

**Does Emotional Intelligence influence Work Related Stress among  
Irish Civil Servants**

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## Abstract

The author's objective was to establish if Emotional Intelligence (EI) influences work related stress among Irish Civil Servants. EI is the ability to perceive, understand and regulate one's own feelings and emotions along with those of others essential for daily functioning. Work related stress is the perceived inability to cope due to an imbalance between demands and resources, leading to fatigue, irritability and poor communication which can challenge interpersonal and intrapersonal functioning. Stress management through EI helps workers re-appraise workplace demands helping them cope. Schutte *et al.* (1998) Assessing Emotions Scale (AES) was employed to measure EI within the Irish Civil Service. A customised self-reported questionnaire obtained participants socio-demographic information pertaining to gender and age. An adapted Occupational stress Index (OSI) developed by Srivastava and Singh (1981) was used to measure perceived occupational stress levels among Irish Civil Servants, determining whether EI is a mediating factor of work related stress. It is suggested that occupational stress scores reflect levels of EI influenced by one's ability to adapt and cope through the appraisal, regulation, management and utilisation of emotions rather than what a job entails. Contrary to empirical research the inferences drawn indicated that the null hypotheses were accepted. H01: Global EI does not correlate with perceived occupational stress among Irish Civil Servants. H02: Global EI does not predict perceived occupational stress when accounting for age and gender. Further exploration was done using the three components of occupational stress; role ambiguity, role overload and role conflict. Age was the only variable factor which significantly contributed to role ambiguity, rejecting H02. It is suggested that Human Resource Management evaluate the organisational role structure to mitigate any risk of occupational stress. Employees could develop self-focused EI as it is believed to have positive effects on psychological and physiological occupational well-being.

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## **List of Abbreviations**

AES: Assessing Emotional Intelligence Scale	
DPER: Department of Public Expenditure and Reform	
EI: Emotional Intelligence	
GEC0: Geneva Emotional Competence	
HMR: Hierarchical Multiple Regression	
HR: Human Resources	
HRM: Human Resource Management	
MSCEIT: Mayer-Salovey-Caruso Emotional Intelligence Test	
OSI: Occupational Stress Index	
RO: Role Overload	
REIS: Rotterdam Emotional Intelligence Scale	
TOS: Total Occupational stress	
TSST: Trier Social Stress Test	

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## **Background**

This study concentrates on Irish Civil Servants within various departments and locations throughout Ireland responsible for performing specialist administrative tasks while dealing with the general public on an ad-hoc basis. The Civil Service is a bureaucratic structure comprising of eighteen government departments with approximately 38,000 civil servant workers. The majority of civil servants are clerical officers managed by front-line Executive Officers who report into Higher Executive Officers that ensure all operations comply with policy circulars. Any short-comings filter through to Assistant Principals and Principal Officers. All transactions are executed in compliance with policy to ensure fair processing.

From a Human Resource (HR) perspective, employee attendance is very important to ensure appropriate allocation of resources and ultimately the efficient and effective functioning of a department. Officers who exceed and are in breach of absence thresholds are sanctioned and potential pay implications apply. In the event that an employee is certified with work related stress the case is escalated to the Chief Medical Officer (CMO) who instruct Human Resources (HR) on the sensitivity of the case. If the CMO concludes that an officer is suffering from work related stress the officer will remain on half rate of pay even though they may have exceeded absence thresholds (DPER 2014).

## Chapter 1

### Introduction

#### **Emotional Intelligence (EI)**

EI is one's ability to deal with personal and social complexities, 'the elusive common sense and sensitivity' essential for daily functioning. EI enables one to adapt and survive in the very volatile and uncertain world that we live, which is a very sought after skill in the world of work (LinkedIn 2020b; Carthy *et al.* 2016: 516).

#### **Stress**

Stress is experienced when one perceives an imbalance between their abilities and the resources available to meet the environmental demands and constraints placed upon them. The perceived inability to cope has psychological and physiological effects such as elevated heart rate and anxiety. Cognitive training has been highly recommended enabling one to adapt and cope. Employers are obliged by law to take reasonable steps to evaluate risk factors which could contribute to work related stress and take reasonable action. Job analysis and organisational structural assessments are important to ensure adequate expectations and support mechanisms are in place (Florea and Florea 2016; Ongori and Agolla 2008).

#### **Absenteeism**

Work related stress is the second most common condition affecting 28% of the workforce within the European Union and is increasing continuously costing 185-269 billion euros annually causing 50 - 60% absenteeism (Florea and Florea 2016). According to Fahey *et al.* (2018) Ireland reported below average work related stress in comparison to other European countries. However, it has increased significantly doubling from 8% in 2010 to 17% in 2015, with emotional demands, mistreatment such as bullying and harassment exceeding the European average of 19%. According to ESRI (2018) the increase was due to emotional demands on workers in the health, public administration and manufacturing sectors mainly due to austerity measures.

CIPD (2019) suggest absenteeism levels have increased for over 20% of Irish organisations due to work related stress. Non-work related commitments such as caring for dependents contributes to over 38% of stress related absences emphasising that HR need to implement more holistic policies. Stankeviciute and Savaneviciene (2019) suggest that a more pluralistic



Human Resource Management (HRM) perspective needs to be fostered as the polarities of profit and employee well-being are not mutually exclusive. Therefore striking a balance through employee engagement can engender sustainable HR practices whilst reducing absenteeism and enhancing the overall culture of an organisation.

### **Sustainable Human Resource Practice**

Darcy *et al.* (2013) suggest that organisations could focus on the softer issues to encourage sustainable organisational citizenship, recognising that employees are a firm's greatest asset whose emotions and decisions need to be respected to encourage engagement and commitment for sustainable business growth. Rizwan *et al.* (2014) suggest EI is the ability to perceive, understand and control one's own and the emotions of others, which improves social interactions and strengthens employee relations which reduces turnover intentions. Furthermore, it has been suggested that one must be aware of cultural differences when measuring EI as participants may fear retaliation for exposing their true feelings which was validated by a study conducted by Jordan and Troth (2010).

Absenteeism levels have decreased by 0.7 to 8.8 days per each public servant in Ireland costing the exchequer an estimated 341.5 million euros which has decreased significantly by 167 million euros since 2013. This has been influenced by the 2014 reform on the public service Sick Leave Scheme which revised the disciplinary policy and introduced managed attendance and also implemented support networks and training for line management and HR (DPER 2018). The Civil Service employee assistance service (CSEAS) is a free and confidential support available to civil servants helping them manage work-life concerns which could affect their overall health and well-being if left untreated (CSEAS 2019).

Stankeviciute and Savaneviciene (2019) suggest work related stress is subjective depending on employee's perception therefore this study will focus on whether EI influences work related stress within the Irish Civil Service. The information gathered should give an accurate representation of work related stress, particularly when public service policies are pluralistic in perspective unlike many unitarist multinational enterprises (MNE) which may account for the 38% concealment of stress related absences resulting from unsupportive or non-family-friendly leave policies (CIPD 2019). Bulak (2018) suggest that managerial support is the strongest predictor of personal well-being having a positive relationship on stress and coping

among Irish civil servants. This study aims to understand and gain insight into one's own ability to cope through EI particularly when work demands are considered reasonable.

## Chapter 2

### Literature Review

#### **Emotional Intelligence (EI)**

EI is the ability to perceive, understand and regulate one's own feelings and emotions along with those of others which help inform decisions, behaviours and actions, contributing to effective communication. It is considered very important within organisations particularly for HRM as it contributes to job satisfaction, higher team performance, stress management, improved interpersonal relations and transformational leadership (Mortillaro and Schlegel 2019; Pekaar *et al.* 2019a; Saini 2018; Côté *et al.* 2017).

#### **Evolution of EI through Social Intelligence**

EI evolved through Thorndike's 1920 concept of social intelligence which was differentiated from other forms of intelligence, characterised by the ability to understand and manage people by behaving wisely during human interactions. Influenced by the perceptions of one's own or other's state of mind and motives (Thor and Johnson 2011; Mayer and Salovey 1993). Weschler 1958 (cited in Mayer and Salovey 1990) was also very influential advocating that general intelligence involved an understanding of the world along with the ability to cope when faced with uncertainty requiring more than just intellect (Kaufman and Kaufman 2001). Stifneos 1972 scientific research centred around the inability to recognise, understand and describe emotions referred to as 'alexithymia' (cited in Muller 2000). Ekman 1973 and many others resurrected Darwin's concepts whereby human expressions of certain emotions are universal leading to cognitive appraisals. The role of emotions as communication signals are widely accepted and vary depending on cultures making EI more distinct to social intelligence (cited in Mayer *et al.* 2008).

#### **Interpersonal and Intrapersonal Intelligence**

In 1983 Gardner (1993) believed in 'multiple intelligence' expanding the perspective of traditional intelligence. One being 'Personal intelligence' characterised by the ability to process information about oneself and others, categorised by 'interpersonal' (social) and 'intrapersonal' (emotional) behaviour (p. 37). Mayer and Salovey (1990: 189) labelled their concept 'EI' which is a 'subset of social intelligence' focusing on the ability to recognise one's own and others' emotional states to solve problems and regulate behaviour (Thor and Johnson

2011). Mayer and Salovey (1990) were not the first to define EI, in 1986 the academic Wayne Payne used the expression EI which went unpublished (cited in Ashkanasy and Daus 2005; Petrides and Furnham 2001).

### **The Concept of EI**

EI was defined by Mayer and Salovey (1990) as ‘the ability to monitor one’s own and other’s feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions’ (pp. 189 – 190). The processes are interrelated which include appraising and expressing emotions in oneself and others, regulation of emotions in oneself and others and using emotion in adaptive ways. Capacity to process emotions differs among individuals and skills can be learned to improve these differences which may contribute to one’s mental well-being. Thor and Johnson (2011) assert that the model included elements of empathy, flexibility, creative thinking and motivation similar to mixed models. Therefore, a ‘schism’ developed with other researchers describing EI as a mix of dispositions such as optimism and self-esteem which queried the incremental validity and the empirical construct of EI (Mayer *et al.* 2008: 503; Ashkanasy and Daus 2003).

### **Concept of EI grounded in scientific theory**

Thor and Johnson (2011) emphasise that Mayer and Salovey (1997) model of EI offers a unique perspective focused on abilities rather than personal characteristics associated with mixed models making it a very valid construct of EI. The re-defined four branch model is very coherent which includes accurately perceiving emotions in oneself and others, use of emotions to facilitate thinking, understanding emotions, ‘emotional language and the signals conveyed by emotions’ and the management of emotions to attain specific goals. Each of these four processes differ for individuals and so too do the scores when testing a participant’s ability. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) ability measure of EI spans these four areas, the construct has great independence to the big five personality traits unlike mixed models which ‘overlap’.

The validity of the EI construct is reliant on the ability of one to ‘engage in sophisticated information processing’ regarding one’s own and others’ emotion and the ability to interpret emotions which enrich decisions and relationships (Mayer *et al.* 2008: 503-510). Schlegel and Mortillaro and Schlegel (2019) suggest each component is distinct but correlates unlike the facilitation of thought branch. Empirical research found no distinction between it and

emotional understanding or management making it redundant (Mortillaro and Schlegel 2019; MacCann *et al.* 2014; Joseph and Newman 2010). Mayer *et al.* (2016) concur suggesting the facilitation of thought was an unreliable component of the MSCEIT construct, as other abilities such as emotional understanding enable one to reason and solve problems.

### **Mixed Models**

Goleman's (cited in Mayer *et al.* 2008) popular book on EI included theories developed by Mayer *et al.* however they had no involvement in Goleman's composition of EI and actively critiqued them as their findings did not tally with assertions that almost '90%' of the difference between great work performance was dependent on EI (p. 504). However, EI was already proving popular in the public domain, viewed by Bar-On (2006) as encompassing many emotion related characteristics and competencies enabling one to cope and adapt to environmental pressures. Mayer *et al.* (2008) did not agree because mixed models overlap with personality variables unlike ability models grounded by a strong cognitive EI concept.

### **Ability Vs Trait EI**

Petrides and Furnham (2000) proposed a broader definition of EI 'trait EI and information-processing EI', defining the measurement rather than the theory. Ability EI or 'Information-processing EI' is much more objective comparable to traditional intelligence measuring maximal rather than typical performance and cannot be faked (p. 314). Petrides and Furnham (2001) suggest 'trait EI is concerned with cross-situational consistencies in behaviour' prevalent to the personality framework assessed using self-report inventories measuring typical performance (p. 314). The Trait EI approach draws on personality variables such as optimism, impulsivity and empathy along with vaguer correlations such as motivation, self-awareness and happiness (Jonker and Vosloo 2008). Petrides and Furnham (2001) defined trait EI as behavioural dispositions and self-perceptions of one's ability to recognise and process emotions, suggesting the non-cognitive traits are related to successful coping. Mayer *et al.* (2008) suggest that these concepts are not theoretically sound particularly when trait theory refers to inherited characteristics and neither mixed nor trait models justify the reason for including only some traits and not others apart from their ability to predict success. Locke (2005) has reservations and views such approaches as invalid, not only do they undermine ability EI but also subvert the standard scientific language in psychology. The renaming of personality traits to EI blur personality theory and its reputable scientific practice. Instead EI should begin and end where 'other personality approaches pick up' (Mayer *et al.* 2008: 513).

