the types of social support avalible at work.

7.1.4 EI as a mediator

Two dimensions of EI, the ability to understand others' emotions and emotional self awareness, did not mediate the relationship between primary appraisal and coping. As the ability to understand others' emotions did correlate with the variables under study, future research will need to test this with an improved measure of social support. Emotional self awareness did not have clear relationships with the variables under study and did not play a major role in the stress process in this study.

Emotional management had a partial mediating affect on the relationship between challenge appraisal and task focused coping. An individual's capability to manage their emotional reaction to stressful situations at work has significant relationships with other aspects of the stress process (Slaski & Cartwright, 2003). The ability to manage emotions directly impacts on the ability to function effectively at work as well as to manage stress (Matthews, Roberts, & Zeidner, 2003).

7.1.5 EI as a moderator

EI is an individual difference variable which impacts on the stress process. Individual differences have been hypothesised to act as moderators of the stress process. Present research did not support the moderation role of EI at all but it did suggest that EI functions as a mediator instead.

Future research may also need to investigate the role of EI on the relationship between secondary appraisal (coping) and affective outcomes. Emotional management, emotional self awareness and the ability to understand others' emotions may in fact mediate the impact of coping on affect. For instance those who engage in avoidance behaviours may feel less negative affect if they are able to regulate their emotions.

7.2 Implications for research

Limitations in the research included; limitations in measures of EI, omission of other moderating or mediating variables and lack of data on outcomes other than the immediate affective responses.

The limitation in measures of EI reflects the lack of sufficient construct validity. This in turn has implications for EI's predictive validity. The concept of EI has had minimal research conducted in an organisational context (Dulewicz & Higgs, 2000). Most of the current research has stemmed largely from instruments that were developed for a clinical context, such as the BarOn EQI. Also, most of the applications in organisational contexts are based on derivative arguments (Plake & Impara, 2001). The lack of predictive and criterion validity raises the question of whether EI can be used to predict anything in an organisational context (Dulewicz & Higgs, 2000). Again, this refers back to the construct validity, as poor conceptualisation of the constructs that we are measuring will lead to a lack of ability to predict performance (Mayer, 2002). The construct validity of EI needs to be addressed in terms of the theoretical model before it can be used for predicting or inferring individual performance at work.

Environmental and situational variables such as social pressures, family demands, work constraints or cultural factors, were not included in the present research and could influence the stress process (Lazarus, 1999). Future research may need to measure these additional environmental and situational variables as well as individual differences.

This research is limited in that it investigated only immediate affective responses of the stress process (Lovallo, 2005). However, the stress process also includes long term health outcomes and effects. Future research into the stress process should take a longitudinal approach and investigate the long term outcomes associated with the stress process such as health implications or long term affective outcomes (Lazarus, 1999).

7.3 Implications for Practice

This research is beneficial to individuals and organisations as it recognises the importance of both stress and emotions in the workplace. The research only supported partial mediation for coping and emotional management: however, these findings provide insight into the nature of the stress process in terms of the relationships between appraisal, coping, individual differences and affective outcomes. The implication of investigating stress as a process is that it provides results that can be interpreted with respect to implications for individuals, and it will lead to relevant theories and a greater understanding of the coping process for individuals in the workplace (Lazarus, 1999).

There are also associated benefits of research into EI and occupational stress. Current, research supports the notion that EI is a 'learned ability', which implies that EI can be developed (Salaski & Cartwright, 2002). Emotional management's partial mediating effect on the appraisal and coping relationship may provide a justification for developing an individual's ability to manage emotional reactions to stressful situations, to reduce negative affective outcomes. Emmerling and Goleman, (2003) indicate that EI abilities can be significantly improved and that these improvements can be sustainable over time.

An interesting aspect of EI is that it has been shown to increase with age and maturity, therefore it is suggested that through practice and commitment EI can be learned and enhanced (Salaski & Cartwright, 2002). Research by Sala (2004) found that 110 participants' scores on a measure of EI improved significantly after an EI development program was implemented. Within a managerial learning context, the view is emerging that although emotional capabilities are developed during childhood, these are 'plastic abilities' and thus capable of being developed and changed (Dulewicz & Higgs, 2000). There is support for the notion that EI can be developed, consequently any research into the effects of EI on an individual's experience of occupational stress is warranted. Future research needs to examine alternative measures of EI and alternative relationships of EI within the stress process.