### **Indiscriminate use of the label EI**

Locke (2005); Ashkanasy and Daus (2003); Matthews *et al.* (2002) stress that there are too many broad definitions of EI not resembling the scientific framework, undermining it as a variable by those who use it indiscriminately. Bar-On (2006) suggest the Emotional Quotient Inventory (EQ-i) construct has proven to be a very robust model for predicting human performance and behaviour across cultures. Those who possess higher EI tend to be more optimistic which has a positive relationship with physical health. Intrapersonal skills and self-actualisation abilities improve psychological health eliminating stress and depression. Petrides and Furnham (2001) also formed models of social effectiveness and well-being, despite the overlap between personality traits and EI, emphasising that the theoretical power of a psychological construct is more important than incremental validity. Mayer *et al.* (2008) concur but assert that it is imperative to separate ‘the valid work from the hype’ (Murphy and Sideman 2006: 287). The discriminant validity of EI must be protected, researchers must not cross the scientific framework without providing a rational reason for revising the definition of EI. Limited to the ‘abilities involved in reasoning about emotions and using emotions to enhance reasoning’ (Mayer *et al.* 2008: 514).

### **Streams to classify EI**

Ashkanasy and Daus (2005) classify EI using streams one, two and three which are determined by the underlying theory of a measure. Stream one is ability based on the scientific model which objectively measures maximal performance testing an individual’s understanding and functioning of emotion (Hill *et al.* 2019).

#### **Stream 1 - The MSCEIT and Geneva Emotional Competence Test (GECe):**

The MSCEIT and the GECe are both valid constructs based on Mayer and Salovey (1997) theoretical framework evaluating one’s ability to accurately perceive emotions in oneself and others, use of emotions to facilitate thinking, understanding emotions, ‘emotional language and the signals conveyed by emotions’ and the management of emotions to attain specific goals (Mortillaro and Schlegel 2019; Mayer *et al.* 2008: 506-510). Each of these four processes differ for individuals and scores on the MSCEIT are determined by answers relative to the correctness of consensus based scoring on the ‘normative sample of the general population’. The measure has good ‘discriminant validity’ along with having good internal consistency making it ‘the best benchmark’ for EI (Thor and Johnson 2011; Mayer *et al.* 2008: 506-510).

Mortillaro and Schlegel (2019) suggest the GEC<sub>o</sub> test is a new performance based ability model, measuring only three of the original four branches ‘emotion recognition, emotion understanding, emotion regulation in the self and emotion management in others’ relative to the workplace (pp. 574-575). A comparison between scores obtained from the GEC<sub>o</sub> and MSCEIT found positive correlations between social relations and career adaptability. There was a significant correlation between the GEC<sub>o</sub> and academic achievement highlighting its ability to predict performance. There was a negative correlation between the MSCEIT and grades, with the exception of emotional understanding which is based on cognitive ability (MacCann *et al.* 2014). The other branches rely on consensus based scoring relative to the normative sample which may explain the negative correlation between grades. Maul (2012); Fiori (2009) suggest the fear associated with consensus based scoring is that it depicts the most popular answer rather than recognising participants with higher ability thus being biased. The GEC<sub>o</sub> test improved the psychometric quality of each branch through theory based item development based on expert consensus ensuring the measurements precision and internal consistency via item response theory. The GEC<sub>o</sub> construct is a valid ability construct as it correlated with all subsets and the total score of the MSCEIT.

Both tests have the ability to predict outcomes even though they differ due to the type of consensus scoring adopted. There was a negative correlation between grades and regulation, suggesting those with good regulation skills found exams less stressful and therefore spent less time and effort studying. The ‘curse of emotions’ whereby reappraising, refocusing on positives and through the use of acceptance strategies impacts maximal performance. It is suggested that regulation predicts career adaptability surpassing the MSCEIT and other personality and intelligence tests. Regulation alludes to ‘typical performance’, while the other subtests measure ‘maximal performance’ (Mortillaro and Schlegel 2019: 574). O’Boyle *et al.* (2011) suggest testing maximal performance via ability tests is not a true reflection of typical performance. The GEC<sub>o</sub> employs situational judgement frameworks whereby vignettes are based on realistic experiences making it an ecologically valid construct. The scores assess all components of the model gauging typical behaviour and performance thus enabling participants to recognise areas for improvement (Mortillaro and Schlegel 2019).

### **Stream 2 – Perceived EI Self-report – Assessing Emotions Scale (AES)**

Stream two uses perceived self-reported or peer-reported questionnaires measuring typical behaviour influenced by Mayer and Salovey’s work. The Assessing Emotions Scale (AES)

was employed in the present research and is often referred to differently within academic literature. Various names include the EI Scale (EIS), the Schutte Self-Report Inventory (SSRI) and the Schutte Self-Report EI (SSREI) scale. Despite the inconsistent naming conventions they all refer to the same measure which is based on Mayer and Salovey's (1990) three branch model measuring EI (Kun *et al.* 2010; Schutte *et al.* 2008).

### **Validity of AES measure**

The AES has good discriminant validity distinct from traditional cognitive intelligence. High EI scores correlated significantly with openness to experience and insignificantly with other personality traits (Schutte *et al.* 1998). Petrides and Furnham (2000) concur but suggest there may be psychometric problems because the method employed orthogonal rotation which is known to prevent the emergence of a general factor. Suggesting the method failed to realise Mayer and Salovey (1990) concept having three clear interrelated factors. Emphasising that it is impossible to regulate emotions before appraising emotion cautioning the use of this unidimensional model. Saklofske *et al.* (2003) confirmed that the global one factor structure is acceptable. O'Connor and Anthota (2013) concur asserting that the method and development of the AES construct has good predictive validity, considering the components evaluated are core factors of EI.

### **Factor analysis under scientific scrutiny**

The popular application of the AES has led to its factor structure coming under scientific scrutiny (Kun *et al.* 2010; Gignac *et al.* 2005; Austin *et al.* 2004; Petrides and Furnham 2000). Using confirmatory factor analysis testing one, three, four and six factor solutions, results confirmed that the three factor structure had good internal consistency (Kun *et al.* 2010).

However, Gourzoulidis *et al.* (2015) measured EI among Greek hospital workers using the AES 3 factor measure influenced by Kun *et al.* (2010). The results were satisfactory, the Cronbach's alpha exceeded Nunnally (1978) recommended minimum of 0.7 for factor one and three however factor two did not meet the recommended minimum for 'optimism/regulation of emotions' resulting in '0.645'. High correlations showed good discriminant validity, however indiscriminate validity occurred where the second factor had insignificant internal consistency. The three factors accounted for '95.8%' of the variance in the global factor which is considered insignificant if only 24 of the 33 items of the AES construct are used.



### **Erosion of the AES 33-items**

Jonker and Vosloo (2008) investigated the psychometric properties of the AES and concluded that deletions of items for model-fit improvement would sacrifice its parsimony. Indicating that the elimination of correlating items may erode the meaning of the EI construct, particularly when weaknesses are assumed in the measurement but are due to other factors such as the interpretation of questions. This was evident in the analysis of homogenous groups of students, those with fluent English scored significantly higher in the AES than those who had it as a second language. The deletion of item 33 due to a score of '0.6' and not meeting the recommended Nunnally's (1978) guide could not be justified. It is suggested that the AES is translated into other languages which are easily interpreted to avoid any erosion.

### **Stream 3 - Bar-On EQ-i Measurement**

Stream three includes mixed or Trait EI models consisting of expanded components not represented by Mayer and Salovey model, measuring typical behaviours in emotion-relevant situations (Hill *et al.* 2019). Bar-On (2004) believes that emotional social intelligence (ESI) is a more appropriate construct primarily due to the influence Thorndike had on Mayer and Salovey (1990) conceptualisation. The Emotional Quotient Inventory (EQ-i) was drawn from the existing theory on ESI defined as:

A cross-section of interrelated emotional and social competencies.....that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands (Bar-On 2006: 3).

However, social Intelligence is a broad concept which overlaps with personality traits unlike Salovey and Mayer's (1990) model of EI involving the manipulation of emotional content giving it discriminant validity (Thor and Johnson 2011; Mayer and Salovey 1993). Van Rooy *et al.* (2005); Van Rooy and Viswesvaran (2004) assert that the Bar-On EQ-i has an insignificant overlap with cognitive ability and personality traits which does not justify being labelled as a mixed model. The EQ-i may measure more than just emotional social intelligence because competencies improve with age, evident in longitudinal survey (Bar-On 2003). Many factors need to be considered when measuring human behaviour as it is influenced by a range of predictable and unpredictable conditions. Emotional social intelligence is something that can be improved upon with sufficient training which is evident when EQ-i scores increase within a short-duration (Bar-On 2006).

### **Limitations of Mixed Models**

Ashkanasy and Daus (2003) assert that the Bar-On approach is used extensively in the commercial field for determining areas of development. However, it is not a valid measurement of EI because it is too broad in scope and does not differ from personality models. No scientific measure was ever developed for social intelligence unlike Mayer and Salovey's (1997) distinct measure of EI. Landy (2005) objects to the notion of EI as a valid construct due to the lack of scientific research and Goleman (1995) advocates that EI is a form of social intelligence. Locke (2005) does not view Mayer and Salovey's (1997) model as being distinct from mixed models, believing that one cannot reason with emotion. However, Mayer (2000) emphasise the role of emotional circuits in the brain are distinct from both social intelligence and intellectual intelligence. One can have high intellectual intelligence with the ability to function logically at certain things such as ability tests and driving. However, if their brain is damaged simple decisions can prove challenging as one cannot reason with emotion. Somatic states shape the cognitive thought process involving comparisons and judgements, suggesting that one does in fact reason with emotion (Damasio 1994). Ashkanasy and Daus (2005) emphasise that EI is neither a new form of social intelligence nor a substitute for intellectual intelligence. Intellect is a good predictor of individual performance but EI is an important function of group performance (Jordan and Troth 2004; Offerman *et al.* 2004). Emotions are important for developing and maintaining social relations (Ashkanasy and Daus 2003).

### **Other vs Self focused EI**

Pekaar (2019b) acknowledge self-focused and other-focused emotional management may impact different life domains. Managing oneself has a positive influence on both mental and physical well-being. Managing the emotions of others facilitates positive social interactions and these outcomes reflect the underlying reason for differentiating between the two. Pekaar *et al.* (2019a) suggest if one has high EI the feeling of stress and strain is reduced through self-regulation. Therefore, self-focused EI is believed to have positive effects on psychological and physiological occupational well-being. High EI may cause physiological arousal even though the ability to regulate emotions would imply that EI regulation acts as a buffer. It is suggested that those with high EI are more sensitive to emotions increasing the need for regulation which is physiologically costly. However, physiological arousal experienced is usually short-term replenished through emotional regulation supported by 'electroencephalogram patterns that signal mental effort' (p. 452). It is suggested that those with low EI may be ineffective at regulating emotions which prolong the physiological arousal causing strain. Allen *et al.* (2017)

suggest chronic long term stress is detrimental to one's health contributing to neuropsychiatric disease. Acute short-term stress is important as it enables one to respond to stimuli however, it can be 'dysregulated by chronic stress'. Stress has increased within the workplace requiring better understanding of the neurobiology of stress and interventions suitable to improve one's resilience.

### **Neurobiology of Stress and the dominant force of Emotion**

Austin (2019) suggest stress is usually psychological occurring when people feel threatened. Pekaar *et al.* (2019a) elude to the concept that 'performing and feeling well at work may be associated with various psychological processes' (p. 7). LeDoux (2000) suggest the synaptic systems in the brain underlie and regulate cognition, emotion and motivation in humans. Emotions are a dominant force which ignite the amygdala without recognising or regulating cognition. Different emotions evoke various responses, it is suggested that when humans perceive a threatening situation the thalamus by-pass the cortex alarming the amygdala before the cortex has time to processes the information in a more rational manner. The amygdala is genetically wired to perceive fear as threatening and therefore does not wait for any signals from the cortex. Hence, peptides and stress hormones are released into the blood stream causing physiological changes such as increased heart rate, high blood pressure preparing one for fight or flight which may explain irrational impulsive behaviour in the workplace. Kunnanatt (2012) suggest an inability to regulate the emotional dominance of the amygdala results in low EI, which is often referred to as 'emotional hijacking' (Goleman 1995: 17).

### **Interventions which influence Neurobiological and Physiological effects of Stress**

Prenderville *et al.* (2015) suggest aging and chronic stress alter brain plasticity which impact the immune system. Kompier (2005) cautions the interpretation of cortisol, heart rate and skin conductance levels as they may play a role in other body functions. The aging effects of the 'Hypothalamic-Pituitary-Adrenal (HPA) axis' need to be considered whereby younger adults have higher cortisol levels than their seniors and 'salivary alpha amylase' increase with age (Allen *et al.* 2017). Hof (2019); Kox *et al.* (2014) advocate that 'the sympathetic nervous system and immune system can indeed be voluntarily influenced' through practicing focused mediation, controlled breathing techniques and exposure to freezing conditions. These techniques enabled one to regulate the HPA axis thus controlling impulsive reactions, which may suggest that 'emotional hijacking' or fight or flight responses may be controlled through breathing techniques. Sufficient sleep and aerobic exercise can also empower brain

functioning. Sleep aids memory and removes ‘neurotoxins’, cardiovascular exercise can prevent ‘cognitive impairment’ and ‘heal cognitive damage’ caused by stress (Austin 2019: 972).

### **Occupational Stress**

The scientific investigation into work related stress is relatively new. Cannon (cited in Jex 1998) was one of the first physiologists to study the relationship between emotion and physiological responses. Despite the vast amount of occupational stress models and theories, there has been very little scientific progress due the methodological limitations. Models can only be regarded as ‘approximations’ because ‘any attempt to model human behaviour in any form is incomplete’ (Jex 1998: 3). Cox and Griffiths (1995) assert that the psychological approach is considered the most popular and respected concept, mainly because the engineering and physiological approaches view ‘people as passive vehicles for stimulus and response’ not accounting for the cognitive effects or situational factors which impact health and performance. The two distinct psychological models are referred to as ‘interactional or structural approaches’ and ‘transactional or process models’ (p. 4).

### **Interactional models**

Lewin (cited in Jex 1998) believed in interactional psychology whereby behaviour is a function of the interaction between the person and the situation or the degree to which a person fits with the situation. Kristof *et al.* (1996) suggest that there are many dimensions of how fit could be measured. Strain could occur if a person had insufficient skills or abilities to meet the necessary job requirements however, strains due to boredom and lack of stimuli could occur if a person is over-qualified for a position. The person-environment model can also be viewed at a ‘macro level’ whereby one places higher value on family as opposed to career success or vice-versa. Stress can result from the differences between an employee’s values in comparison to organisational values especially company policies that are unitarist in perspective. Essentially interactional models focus on the structural characteristics of the stress model. Analysing the effects of stressors depending on different variables such as high demands being placed on workers with low control (Cox and Griffiths: 1995). Kahn *et al.* (cited in Singh and Dubey 2011) were the first to explore organisational stress focusing on role stress or a ‘system of roles’ categorised by ‘role ambiguity, role overload and role conflict’ (Katz and Kahn, cited in Singh and Dubey 2011: 43). These components originate within an organisational role

structure whereby ‘unclear expectations induce several role situations’ which ‘exert harmful effects’ on workers. (Singh and Singh 2010: 46-47).

### **Role Ambiguity**

Role ambiguity occurs when employees do not have clearly defined and understood job descriptions. If expectations are not clearly defined stress becomes a major concern (Arnold *et al.* 2016).

### **Role Overload**

Arnold *et al.* (2016: 405) suggest role overload can be ‘quantitative’ whereby too many demands are placed on an employee without enough time to satisfy the demands. ‘Qualitative overload’ refers to unrealistic demands being placed on an employee whereby they do not perceive themselves as having adequate skills to execute the demands. Role ‘underload’ may occur when an employee is under stimulated by monotonous work causing job detachment, inhibiting an employee’s psychological growth causing them to leave the organisation (Weinberg and Cooper 2007).

### **Role Conflict**

Role conflict occurs when incompatible demands are placed on an employee, which are not part of their job description or values. The inflexible nature of role conflict due to an employee’s lack of control on the situation creates long term tension and reduced job satisfaction (Singh and Dubey 2011). Role conflict can cause chronic stress and depression hence having significant impact on job satisfaction and turnover (Schmidt *et al.* 2014; Hughes 2001).

### **Risk Assessments**

Rani and Yadapadithaya (2018) suggest that stress at a reasonable level is not considered bad however, prolonged stress is a growing issue throughout many organisations which creates an unhealthy work environment. Stress leads to fatigue, irritability and poor communication which can challenge interpersonal and intrapersonal functioning. Singh and Dubey (2011) suggest role overload, role ambiguity and role conflict are negatively correlated to satisfaction with management and total job satisfaction. Occupational satisfaction is the positive feeling and attitude towards one’s job. Stress is a predominant predictor of work satisfaction ‘defined as a physiological and psychological reaction to relatively excessive demands made on a

person' (p. 43), which significantly impacts organisational performance, productivity, absenteeism and turnover. Employers have a duty of care of ensuring that demands placed on workers are reasonable, this can be achieved by doing risk assessments on the management systems (HSA 2018). However, because 'stress is more subjective than objective phenomena' the mediating variables are important to 'determine the extent of its subjectivity'. Coping as a mediating factor affects the extent and consequences of stress, allowing one to manage and tolerate 'taxing circumstances' (Singh and Singh 2010: 47).

### **Transactional Models**

Folkman *et al.* (1986) describe coping as a cognitive effort managed by reducing or tolerating both 'the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources (p. 572). Lazarus and Folkman's theory of psychological stress and coping often referred to as 'Cognitive Relational approach' is considered one of the most influential transactional theories. Both the individual and their environment coexist and mutually collaborate (cited in Suleman *et al.* 2018; Mark and Smith 2008: 10). The concept comprises of the ability to appraise and cope dynamically. The primary appraisal process is subjective where one assesses any perceived challenges to goal attainment, if the situation is perceived as being stressful the secondary appraisal occurs whereby one evaluates if any harm can be avoided. These mental and emotional processes form subjective perspectives of the environment. Personality differences and past experiences influence ones perception enabling one to adapt and cope appropriately (Mark and Smith 2008).

The inability to cope can have detrimental effects on an organisation and its incumbents, it has been suggested that 'problem focused' coping strategies are the most powerful. Problem focused responses through rationalisation can entail gathering data about the situation and learning new skills to solve the issue. 'Emotion focused' strategies could include managing and controlling feelings through relaxation procedures such as meditation (Singh and Singh 2010: 47). The utilisation of these strategies may alter ones perception of a situation, a challenge that undermined the appraiser may now be viewed as an opportunity (Pekaar *et al.* 2019a; Suleman *et al.* 2018; Park and Folkman 1997). Stress management interventions can only be effective if subjective perceptions are facilitated through independent direction because individual differences are inevitable (Lazarus 1991). Individuals have different traits and abilities making stress a subjective phenomenon, emphasising that it is not useful to make generalisations on stressful working conditions (Brief and George 1991). Lazarus (1993)

suggest physiological and psychological stress is dynamic depending on the environment and what one perceives to be psychologically stressful. Employee's priorities evolve over time and also change in response to global pressures. Therefore stress is perceived by employees depending on the complexities at a 'macro level' reflecting the popularity of perceived self-report measures of work related stress (Suleman *et al.* 2018; Jex 1998: 8).

### **Occupational stress Index (OSI)**

The OSI developed by Srivastava and Singh 1981 is a scale consisting of forty-six items, measuring perceived stress levels arising from various job conditions. The twelve dimensions relate to work life prone to stress: role overload, role ambiguity, role conflict, unreasonable group and political pressures, responsibility for persons, under participation, powerlessness, poor peer relations, intrinsic impoverishment, low status, strenuous working conditions and unprofitability (cited in Chhabra and Mohanty 2013). In the current study Singh and Dubey (2011) adapted method was employed whereby only three of the original twelve dimensions were measured. 'Role overload, role ambiguity and role conflict' corresponding with Katz and Kahn's 1966 definition of occupational stress (cited in Singh and Dubey 2011: 43).

### **Perceived Stress and EI as a moderating factor**

The OSI questionnaire is self-reported relying on the perception of the person being tested and it should be recognised that EI moderates and manages ones perception and ability to cope under stressful situations. Chhabra and Mohanty (2013) suggest that there are positive and negative affective outcomes from stress. Lazarus (1999) emphasise that stress and emotions are interdependent therefore, where one finds stress they also find emotion. Zeidner *et al.* (2006) assert that an EI framework could be implemented as a coping intervention within the workplace to help employees deal with stress. 'Stress is associated with impaired individual functioning in the workplace' (Singh and Dubey 2011: 47). Rani and Yadapadithaya (2018) suggest that stress management through EI helps workers re-appraise workplace demands helping them cope. High EI improves one's ability to predict and manage stress leading to job satisfaction influencing one's overall health and well-being, helping employees maintain work-life balance (Chhabra and Mohanty 2013).

### **Perceived Stress levels influenced by Organisational Culture**

A vast amount of research has been conducted and concluded that EI influences work related stress among the Indian population within a broad range of sectors like teaching, banking and

health care (Rani and Yadapadithaya 2018; Suraksha and Chhikara 2017; Chhabra and Mohanty 2013; Nikolaou and Tsaousis 2002). The ‘always on’ or 24/7 work culture is a growing concern affecting the mental health of the Indian workforce (Sindwani: 2019). The main drivers of employee burnout is lack of work-life balance due to role overload and the increasing pressure to perform. The fear of job loss due to advancements in artificial intelligence and the lack of management support contributes to sustained anxiety (LinkedIn, cited in Petrone 2019; Towers Watson 2019; Sindwani 2009). Suri and Arora (2009) employed the OSI and found a significant difference between the public and private work culture in India. Concluding that role overload and the constant focus on performance contributes to burnout within the private sector unlike the public sector that has fixed performance targets.

No research has ever been done to examine whether EI influences work related stress among Irish Civil Servants who work within many business functions. This project intends to fill this gap recognising that ‘the fundamental purpose of the public sector is government not management’. The Civil Service is pluralistic in perspective with supportive family-friendly policies as equity and social cohesion are paramount ‘to maintain confidence in the political system’ which may contribute to low levels of role conflict. One of the main advantages of the Irish Civil Service is security of tenure after the probation period elapses. Recruitment is unbiased done via open competitions however, there is limited succession planning which may create a weak person-environment fit contributing to occupational stress. Despite this, ‘agility’ is the buzz word whereby the public service strives to be ‘fit for purpose’ by adapting to technology and other forces of change like ‘ways of working’ in this very volatile world of work (O’Riordan 2019: 7-13).

The employer has a stake to play in employee wellbeing and a ‘constructive culture’ reduces role stress and organisational inefficiencies (Towers Watson 2019; Suri and Arora 2009: 87). Emotional Intelligence has been listed as a sought after soft skill enabling workers to cope during the Covid-19 pandemic (LinkedIn 2020a; LinkedIn 2020b). Emotional intelligence is important as it enables one to empathise with peers and adapt harmoniously viewing challenges as opportunities. If one has low EI they could become dissatisfied and withdraw due to a weak person-environment fit causing work-related stress (Chhabra and Mohanty 2013). In light of this the author raises the following research questions:



### *Chapter 3*

#### **Research Questions**

**Null hypothesis (H01):** Global Emotional Intelligence does not correlate with perceived Occupational stress among Irish Civil Servants.

**Alternative hypothesis (HA1):** Global Emotional Intelligence correlates with perceived Occupational Stress among Irish Civil Servants.

**Null hypothesis (H02):** Global Emotional Intelligence does not predict perceived Occupational Stress when accounting for age and gender among Irish Civil Servants.

**Alternative hypothesis (HA2):** Global Emotional Intelligence predicts perceived Occupational Stress when accounting for age and gender among Irish Civil Servants.

## *Chapter 4*

### **Methodology**

#### **Data Type and measurement employed**

The author contemplated gathering qualitative primary internal data however, due to the sensitive nature of the research the quantitative method was more appropriate. For the hypotheses in question cross-sectional research was conducted to observe and investigate the relationship between the independent variable perceived EI and the dependent variable perceived occupational stress while also accounting for the independent variables gender and age. Due to time constraints cross-sectional research was considered the most efficient and economical method for data collection. Two standard questionnaires were used measuring total EI and total occupational stress. The tools employed to collect data for the construct under consideration are reliable and validated scales which have been published and peer-reviewed. The measures were selected mainly because of their brevity in obtaining the required information in order to reach the optimal sample size. Both measures were also easily available free of charge for research purposes. A customised self-reported questionnaire obtained socio-demographic information pertaining to participant's gender and age which enabled investigation of the variable factors. All questions were mandatory in order to answer the hypotheses in question, the survey could not be submitted until all statements were answered.