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9. Appendices

Appendix A: Email sent to candidates

Emotional intelligence and occupational stress research

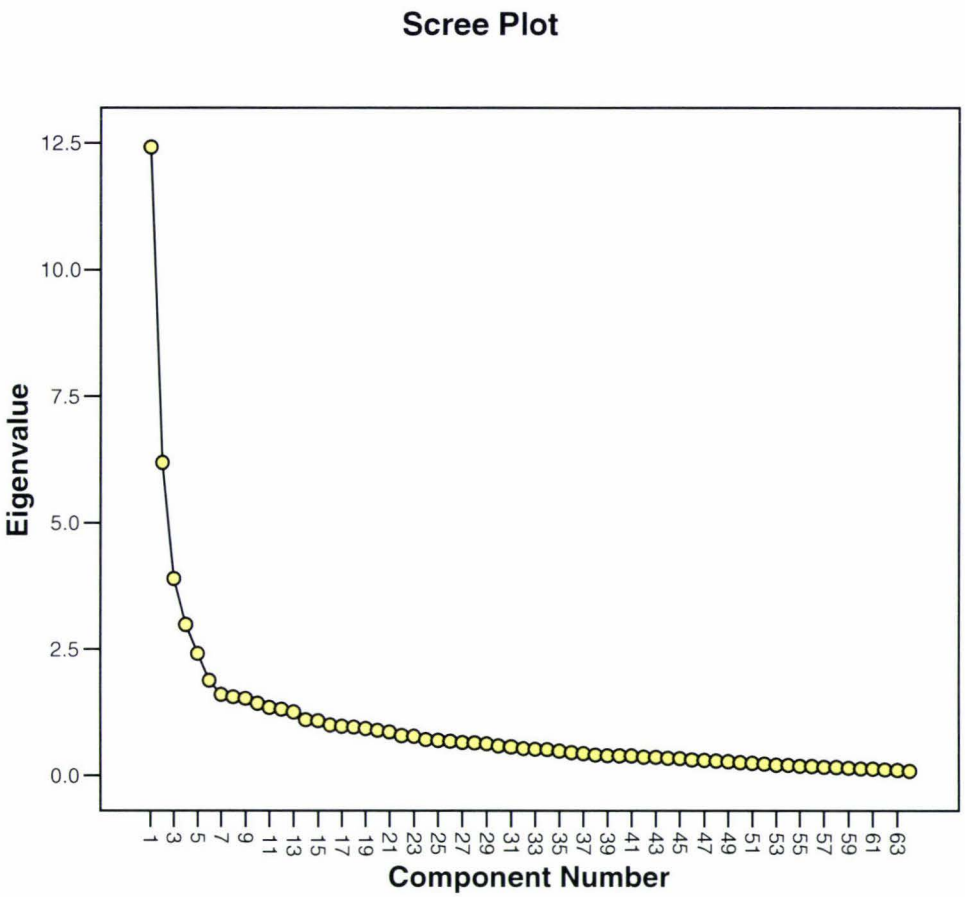
My name is Michelle King. I am currently a student at Massey University, completing the Masters programme in Industrial and Organisational Psychology. I work for Sheffield Consulting and Massey University, as a research assistant.

The aims of this research project are to investigate emotional intelligence and occupational stress.

Please find attached a short survey. It takes 20 -25 minutes to complete. I would appreciate it very much if you would complete it. Your agreement to assist with this survey is voluntary and all individual responses will be kept confidential. You can refuse to take part, or withdraw from the project at any time without penalty or prejudice. If there are questions in this survey that you do not wish to answer, please leave those answers blank. If you have any questions or would like to be know more about the research, please contact Michelle King [redacted] or [redacted]

This project has been reviewed, judged to be low risk, and approved by the researcher and supervisor under delegated authority from the Massey University Human Ethics Committee. If you have any concerns about the conduct of this research, please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Ethics and Equity), telephone 06 350 5249, email humanethics@massey.ac.nz If you have any questions about this research, I will be pleased to answer them.

Appendix B: EI scree plot



Appendix C: Brief COPE scree plot