#### **Population**

According to Pallant (2016) the sample size is very important in order to make generalisations of scientific value. Tabachnick and Fidell (cited in Pallant 2016) suggest using the formula ' $N > 50 + 8m$  (where  $m$  = number of independent variables)' when calculating an optimal sample size. In the present study the three predictors were age, gender and EI, the formula was applied whereby  $N > 50 + 8(3)$  (p. 151). This indicated that the optimal sample size needed was at least 75 Irish Civil Servant participants. A sample size of 87 participants was obtained giving the results sufficient power. This allowed the author to estimate the characteristics of the population and make generalisations of scientific value.

#### **Bonferroni adjustment**

The critical  $p$  value for determining statistical significance is traditionally  $p < .05$ . Stevens (cited in Pallant 2016) recommends adjusting the alpha level of .05 where small sample sizes

apply or where there is insignificant power. This was not applicable with sample size  $n = 87$ . However to prevent type two error, a ‘Bonferroni adjustment’ was applied to ‘judge statistical significance’, this limited any chances of an inaccurate significant finding. A ‘stringent alpha’ was achieved by dividing .05 by the number of proposed comparisons. Total occupational stress and its sub components total role ambiguity, total role overload and total role conflict were investigated. This required a Bonferroni correction which gave a new alpha level of .05 divided by 4 comparisons where  $p < 0.0125$ , which gave the true significance level of the variable in question (Pallant 2016: 211).

### **Type of Sample**

Due to the Covid-19 pandemic the proposed Civil Service department was under significant pressure. It was considered an inappropriate time to issue an e-mail requesting staff to partake in the survey. Due to the sensitivity of the matter the non-probability sampling method was eventually agreed upon whereby management approved distribution of the survey via a ‘WhatsApp’ message to Irish civil servants known to the author. As a result, a hybrid of convenience and snowball sampling methods were used. In effect this produced a random sample whereby a very diverse range of ages, genders and departments throughout Ireland participated in the survey. The sample was a fair representation of the population which allowed the author to draw accurate inferences from the data obtained (Loughnane 2019).

### **Measures**

The following measures were employed in the research:

#### **Occupational stress Index (OSI) (Srivastava and Singh, 1981)**

The OSI developed by Srivastava and Singh 1981 was used to measure perceived occupational stress. The original publication could not be located therefore a later version of the task developed by one of the original author’s was employed. Using Singh and Dubey (2011) adapted method only three of the original twelve dimensions of the OSI were measured. ‘Role overload, role ambiguity and role conflict’ corresponding with Katz and Kahn 1966 definition of occupational stress (cited in Singh and Dubey 2011: 43). Consequently, only fifteen of the total forty-six questions were included in the self-reported questionnaire which improved its brevity (see Appendix 1).

Eleven items were true keyed, rated via a five point Likert scale indicating the extent to which one agreed or disagreed with the statement. ‘5’ indicated strongly disagree, ‘4’ disagree, ‘3’

undecided, '2' agree and '1' strongly agree. The remaining four were false keyed requiring reverse scoring (14, 15, 36 and 38). The score for total role overload was derived by summing up the responses for statement number 1, 13, 25, 36, 44 and 46. Total role ambiguity was the sum of statements 2, 14, 26 and 37. Total role conflict was the sum of statements 3, 15, 27, 38 and 45. Finally total stress was calculated combining the sum of all three components. Total OSI scores were capable of ranging between 15 and 75, the highest rating indicated high levels of stress. Ramu (2012) suggest scores ranging from 15 to 38, 39 to 53 and 54 to 75 are estimates of low, moderate and high levels of perceived stress respectively. Low stress scores on the OSI correlated positively with attitudes, behaviour and personalities which had a significant moderating effect on occupational stress, determining its validity (Srivastava and Singh 1981, cited in Sharma 2012).

### Internal Consistency

The reliability index for the scale as a whole using 'split-half (odd-even) method' along with Cronbach's alpha was found to be '0.935 and 0.9' (Chhabra and Mohanty 2013; Srivastava and Singh 1981, cited in Sharma 2012: 210). Suleman *et al.* (2018) suggest the OSI is a widely acceptable measure of perceived occupational stress within different contexts, with an overall internal consistency of '0.872' confirming that it is exceptionally reliable. The reliability of the adapted three 'sub-scales was found to be 0.684 for role overload, 0.554 for role ambiguity and 0.696 for role conflict' which are slightly lower than Nunnally's (1978) recommended guide for internal consistency of 0.7 or higher (Singh and Dubey 2011: 45).

In the current study the adapted measure was used, the reliability of the three components was obtained relative to survey results. The Cronbach alpha coefficients for the three subscales was .764, .695 and .650 (see Table 1) with the mean inter-item correlation of .446, .267 and .256 for role ambiguity, role overload and role conflict respectively (see Table 2).

*Table 1: Reliability of adapted OSI*

<i>Total Role Ambiguity</i>			<i>Total Role Overload</i>			<i>Total Role Conflict</i>		
Reliability Statistics			Reliability Statistics			Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.764	.763	4	.695	.686	6	.650	.633	5

Table 2: Inter – Item Correlations

Total Role Overload:

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.267	-.011	.552	.563	-48.448	.021	6

Total Role Conflict:

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.256	.009	.446	.437	49.503	.025	5

The Cronbach alpha values for the subscales total role conflict and total role overload were slightly lower than Nunnally’s (1978) recommended guide. Role overload was the only scale that included a negative item in the inter-item correlation matrix, the reverse scoring was cross checked with no errors found. This was validated when no negative corrected-item total correlation values appeared on the item-total-statistics table (see Table 3).

Table 3: Corrected Item – Total Correlation with no negative value

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Role Overload 1	13.70	15.026	.258	.150	.698
Role Overload 2	14.90	10.512	.657	.471	.567
Role Overload 3	15.40	12.639	.416	.248	.658
Role Overload 4	15.60	13.290	.300	.128	.696
Role Overload 5	14.87	12.716	.364	.195	.676
Role Overload 6	15.30	11.375	.567	.356	.605

Pallant (2016) emphasise a Cronbach alpha of 0.7 or higher is difficult to achieve when scales have less than ten items making it ‘more appropriate to report the mean inter-item correlation’ (pp. 101-104). Briggs and Cheek ‘recommend an optimal range for the inter-item correlation of .2 to .4’ (cited in Pallant 2016: 101). Each sub-scale had less than ten items, role overload consisted of six with the mean inter-item correlation of .267 and .256 for role conflict which included five items. The sub scales were within the optimal range suggesting good internal consistency which made the measure acceptable in the present study.

### **Assessing Emotions Scale (AES) (Schutte *et al.* 1998)**

Perceived total EI was measured using Schutte *et al.* (1998) AES comprising of thirty-three items (see Appendix 2). It is a self-report measure of trait EI based on Mayer and Salovey's (1990) three branch model measuring global EI. All 33 items loaded on one factor encompassing all three components of Mayer and Salovey's (1990) concept. Thirteen items represent appraisal and expression of emotion, 10 items represent regulation of emotion and the ten remaining represent the utilisation of emotion. 30 items are true keyed rated via a 5 point Likert scale using '5' strongly agree, '4' somewhat agree, '3' neither agree nor disagree, '2' somewhat disagree and '1' strongly disagree. Three items (5, 28 and 33) are false keyed and reverse scored. Total EI was derived by summing up the scores for all 33 items. Total scores were capable of ranging between 33 and 165, with the highest rating indicating exceptionally high EI. There is no prescribed method for interpreting the scores obtained.

### **Validity of the AES**

The AES has excellent internal consistency with a Cronbach alpha of .87 and test-retest reliability of 0.78 confirming its reliability. The AES is a comprehensive and cohesive model with brevity which measures one's current state of EI (Schutte *et al.*, 1998). Mayer and Salovey's (1990) model provided a good foundation to evaluate various dimensions of EI development unlike Mayer and Salovey's (1997) preceding model which was more process oriented at an intellectual level. Mortillaro and Schlegel (2019); Pekaar *et al.* (2019a) suggest different instruments for measuring EI have limitations. Performance tests (Stream 1) or ability measures like Mayer and Salovey (1997) MSCEIT is indicative of one's ability to understand emotions however, they do not predict how one is likely to behave, making them valid but weak at determining work related attitudes and performance (Miao *et al.* 2017).

The AES is classified as stream two measuring typical behaviour, its accuracy may be affected by responses perceived as socially desirable impacting the validity of EI results (Hill *et al.* 2019; Mortillaro and Schlegel 2019; Pekaar *et al.* 2019a; Ashkanasy and Daus 2005). Schutte *et al.* (2008) suggest self-report measures of perceived EI may result in responses that are 'compliant with social norms' rather than participant's perception of their own 'emotional functioning' (p.10). However when confidential conditions are adopted 'tendencies towards normative responding does not seem to influence scores', furthermore scores on the AES did not correlate with scores on the social desirability scale (Kirk *et al.* 2007, cited in Schutte *et al.* 2008:10). In the present study the participants were anonymous and the AES was conducted

for research purposes only. This would suggest that the scores are accurate because nothing motivated participants to engage in faking their responses.

### **Google Forms**

The AES and OSI measures were inputted to Google forms as exact replicas of the original questionnaires. The instructions were changed slightly to suit the electronic method 'Please circle' was substituted with 'Please click on the button corresponding to '1'. A customised self-reported questionnaire was used to obtain participants gender and age. All questions were mandatory and participants were prompted if any statement had been skipped. An introduction was entered on the first page of Google forms which stated the objective of the survey. The participants were also assured of their anonymity and the survey was confidential for research purposes only. Each participant was required to give consent for use of their data. On completion of all three sections (AES, OSI, customised self-report) the participants were required to submit responses, their entry was confirmed by a thank you message.

### **Pilot survey**

Prior to distributing the survey a pilot survey was conducted with six participants. Survey results were gathered via Google forms and stored securely. An excel sheet was set up to sum up the scores for each variable being investigated, a formula was also set up to ensure all false keyed items were translated correctly. All of the translated data was entered in SPSS software once the corresponding variables were set up. SPSS was employed to generate descriptive statistics and explore the relationship between variables using t-tests and multiple regression. Participants did mention that the phrasing of some questions on the OSI and AES were open to interpretation and needed to be changed. However, the author advised that the integrity of the survey had to be maintained, as the reliability and validity of the measure could not be compromised. It was reported that the pilot survey took on average 6 minutes to complete. Management approved dissemination of the survey via WhatsApp due to the pandemic. The National College of Ireland agreed that the survey could be distributed via WhatsApp provided the survey was issued on an individual basis which was complied with.

### **Procedure**

Expression of interest to participate in the survey was generated via the WhatsApp online messaging service explaining the objective of the survey, a link to the survey was included. In agreement with management all correspondence was approved before dissemination.

Convenience sampling was used whereby it was sent to colleagues and any other known contacts within the Civil Service. All participants were assured of their anonymity in compliance with general data protection regulation. Later in the week the author employed the snowball sampling method by issuing a reminder encouraging contacts to forward the message to their acquaintances. A very diverse and optimal sample size of at least 75 Irish civil servants was achieved.

### **Screening and Cleaning Data**

When a week had elapsed, the survey data was downloaded from Google forms. The survey data was converted from csv to excel file format which allowed formatting to commence. The ratings for the AES, OSI and customised questionnaire were entered into a pre-prepared template. The template was an excel sheet which had formulas set up enabling reverse scoring and calculation of all items pertaining to total EI, total role ambiguity, total role overload, total role conflict and total stress scores. It was later discovered that reverse scoring could have been applied in SPSS however, having the sum of both independent and dependent variables pre-calculated was a more streamlined method enabling more efficient use of the scales. The data was cross-checked and organised in alignment with the SPSS file format.

### **SPSS**

All of the variables were set-up in SPSS, which had already been prepared when pilot analysis was done. The translated data was entered into SPSS and preliminary analysis was done. The sample was analysed using descriptive statistics to obtain basic data relating to the characteristics of the population considering the dependent variable occupational stress and the independent variable EI, age and gender. Inferential statistics included techniques such as correlation and multiple regression which explored the relationship among independent and dependent variables. An independent t-test was conducted to compare the mean scores of the dichotomous variable, males were defined by '0' and females '1'. The statistical techniques employed enabled the author to test the hypotheses in question, to establish relationships between variables and differences when accounting for age and gender. In the present study inferential tests included a probability value (p-value). The critical p value for determining statistical significance was  $p < .05$  or  $p < 0.0125$  when a Bonferroni correction applied. When the probability of the null hypotheses were less than 5% or 1.25% they were rejected and the alternative hypotheses were accepted as being statistically significant. Indicative of having



95% confidence in the results obtained. In the present analysis if significance value is .00 the p value is presented as  $p < .01$  and so forth (Pallant 2016).

### **Limitations of Methodology**

The data gathered was very subjective using the AES and OSI as both were perceived self-report measures. The AES was based on Mayer and Salovey's (1990) concept of EI however because it is a self-report measure of perceived trait – EI responses may have been 'compliant with social norms' rather than participants perception of their own 'emotional functioning' (Schutte *et al.* 2008: 10). Consistent with literature the null hypotheses in question may have been rejected if more objective measures were used. The MSCEIT and the GEC0 were considered as both are valid constructs based on Mayer and Salovey's (1997) theoretical framework which cannot be faked (Hill *et al.* 2019).

The author could not gain access to the MSCEIT without incurring costs. After submitting a proposal to the Swiss National Science Foundation the author gained authorisation to use the GEC0 for research purposes only free of charge. The impartial nature of the GEC0 through theory based scoring made it the preferred option for measuring EI. Even though Hill *et al.* (2019) suggest some ability measures fail to 'discriminate' between typical and maximal performance, it has been suggested that the regulation subtest of the GEC0 measures typical performance while the other subtests measure maximal performance (Mortillaro and Schlegel 2019; Freudenthaler and Neubauer 2005). Arnold *et al.* (2016) suggest that trait and ability concepts tend to pigeonhole people which become more unpredictable depending on the situation one finds themselves in. This makes it difficult for researchers to draw inferences on personality traits. Therefore, one's behaviour is very dependent on situational factors or the demands on one's environment and their ability to cope. Situational judgement frameworks evoking realistic workplace scenarios evaluate each subset of the GEC0 making it ecologically valid (Mortillaro and Schlegel 2019).

Due to some technical limitations, the AES was chosen instead because of its brevity. The GEC0 could only be administered via the vendors Qualtrics platform, this did not facilitate the measurement of occupational stress which needed to be combined on one platform. It was also feared that the optimal sample size may not have been achieved because the GEC0 takes 'about 50 minutes to complete', which may have risked answering the hypotheses in question (Emmerling 2020). Mortillaro and Schlegel (2019) suggest that GEC0 scores may reflect

cultural differences depending whether behaviour is considered adaptive or maladaptive to social norms. It is unlikely that cultural context in question would have been impacted, therefore the questionnaire would not require alteration.

The present study also lacked insight into the dimensions of EI such as dealing with the emotions of self and others. The 28-item Rotterdam Emotional Intelligence Scale (REIS) is one of the few self-report questionnaires enabling one to evaluate self and other focused EI dimensions separately (Pekaar *et al.* 2018). The GECO could also be used for evaluating emotional recognition, understanding, regulation of emotion in oneself and emotional management of other's separately within working contexts (University of Geneva 2018). Future studies could use the GECO in conjunction with the REIS to draw inferences and validate findings.

Singh and Dubey's (2011) adapted three dimensional OSI method was also very subjective as it relied on self-reported perceived occupational stress. Chhabra and Mohanty (2013) suggest self-report measures can be biased depending on one's motivation of obtaining a lower occupational stress rating. The implications of stress using the OSI are effective and a longitudinal study would need to be done to assess the long term implications of stress and strain. According to Shukla *et al.* (2016) the OSI was developed originally for the Indian population however due to globalisation and a lack of work-life balance suicide has increased among the Indian population making the OSI out-dated. A new construct measuring job stress has been developed which includes dimensions such as time stress, anxiety, role conflict, co-worker support and work-life balance. These characteristics were recommendations made after surveying Indian employers who ranked stress as a major risk factor and an ongoing priority (Towers Watson 2019). However, ratings from the self-reported subjective stress survey did not match the objective statistics impacting the validity of the survey (Shukla *et al.* 2016).

Future studies could examine physiological measures of stress which may be more objective and less biased by subjective opinion. Allen *et al.* (2017) suggest the Trier Social Stress Test (TSST) is a valid and reliable, measuring acute physiological and psychological stress responses under experimental conditions which are standardised. Stress is induced in an ecologically valid environment making it a very realistic and objective measure. Effects are scientifically measured and accurately interpreted (Kompier 2005). It has been suggested that longitudinal research may be more appropriate when evaluating results particularly when

effects vary depending on age and other dispositions. Genetics, education and work-experience may be underlying factors contributing to acute stress responses (Allen *et al.* 2017). One of the main barriers conducting research using the TSST is time and money. The author would be reliant on scientific technical expertise to analyse biometric data which may be difficult to obtain due to general data protection regulation. Participants may be hesitant to allow their organisation gain personal biometric data for fear of retaliation, which would hinder reaching an optimal sample size of sufficient power.

## Chapter 5

### Analysis and Findings

#### Descriptive Statistics

The sample consisted of 87 Irish Civil Servant participants 32 of which were male and 55 female, all participants completed the questionnaires measuring EI and occupational stress. Data pertaining to department and location was not obtained however, due to the sampling method employed the sample is representative of departments nationwide.

Table 4: Sample n87

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	32	36.8	36.8	36.8
	Female	55	63.2	63.2	100.0
	Total	87	100.0	100.0	

37% of participants were males and 63% female (see Table 4 and 5), their age ranged between 25 and 63 years with the mean age of 43 years and a standard deviation of 10. Descriptive statistics calculated on the basis of all participants responses, indicate that total occupational stress scores ranged between 20 to 59 with a mean score of 40 and a standard deviation of 9. Total EI scores ranged between 94 to 158 with a mean score of 125 and a standard deviation of 15 (see Table 5).

Table 5: Age, Total EI and Stress scores

Descriptive Statistics						
	N	Range	Minimum	Maximum	Mean	Std. Deviation
Age	87	38	25	63	43.05	9.842
Total Stress	87	39	20	59	40.45	9.092
Total Emotional Intelligence	87	64	94	158	125.68	14.997
Valid N (listwise)	87					

Prior to conducting the primary analysis a series of histograms, scatter plots and descriptive statistics were generated which met the assumptions of normality, linearity and homoscedasticity regression (see Appendix 3). On inspection of the scatter plot the data points for the independent variable EI and the dependent variable occupational stress were widely distributed indicating a very low correlation (see Figure 1 and 2). There was no evidence of a curvilinear relationship making it appropriate to calculate a Pearson product-moment correlation which assumes a linear relationship for the two variables (Pallant 2016).

Figure 1: Low Correlation between EI and occupational stress

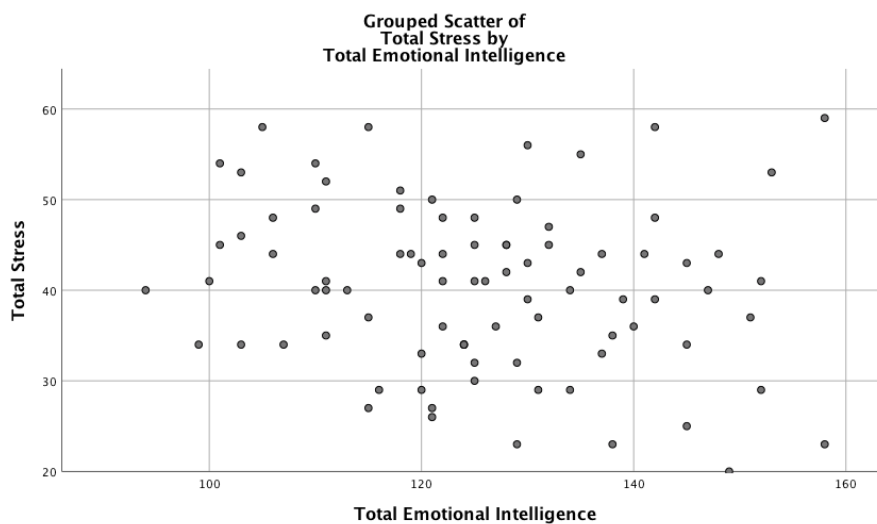
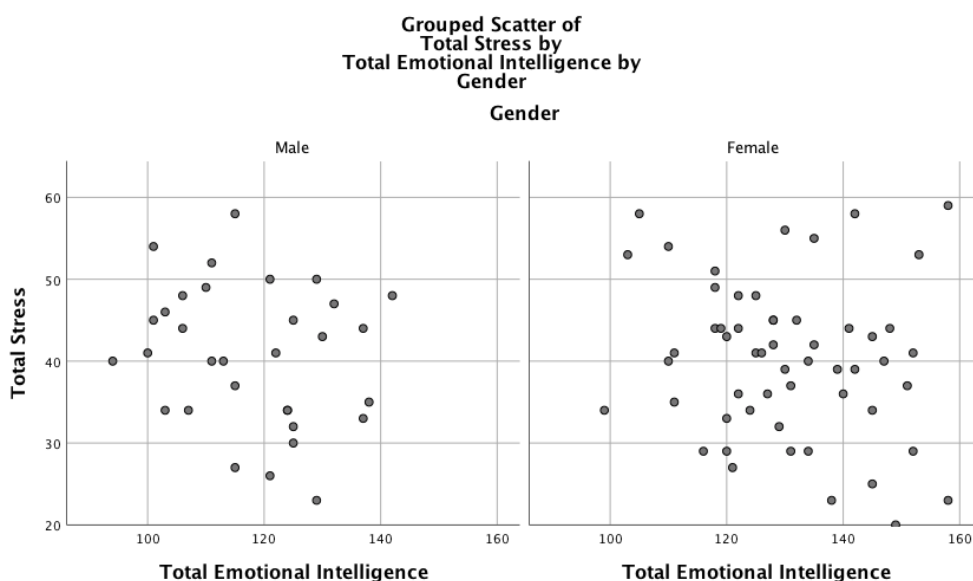


Figure 2: Correlation by Gender



## Correlation

The relationship between perceived EI measured using Schutte's *et al.* (1998) AES and perceived occupational stress measured using Srivastava and Singh (1981) OSI was investigated using Pearson product-moment correlation coefficient  $p < .05$ . Preliminary analyses was performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a weak, positive correlation between the two variables,  $r = -.170$ ,  $n = 87$ ,  $p < .116$ , suggesting high EI is not associated with low levels of stress. Indicating that  $H_0$  is true and  $H_{A1}$  is false for the population  $n=87$  (see Table 6).

Table 6: Pearson Correlation

Correlations			
		Total Stress	Total Emotional Intelligence
Total Stress	Pearson Correlation	1	-.170
	Sig. (2-tailed)		.115
	N	87	87
Total Emotional Intelligence	Pearson Correlation	-.170	1
	Sig. (2-tailed)	.115	
	N	87	87

The correlation coefficient was  $-.162$  which is considered a small correlation, suggesting a weak relationship between the two variables (Cohen 1998, cited by Pallant 2016). The coefficient of determination was only 2.89% when  $r = -.170$  indicating a very low variance between EI and occupational stress. Emphasising that the relationship between the dependent variable occupational stress and the independent variable EI was insignificant with  $p < .116$  (see Table 6 and 7).

Table 7: Correlation coefficient

### ➔ Nonparametric Correlations

Correlations				
		Total Stress		Total Emotional Intelligence
Spearman's rho	Total Stress	Correlation Coefficient	1.000	-.162
		Sig. (2-tailed)	.	.134
		N	87	87
	Total Emotional Intelligence	Correlation Coefficient	-.162	1.000
		Sig. (2-tailed)	.134	.
		N	87	87

## Independent T-test

An independent-samples t-test was conducted to compare the global EI scores obtained from Schutte's *et al.* (1998) AES self-report measure for males and females (see Table 8). There was a significant difference in scores for males (M = 117.88, SD = 12.80) and females (M = 130.22, SD = 14.38;  $t(85) = -4.014, p = .00$ , two-tailed).

Table 8: T-test

### T-Test

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Total Emotional Intelligence	Male	32	117.88	12.806	2.264
	Female	55	130.22	14.387	1.940

The magnitude of the differences in the means (mean difference = -12.34, 95% CI: -18.45 to -6.22) was large (eta squared = 0.159), indicating 16% of the variance in EI is explained by gender. The T-test results are consistent with general assumptions from findings suggesting a significant correlation between gender and EI when  $p < .01$  (see Table 8 and 9).

Table 9: Mean Differences

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total Emotional Intelligence	Equal variances assumed	.200	.656	-4.014	85	.000	-12.343	3.075	-18.457	-6.229
	Equal variances not assumed			-4.140	71.206	.000	-12.343	2.981	-18.287	-6.399

$$\text{Eta squared} = 16\% \frac{T^2}{T^2 + (N1 + N2 - 2)} = \frac{-4.014 \times -4.014}{-4.014 \times -4.014 + (32 + 55 - 2)} = 0.159$$

## Hierarchical Multiple Regression to determine if EI predicts Total Occupational Stress

Hierarchical multiple regression was used to assess the ability of Schutte's *et al.* (1998) AES self-report measure of perceived EI to predict levels of perceived total occupational stress obtained from Srivastava and Singh OSI, after controlling for the influence of participants gender and age. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. Using a Bonferroni adjusted

alpha level of  $p < .0125$  gender and age were entered at step 1, explaining 2.7% of the variance in total perceived stress. Total EI was entered, at step 2 the total variance explained by the model as a whole was 6.3%,  $F(3, 83) = 1.850$ ,  $p < .145$ . The EI measure explained an additional 3.6% of the variance in stress, after controlling for age and gender,  $R^2$  change = .036,  $F$  change  $(1, 83) = 3.202$ ,  $p < .078$  which was insignificant (see Table 10 and 11).

Table 10:  $R^2$  change = .036,  $F$  change  $(1, 83) = 3.202$ ,  $p < .078$

Model Summary <sup>c</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.163 <sup>a</sup>	.027	.003	9.077	.027	1.144	2	84	.324
2	.250 <sup>b</sup>	.063	.029	8.960	.036	3.202	1	83	.077

a. Predictors: (Constant), Age, Gender  
b. Predictors: (Constant), Age, Gender, Total Emotional Intelligence  
c. Dependent Variable: Total Stress

Table 11: Model as a Whole  $F(3, 83) = 1.850$ ,  $p < .145$

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.464	2	94.232	1.144	.324 <sup>b</sup>
	Residual	6921.053	84	82.393		
	Total	7109.517	86			
2	Regression	445.574	3	148.525	1.850	.144 <sup>c</sup>
	Residual	6663.943	83	80.288		
	Total	7109.517	86			

a. Dependent Variable: Total Stress  
b. Predictors: (Constant), Age, Gender  
c. Predictors: (Constant), Age, Gender, Total Emotional Intelligence

In the final model the control variables were also statistically insignificant with EI holding a higher beta value (beta = -2.08,  $p < .078$ ) followed by age (beta = -.178,  $p < .099$ ) and gender (beta = .057,  $p < .625$ ) (see Table 12). This would suggest that H02 is true and HA2 is false for a population of n87.



Table 12: Significance Values – Total Occupational Stress

Model		Coefficients <sup>a</sup>					Correlations			Collinearity Statistics	
		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	47.152	4.576		10.303	.000					
	Gender	-.488	2.018	-.026	-.242	.809	-.025	-.026	-.026	1.000	1.000
	Age	-.149	.099	-.161	-1.494	.139	-.161	-.161	-.161	1.000	1.000
2	(Constant)	62.736	9.810		6.395	.000					
	Gender	1.069	2.174	.057	.492	.624	-.025	.054	.052	.840	1.191
	Age	-.165	.099	-.178	-1.671	.098	-.161	-.180	-.178	.992	1.009
	Total Emotional Intelligence	-.126	.071	-.208	-1.790	.077	-.170	-.193	-.190	.834	1.200

a. Dependent Variable:  
Total Stress

### Analysis of the three components of Total Occupational Stress

Hierarchical multiple regression was used to assess the ability of Schutte’s *et al.* (1998) AES self-report measure of perceived EI to predict levels of perceived occupational stress. Considering the three components of total role ambiguity, total role overload and total role conflict obtained from Srivastava and Singh OSI, after controlling for the influence of participants gender and age. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

### Hierarchical Multiple Regression to determine if EI predicts Role Ambiguity

Using a Bonferroni adjusted alpha level of  $p < .0125$  gender and age were entered at step 1, explaining 9% of the variance in total role ambiguity. Total EI was entered, at step 2 the total variance explained by the model as a whole was 13.3%,  $F(3, 83) = 4.237, p < .009$ . The EI measure explained an additional 4.4% of the variance in total role ambiguity, after controlling for age and gender,  $R$  squared change = .044,  $F$  change  $(1, 83) = 4.200, p < .045$  which was insignificant (see Table 13 and 14).

Table 13:  $R$  squared change = .044,  $F$  change  $(1, 83) = 4.200, p < .045$

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.298 <sup>a</sup>	.089	.067	3.148	.089	4.100	2	84	.020
2	.364 <sup>b</sup>	.133	.101	3.090	.044	4.200	1	83	.044

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Total Emotional Intelligence

c. Dependent Variable: Total Role Ambiguity

Table 14: Model as a Whole  $F(3, 83) = 4.237, p < .009$

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.256	2	40.628	4.100	.020 <sup>b</sup>
	Residual	832.422	84	9.910		
	Total	913.678	86			
2	Regression	121.347	3	40.449	4.237	.008 <sup>c</sup>
	Residual	792.332	83	9.546		
	Total	913.678	86			

- a. Dependent Variable: Total Role Ambiguity
- b. Predictors: (Constant), Gender, Age
- c. Predictors: (Constant), Gender, Age, Total Emotional Intelligence

In the final model age was the only variable of statistical significance with (beta = -.310,  $p < .004$ ). EI with beta value (beta = -.229,  $p < .045$ ) and gender was statistically insignificant (beta = .024,  $p < .834$ ) (see Table 15). This would suggest that H02 is false and HA2 is true for a population of n87.

Table 15: Significance Values – Role Ambiguity

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	13.961	1.587		8.796	.000					
	Age	-.096	.034	-.291	-2.791	.007	-.290	-.291	-.291	1.000	1.000
	Gender	-.456	.700	-.068	-.652	.516	-.067	-.071	-.068	1.000	1.000
2	(Constant)	20.114	3.383		5.946	.000					
	Age	-.103	.034	-.310	-3.020	.003	-.290	-.315	-.309	.992	1.009
	Gender	.159	.750	.024	.212	.833	-.067	.023	.022	.840	1.191
	Total Emotional Intelligence	-.050	.024	-.229	-2.049	.044	-.193	-.219	-.209	.834	1.200

- a. Dependent Variable: Total Role Ambiguity

### Hierarchical Multiple Regression to determine if EI predicts Role Overload

Using a Bonferroni adjusted alpha level of  $p < .0125$  gender and age were entered at step 1, explaining .2% of the variance in total role overload. Total EI was entered at step 2, the total variance explained by the model as a whole was .3%,  $F(3, 83) = .096, p < .963$ . The EI measure explained an additional .1% of the variance in total role overload, after controlling for age and

gender, R squared change = .001, F change (1, 83) = .101,  $p < .753$  which was insignificant (see Table 16 and 17).

Table 16: R squared change = .001, F change (1, 83) = .101,  $p < .753$

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.047 <sup>a</sup>	.002	-.022	4.178	.002	.094	2	84	.910
2	.059 <sup>b</sup>	.003	-.033	4.201	.001	.101	1	83	.752

a. Predictors: (Constant), Gender, Age  
 b. Predictors: (Constant), Gender, Age, Total Emotional Intelligence  
 c. Dependent Variable: Total Role Overload

Table 17: Model as a Whole  $F(3, 83) = .096, p < .963$

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.300	2	1.650	.094	.910 <sup>b</sup>
	Residual	1466.517	84	17.459		
	Total	1469.816	86			
2	Regression	5.075	3	1.692	.096	.962 <sup>c</sup>
	Residual	1464.741	83	17.647		
	Total	1469.816	86			

a. Dependent Variable: Total Role Overload  
 b. Predictors: (Constant), Gender, Age  
 c. Predictors: (Constant), Gender, Age, Total Emotional Intelligence

In the final model the control variables were also statistically insignificant with age holding a higher beta value (beta = .043,  $p < .695$ ) followed by EI (beta = -.038,  $p < .753$ ) and gender (beta = .007,  $p < .956$ ) (see Table 18). This would suggest that H02 is true and HA2 is false for population of n87.

Table 18: Significance Values – Role Overload

Model		Coefficients <sup>a</sup>										
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	17.156	2.107		8.144	.000						
	Age	.020	.046	.047	.428	.670	.047	.047	.047	1.000	1.000	
	Gender	-.071	.929	-.008	-.077	.939	-.009	-.008	-.008	1.000	1.000	
2	(Constant)	18.451	4.599		4.012	.000						
	Age	.018	.046	.043	.394	.694	.047	.043	.043	.992	1.009	
	Gender	.058	1.019	.007	.057	.955	-.009	.006	.006	.840	1.191	
	Total Emotional Intelligence	-.010	.033	-.038	-.317	.752	-.039	-.035	-.035	.834	1.200	

a. Dependent Variable:  
Total Role Overload

### Hierarchical Multiple Regression to determine if EI levels predict Role Conflict

Using a Bonferroni adjusted alpha level of  $p < .0125$  gender and age were entered at step 1, explaining 4% of the variance in total role conflict. Total EI was entered at step 2, the total variance explained by the model as a whole was 10.4%,  $F(3, 83) = 3.221$ ,  $p < .028$ . The EI measure explained an additional 6.5% of the variance in total role conflict, after controlling for age and gender,  $R$  squared change = .065,  $F$  change  $(1, 83) = 5.984$ ,  $p < .018$  which was insignificant (see Table 19 and 20).

Table 19:  $R$  squared change = .065,  $F$  change  $(1, 83) = 5.984$ ,  $p < .018$

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.199 <sup>a</sup>	.040	.017	3.522	.040	1.737	2	84	.182
2	.323 <sup>b</sup>	.104	.072	3.422	.065	5.984	1	83	.017

a. Predictors: (Constant), Gender, Age

b. Predictors: (Constant), Gender, Age, Total Emotional Intelligence

c. Dependent Variable: Total Role Conflict

Table 20: Model as a Whole  $F(3, 83) = 3.221, p < .028$

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.085	2	21.543	1.737	.182 <sup>b</sup>
	Residual	1041.811	84	12.403		
	Total	1084.897	86			
2	Regression	113.149	3	37.716	3.221	.027 <sup>c</sup>
	Residual	971.748	83	11.708		
	Total	1084.897	86			

a. Dependent Variable:  
Total Role Conflict

b. Predictors: (Constant),  
Gender, Age

c. Predictors: (Constant),  
Gender, Age,  
Total Emotional Intelligence

In the final model the variables EI, age and gender had an insignificant contribution with EI holding a higher beta value (beta = -.278,  $p < .018$ ) followed by age (beta = -.223,  $p < .037$ ) and gender (beta = .116,  $p < .309$ ) (see Table 21). This would suggest that H02 is true and HA2 is false for a population of n87.

Table 21: Significance Value – Role Conflict

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	16.035	1.776		9.031	.000					
	Age	-.072	.039	-.199	-1.863	.066	-.199	-.199	-.199	1.000	1.000
	Gender	.039	.783	.005	.050	.961	.006	.005	.005	1.000	1.000
2	(Constant)	24.170	3.746		6.452	.000					
	Age	-.080	.038	-.223	-2.134	.036	-.199	-.228	-.222	.992	1.009
	Gender	.852	.830	.116	1.026	.308	.006	.112	.107	.840	1.191
	Total Emotional Intelligence	-.066	.027	-.278	-2.446	.017	-.213	-.259	-.254	.834	1.200

a. Dependent Variable:  
Total Role Conflict

## Chapter 6

### Discussion

Research investigating whether EI influences work related stress had not been done within the Irish Civil Service before. Various perspectives portray those with high levels of EI tend to behave positively, determining both physical and mental wellbeing along with overall life success (Kun *et al.* 2010). Statistical techniques were employed to explore the relationship between the variables, there was a weak positive correlation between the independent variable EI and the dependent variable occupational stress. The results were insignificant H01 was accepted and HA1 was rejected, suggesting high EI is not associated with low levels of stress which is inconsistent with literature.

Even though some participants reported having high scores for both perceived EI and perceived stress, these scores were not removed because no violation of the assumptions of normality, linearity and homoscedasticity occurred. Pallant (2016) suggests the sample n87 is considered a medium size which may have affected results when  $p < .05$  was not obtained. Therefore, the confidence intervals were also considered for the correlation coefficient  $-.162$  which was also insignificant (see Table 7). The 'true value' of  $-.162$  had to range between  $-0.367$  and  $0.042$  or  $-0.042$  and  $0.108$  for 95% or 99% confidence levels respectively (Vassarstats 2020; Pallant 2016: 138). This highlights the weakness in the relationship further which may suggest that the measures used are valid but weak as they relied on subjective perceived self-reported data pertaining to ones level of EI and occupational stress (Miao *et al.* 2017).

Sandhu (2017) findings differed from the present study with a negative correlation between occupational stress and EI within the Indian population. Sandhu (2017) had a sample of 40 pharmaceutical participants with mean scores of 67 and 44 for EI and occupational stress respectively. Results ranged at 50 and 54 in comparison to the present study ranging at 64 and 39 for EI and occupational stress respectively (see Table 5). The present study had a greater variation in EI scores however the Indian sample had a greater variation in occupational stress scores which may be due to the 'always on' work culture prevalent amongst the Indian workforce (Sindwani: 2019). Sandhu (2017) used self-reported EI and occupational stress measures but did not specify the type employed. Shukla *et al.* (2016) cautions the use of self-reported scales within the Indian culture as ratings observed differed greatly to the objective statistics obtained. Jordan and Troth (2010) suggest cultural differences need to be observed

as participants may fear retaliation for exposing their true feelings. The measures employed in the present study were valid but weak which may have contributed to the lack of significant findings however the generalisations made had sufficient power. Sandhu (2017) did not obtain an optimal sample size of at least 58 participants considering Tabachnick and Fidell 1993 formula ' $N > 50 + 8m$  (where  $m$  = number of independent variables)' (cited in Pallant 2016: 151). This questions the validity of their findings however, Sandhu (2017) concluded that emotionally intelligent workers will also experience stress in the workplace. This is consistent with Pekaar *et al.* (2019a) who found those with high EI are more sensitive to emotions causing physiological arousal, increasing the need for regulation which is physiologically costly. Even though the ability to regulate emotions would imply that EI regulation acts as a buffer. Which may explain why some participants with high EI also reported high scores for perceived occupational stress. Future research could explore the relationship between the dimensions of EI and occupational stress using the Rotterdam Emotional Intelligence Scale (REIS). The Geneva Emotional Competence (GEC) is ability based which evaluates regulation of emotion in oneself and emotional management of other's separately which may strengthen and validate the results further (University of Geneva 2018).

On inspection of the scatter plot the data points representing females were distributed more evenly in comparison to those representing males suggesting the likelihood of a negative correlation. However, it was evident that some women reported high levels of EI and stress (see Figure 2). It may have been useful to obtain qualitative data seeking clarification on what was triggering high levels of perceived stress or if any interventions had been adopted to help reduce levels of stress. The survey was conducted during the Covid-19 pandemic, the majority of participants were working from home which may have impacted perceived stress levels. Some colleagues casually mentioned the pressure of working from home whilst trying to home-school their children and manage a work-life blend.

The data obtained for the variables was quantitative therefore an independent t-test was performed to explore the gender differences of the total EI mean scores. The significance level of Levene's test was .656 which was larger than the recommended cut-off .05, indicating that the assumption of equal variances was not violated. Therefore, the t-value - 4.014 corresponding to the 'Equal variance assumed' values were used (see Table 9). Pallant (2016) suggest the T-test does not calculate 'effect size' via SPSS which is the 'strength of association' between variables therefore, Cohen's eta squared formula was employed whereby a manual

calculation was performed (see Table 9) (pp.211-248). The results obtained from the T-test were significant, 16% of the variance in EI was explained by gender  $p < .01$ . This did not occur by chance which is consistent with empirical research suggesting a significant correlation between gender and EI.

Mortillaro and Schlegel (2019) GECo ability measurement demonstrated that women scored significantly higher on all subsets apart from the regulation of emotions. Overall global EI scores were significantly higher for women using the AES (Schutte *et al.* 1998). When the socio-demographic factors age, gender and education were investigated, gender was the only factor which significantly affected EI with females scoring higher than males for EI and the appraisal of emotions (Kun *et al.* 2010). Gourzoulidis *et al.* (2015) suggest that ‘gender differences in trait EI’ should not be generalized, because trait EI includes a ‘range of abilities, self-awareness, emotional self-management, empathy and social skills.’ Kun *et al.* (2010) suggest that it may be more effective to investigate variables in a longitudinal study particularly age. The present study obtained information relating to the variable factors age and gender. However, data pertaining to differences in seniority, education or academic performance relative to the variables was not gathered. Level of education or seniority maybe confounding factors relative to the results obtained for gender differences, even though one would imagine that the heterogeneous sample size would eliminate its relevancy (Palant 2016). Future research could collect this data to gain further insight.

Gourzoulidis *et al.* (2015) found on average females tend to show good emotional empathy while males have more confidence which is useful for managing in-group differences. Schutte *et al.* (1998) heterogeneous sample allowed for validation of ‘between group differences’ whereby psychotherapists scored higher than prisoners and overall women scored significantly higher than men (p. 173). Although the results obtained do not reveal anything new they are not proof that there is absolutely no difference between groups (type two error). A non-inferiority test could have been relied upon whose purpose is to show an absence of difference between groups. Unfortunately the author was unable to perform a non-inferiority test, it is suggested for future research. Consequently, hierarchical multiple regression was employed to examine whether EI predicts total occupational stress when accounting for age and gender. The sub components total role overload, total role ambiguity and total role conflict were also investigated. In order to prevent type two error a Bonferroni correction was applied  $p > 0.0125$ , ensuring results of significance were interpreted accurately and with confidence.



Contrary to the results obtained from the independent T-test but consistent with previous findings when analysing the correlation between the dependent variable total occupational stress and independent variable EI. H02 was accepted when accounting for age and gender. The result obtained was consistent with Meshkat and Nejati (2017) and Ahmad and Zadeh (2016) who found an insignificant difference between total EI scores for both genders however, there was a significant difference between the scores for self and other focused dimensions which is consistent with empirical findings. Mortillaro and Schlegel (2019) findings suggest age correlated positively with all subsets. Women scored significantly higher on almost all subsets apart from the regulating emotions indicating males may be better than females at regulating emotions which is positively related to life satisfaction and well-being. Bar-On (2006) suggest females have stronger interpersonal skills and are more empathetic. Men have better intrapersonal skills having more control of their emotions which improves their ability to cope in stressful situations making them more adaptable.

Jonker and Vosloo (2008) found significant differences between gender with men scoring higher on cognitive, physical and self-aspects. Women had a good understanding of other's emotions and displayed higher somatic symptoms. Consistent with Pekaar *et al.* (2019a) self-focused appraisal correlates negatively to subjective stress, while self-focused regulation correlates positively to skin conductance levels. Physiological arousal enables one to engage in adaptive rather than maladaptive behaviour which is short-term replenished through emotional regulation. This may explain why some participants with high EI also reported high scores for perceived occupational stress. Males may score lower in other subsets but their ability to regulate emotions would imply that they are better able to cope reducing the span of physiological arousal through effective recovery. Bar-On (2006) suggest interpersonal skills are important predictors of academic achievement, which may suggest that females are higher performers than males. This may be due to the 'curse of emotions' whereby reappraising, refocusing on positives through the use of acceptance strategies impacts maximal performance (Mortillaro and Schlegel 2019: 574). Future research could explore whether there is a significant difference between the scores for self and other focused components among Irish civil servants. An ability based EI measure like the GECo that is ecologically valid could ascertain typical self-regulation levels to avoid any generalisations (Mortillaro and Schlegel 2019; Gourzoulidis *et al.* 2015; Freudenthaler and Neubauer 2005).

Further analysis was conducted to investigate if EI predicts total role ambiguity, total role overload or total role conflict when accounting for age and gender. When the results for the dependent variable total role ambiguity were considered separately age was the only variable that made a statistically significant contribution. EI and gender were insignificant, thus rejecting H02: Global EI does not predict perceived occupational stress (role ambiguity) when accounting for age and gender. The negative relationship between total role ambiguity and age is consistent with empirical research (NG and Feldman 2010). Bar-On (2006) found that people become more emotionally and socially intelligent as they age. Older workers report less stress than younger workers, as one ages they gain experience and wisdom helping them cope with work related stress (NG and Feldman 2010; Kaufman and Lichtenberger 2002; Schaie 1996, cited by Field *et al.* 2013). Older workers usually gain more 'high status positions' with more job control, flexible work patterns and support thus reducing exposure to role ambiguity and role conflict (Virk *et al.* 2001: 52; Reddy and Ramamurthy 1991). These findings are consistent with Chhabra and Mohanty (2013) who found middle managers experience more stress than their executives who have greater job control and support. Suggesting occupational stress scores are a reflection on EI or one's ability to adapt and cope rather than what the job entails due to executives 'vast experience, emotional maturity and resilience' (p. 307). The findings indicate that EI had an insignificant bearing on the component role ambiguity, however age had a significant influence. This may suggest that one builds resilience through experience, giving perspective thus enabling one to manage and cope.

When the results for the dependent variable total role overload were considered separately none of the variables made a significant contribution accepting H02: Global EI does not predict perceived occupational stress (role overload) when accounting for age and gender. This is consistent with Suraksha and Chhikara (2017) who measured occupational stress among Indian bankers using the OSI and found that role overload was the most significant factor impacting occupational stress. Peterson *et al.* (1995) found high power distance and low individualism are associated with high levels of role overload and low levels of ambiguity. The trade-off between low ambiguity and role overload within bureaucratic organisations emphasises the critical role leader's play to ensure role overload is managed appropriately via effective communication to eliminate stress or strain. DPER (2020) annual engagement survey is employed within the Irish Civil Service however, its effectiveness is questionable (McCarthy *et al.* 2011). Suraksha and Chhikara (2017) assert in order to reduce role overload clear two-way communication is important at every level, ensuring workers are not overburdened with

high demands and inadequate resources. Instead staff should be rewarded for good work when goals are attained, information should be available to the 'right person' at the 'right time,' to ensure efficiency thus improving employee morale (p. 39).

Many authors have alluded to role overload diminishing with experience and seniority whereby one leverages resources through crystallised intelligence which compensates for any decline in fluid intelligence or weakened physical functioning. Another perspective is the effect of age causing cognitive overload or limiting one's physical fitness (NG and Feldman 2010; Kaufman and Lichtenberger 2002; Schaie 1996, cited by Field *et al.* 2013). The present study's findings did not support age's ability to predict role overload. Descriptive statistics indicate the average age was 43 years which is relatively young, considering there is at least 20 years to go before the retirement age of 65. On average it is likely that one has at least 20 years' work experience plus additional education which may suggest the average person is at junior to middle management level which may imply that the workforce is very capable.

The rigid bureaucratic structure of the Irish Civil Service impacts leader's effectiveness, especially when policies and procedures are driven by the political agenda at a macro level (McCarthy *et al.* 2011). This may suggest that the lack of power and control stifles performance management and ultimately two-way communication that may help motivate and reward staff. It is likely that the organisational structure has a major influence on role overload rather than age and gender's contribution, evident when stress levels in Ireland increased significantly doubling from 8% in 2010 to 17% in 2015 (Fahey *et al.* 2018). ESRI (2018) assert that the sharp increase was due to emotional demands being placed on workers due to austerity measures. Future research could explore the relationship between EI and occupational stress within the general workforce when accounting for organisational structure. It is likely that there may be trade-offs between pluralistic family friendly policies and political demands experienced by the workforce due to the 'rigidity of the industrial relations' (McCarthy *et al.* 2011: 66).

When the results for the dependent variable total role conflict were considered EI, age and gender had no significant contribution accepting H02. Singh and Singh (2010) suggest coping and role conflict predict the health of workers. Coping is a stronger predictor of health as it significantly moderates the relationship between role overload or role ambiguity and health. The moderating role of coping on role conflict is limited due to its persistent characteristics

unlike role overload and role ambiguity whereby if one gives more time to their work they can manage and resolve the situation. Role conflict is a long-term characteristic which may originate from the various role expectations. Family-role conflict can also occur if one is absent due to caring priorities. Ineffective organisational policies and lack of management support contribute to role conflict (Kossek and Ozeki 1998). The inconsistencies and the inflexible nature of role conflict create incompatible working arrangements, causing tension and hindering the physical and psychological health and well-being of a worker (Singh and Singh 2010). Role conflict causes the most serious strain followed by role overload and ambiguity which effect one's health and wellbeing (O'Driscoll and Cooper 1996). Bulak (2018) suggest managerial support is the strongest predictor of personal well-being having a positive relationship on stress and coping. Consequently, HRM must assess the organisational role structure to mitigate any associated risks providing support via two-way communication (Sandhu, 2017; Singh and Singh 2010).

## Chapter 7

### Conclusion and Recommendations

#### Results obtained inconsistent with literature

The results obtained for the hypotheses in question were inconsistent with the literature reviewed. All of the null hypotheses were accepted apart from H02: Global EI does not predict perceived occupational stress (role ambiguity) when accounting for age and gender. Although research had not been done on Irish Civil Servants before the various perspectives portray those with high levels of EI tend to behave positively, determining both physical and mental wellbeing along with overall life success (Kun *et al.* 2010). Our findings suggest age was the only factor that significantly contributed to role ambiguity. The measurements employed were selected due to their brevity in gaining the optimal sample size without incurring costs. The research was conducted in an ethical manner and participation was completely anonymous via the online platform. However, research was executed during the Covid-19 pandemic which may have impacted perceived stress levels, contributing to the lack of statistically significant findings especially when self-reported measures are regarded as valid but weak.

#### Limitations of Measurement EI

The findings suggest limitations may have been experienced due to the measurements employed. The AES measuring EI was self-reported based on Mayer and Salovey (1990) model, because it overlaps with personality traits it is regarded as valid but weak. It is also very subjective relying on one's own perception (Miao *et al.* 2017; Thor and Johnson 2011; Mayer *et al.* 2008; Ashkanasy and Daus 2003).

#### Recommendation 1: Employ ability based EI measure

It is recommended that future research employ an ability based measure that is grounded in scientific theory. Mayer and Salovey (1997) model of EI offers a unique perspective focused on abilities rather than personal characteristics making it a very valid and objective construct of EI. The scientific concept of EI has been strengthened with the development of the GECO, which is an ability based construct with good ecological validity. The regulation of emotions component is a good indicator of typical performance while the other components indicate maximal performance (Mortillaro and Schlegel 2019; Freudenthaler and Neubauer 2005). If one scores high in the regulation of emotion it alludes to 'the curse of emotions' whereby

reappraising, refocusing on positives through the use of acceptance strategies impact maximal performance. Alluding to the extension of typical performance whereby all the components are interrelated, which could be explored further.

### **Limitations of Measurement – Stress subjective phenomenon**

Individuals have different traits and abilities making stress very subjective, generalisations on stressful working conditions are not useful. Mediating variables are important to ‘determine the extent of its subjectivity’ (Singh and Singh 2010: 47; Brief and George 1991). Individual differences or subjective perceptions of stress require facilitation via independent direction (Lazarus 1991). Managerial support is the strongest predictor of personal well-being having a positive relationship on stress and coping (Bulak 2018). It is important that HRM and front line management assess the organisational role structure to mitigate the risk of role conflict, role ambiguity and role overload. Two-way communication will improve employee engagement whilst providing support (Sandhu 2017; Suraksha and Chhikara 2017; McCarthy *et al.* 2011; Singh and Singh 2010).

### **Recommendation 2: Risk Assessment**

Because stress is so subjective it is difficult to measure, it is suggested that a risk assessment is done on Irish Civil Servants who are absent due to work related stress. The investigator would be required to liaise with management to evaluate role ambiguity, role overload and role conflict. Two-way communication between management and employee is necessary to ensure the worker is receiving adequate support. If interventions have already been established it may be appropriate to employ a sophisticated EI measure like the GECO to determine whether up-skilling is required. Problem or emotion focused coping strategies could be employed to prevent ‘emotional hijacking’ whilst reducing the effects of strain on the organisation and its incumbents (Singh and Singh 2010; Goleman 1995: 17).

The GECO trades as ‘Emco4’ for commercial use, the nominal cost is 81 Swiss Francs (76 euro) however, the price is negotiable depending on the number of access codes required (Emco4 2020). Considering the financial cost, it is proposed that priority is given to those who are absent due to work related stress. If the tool proves successful it could be rolled out gradually across departments. Risk assessments could be done by management throughout the Civil Service, results could be analysed in conjunction with objective data such as absence levels to determine whether it would be beneficial to employ an EI tool. It is suggested that

special attention is given to scores obtained for self-regulation, if one is ineffective at regulating their emotions it may prolong physiological arousal causing strain (Peekar *et al.* 2019a; Peekar *et al.* 1998). Workshops or online resources could be used to educate the workforce, breathing techniques could be taught enabling one to regulate emotions. Numerous validated techniques are available free of charge via online platforms (Hof 2019). Due to the sensitivity of the matter along with being reliant on quantitative data this project may need to span 9 to 12 months or even 24 months, to assess if improvements have been achieved due to the interventions adopted.

### **Recommendation 3: Longitudinal/Experimental Research**

The study was correlational and cross-sectional the relationship between EI and perceived occupational stress was explored relative to a cross-section of the population, at one particular point in time. This research could be extended by experimental studies in which stress is manipulated experimentally. A sophisticated measure like the Trier Social Stress Test could be employed whereby effects are scientifically measured gauging physiological arousal by monitoring heart rate and skin conductance levels. The findings would be accurately interpreted considering age and any underlying conditions to ensure results obtained are objective (Kompier 2005). Furthermore the GECo measure could be employed to ascertain EI levels within the Civil Service. An intervention could be employed to improve self and other focused EI skills especially if gender differences are observed. Longitudinal research would be more practical if it was conducted annually. It may be difficult to retain the original sample over a lengthy time period however, this factor could be considered whereby an employee's department and grade is ascertained. Ultimately it would enable one to gauge whether an intervention proves effective or not at improving EI and reducing stress.

### **Organisational Structure as a future variable**

In hindsight the topic was very broad especially because occupational stress is very subjective and difficult to measure particularly when it was done in conjunction with a self-report measure of EI. Future research could explore occupational stress levels in both public and private organisations whilst investigating the influence of variables such as organisational structure and whether there is trade union involvement. The trade-off between low ambiguity and role overload within bureaucratic organisations emphasises the critical role leader's play to ensure role overload is managed appropriately via effective communication to eliminate stress or strain (Peterson *et al.* 1995).

#### **Recommendation 4: Two-way Communication**

Weekly meetings between management and staff will encourage two-way open communication encouraging employee engagement. Information that is available to the ‘right person’ at the ‘right time’ will ensure efficiency, thus eliminating role ambiguity and improving employee morale.

#### **Recommendation 5: Flexible working arrangements**

Role conflict could be limited by employing more flexible working arrangements. Family-work role conflict was reported casually during the Covid-19 pandemic. Family-role conflict may be experienced by those who have; long commutes or hardship due to lack of family or managerial support. It is suggested that policy makers investigate the opportunities of having more flexible working arrangements or the option to work from home. This may reduce the strain of role conflict within the Irish Civil Service. During the Covid-19 pandemic there was a scarcity of laptops however employees willingly used their own to facilitate working arrangements. Working from home is a privilege for Assistant Principal grade or above. If it was rolled out throughout the Irish Civil Service it may reduce operating costs as less office space would be required. It may prove challenging for line managers to monitor performance and ultimately assess work related stress. However, a balance could be struck if policy makers investigated the pros and cons, particularly for employees with family or working in densely populated locations experiencing traffic congestion and exorbitant living costs.

#### **Contribution to current literature:**

Contrary to the literature reviewed the author did not observe statistically significant findings. HA2 was the only hypotheses accepted: Global Emotional Intelligence predicts perceived Occupational Stress (role ambiguity) when accounting for age (but not gender) among Irish Civil Servants. Emphasising that EI can be developed and improved upon when one builds resilience through experience. This maturity enables one to respond and communicate appropriately to circumstances perceived as challenging. One may query why age does not have the same impact on role overload and role conflict. This may be due to one’s position or lack of control within the organisational structure. Consequently if EI was fostered whereby ‘emotions....enhance reasoning’ it may enable one to rationalise concerns and cope effectively (Mayer *et al.* 2008: 514). However, the results indicate that EI did not influence occupational stress or any of the sub components. This queries the validity of the perceived self-report



measure, reinforcing the importance of obtaining objective data using constructs grounded in scientific theory. Although some useful recommendations like two-way communication and effective management support were proposed for the bureaucratic organisational structure of the Irish Civil Service. A comparison between Irish private and public sectors could be explored using an objective measure like the GECO, to advance this research further.

## *Chapter 8*

### **CIPD Personal Learning Statement:**

Overall the author was surprised that the null hypotheses were accepted and acknowledges that the measurements used were valid but weak as they relied on subjective rather than objective data. When conducting a survey the author now knows the importance of selecting a valid measure, supported by scientific theory with good internal consistency to ensure its reliability. It is also important that a measure is accessible and financially feasible.

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## Appendix I

### Occupational Stress Index (Singh and Dubey 2011: 12 - 13).

<p><b>Questionnaire</b></p> <p><b>Occupational Stress Index</b></p> <p>(After Srivastava and Singh, 1981)</p> <p><b>Instructions</b></p> <p>This questionnaire is meant for a psychological investigation. The questionnaire consists of a number of statements that employees sometimes feel or say about various components of their jobs. You are required to use the following 'five-point scale' to indicate the extent to which you agree with each statement to describe your own job and the experiences or feelings about your job.</p> <p>A. Strongly disagree [1]    B. Disagree [2]                    C. Undecided [3]</p> <p>D. Agree [4]                    E. Strongly agree [5]</p> <p>For example, if you <i>strongly agree</i> with the following statement, in context of your job, put 5 in the box given against it.</p> <p>"I have to do such works as ought to be done by others" [5]</p> <p>In case you <i>Strongly disagree</i> with the above statement put ' 1 ' in place of ' 5', and so on. Give your responses frankly. Your responses will be kept strictly confidential.</p> <p><b>Please answer all the questions</b></p> <p>1. I have to do a lot of work in this job. [   ]</p> <p>2. The available information relating to my job role and its outcomes are vague and insufficient. [   ]</p> <p>3. My different officers often give contradictory instructions regarding my work. [   ]</p> <p>4. Owing to excessive workload, I have to manage with insufficient number of employees and resources. [   ]</p> <p>5. The objectives of my workrole are quite clear and adequately planned. [   ]</p> <p>6. Officials do not interfere with my jurisdiction and working method. [   ]</p> <p>7. I have to dispose off my work hurriedly owing to excessive workload. [   ]</p> <p>8. I am unable to perform my duties smoothly owing to uncertainty and ambiguity of the scope of my jurisdiction and authorities. [   ]</p> <p>9. I am not provided with clear instructions and sufficient facilities regarding the new assignments entrusted to me. [   ]</p>
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<p>10. Being busy with official work, I am not able to devote sufficient time to my domestic and personal problems. [   ]</p> <p>11. It is not clear what type of work and behavior my higher authorities and colleagues expect from me. [   ]</p> <p>12. Employees attach due importance to the official instructions and formal working procedures. [   ]</p> <p>13. I have to do such work as ought to be done by others. [   ]</p> <p>14. It becomes difficult to implement all of a sudden the new dealing procedures and policies in place of those already in practice. [   ]</p> <p>15. I am unable to carry out my assignments to my satisfaction on account of excessive load of work and lack of time. [   ]</p>
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## Appendix 2

### *The Assessing Emotions Scale (Schutte et al. 2008)*

#### *The Assessing Emotions Scale*

**Directions:** Each of the following items asks you about your emotions or reactions associated with emotions. After deciding whether a statement is generally true for you, use the 5-point scale to respond to the statement. Please circle the “1” if you strongly disagree that this is like you, the “2” if you somewhat disagree that this is like you, “3” if you neither agree nor disagree that this is like you, the “4” if you somewhat agree that this is like you, and the “5” if you strongly agree that this is like you.

There are no right or wrong answers. Please give the response that best describes you.

- 1 = strongly disagree
- 2 = somewhat disagree
- 3 = neither agree nor disagree
- 4 = somewhat agree
- 5 = strongly agree

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. I know when to speak about my personal problems to others.  | 1 | 2 | 3 | 4 | 5 |
| 2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.       | 1 | 2 | 3 | 4 | 5 |
| 3. I expect that I will do well on most things I try.  | 1 | 2 | 3 | 4 | 5 |
| 4. Other people find it easy to confide in me.   | 1 | 2 | 3 | 4 | 5 |
| 5. I find it hard to understand the non-verbal messages of other people.                               | 1 | 2 | 3 | 4 | 5 |
| 6. Some of the major events of my life have led me to re-evaluate what is important and not important. | 1 | 2 | 3 | 4 | 5 |
| 7. When my mood changes, I see new possibilities.  | 1 | 2 | 3 | 4 | 5 |
| 8. Emotions are one of the things that make my life worth living.                                      | 1 | 2 | 3 | 4 | 5 |
| 9. I am aware of my emotions as I experience them.   | 1 | 2 | 3 | 4 | 5 |
| 10. I expect good things to happen.  | 1 | 2 | 3 | 4 | 5 |
| 11. I like to share my emotions with others.   | 1 | 2 | 3 | 4 | 5 |
| 12. When I experience a positive emotion, I know how to make it last.                                  | 1 | 2 | 3 | 4 | 5 |

- |  |           |
|--|-----------|
| 13. I arrange events others enjoy.   | 1 2 3 4 5 |
| 14. I seek out activities that make me happy.  | 1 2 3 4 5 |
| 15. I am aware of the non-verbal messages I send to others.  | 1 2 3 4 5 |
| 16. I present myself in a way that makes a good impression on others.  | 1 2 3 4 5 |
| 17. When I am in a positive mood, solving problems is easy for me.   | 1 2 3 4 5 |
| 18. By looking at their facial expressions, I recognize the emotions people are experiencing.  | 1 2 3 4 5 |
| 19. I know why my emotions change.   | 1 2 3 4 5 |
| 20. When I am in a positive mood, I am able to come up with new ideas.   | 1 2 3 4 5 |
| 21. I have control over my emotions.   | 1 2 3 4 5 |
| 22. I easily recognize my emotions as I experience them.   | 1 2 3 4 5 |
| 23. I motivate myself by imagining a good outcome to tasks I take on.  | 1 2 3 4 5 |
| 24. I compliment others when they have done something well.  | 1 2 3 4 5 |
| 25. I am aware of the non-verbal messages other people send.   | 1 2 3 4 5 |
| 26. When another person tells me about an important event in his or her life, I almost feel as though I experienced this event myself. | 1 2 3 4 5 |
| 27. When I feel a change in emotions, I tend to come up with new ideas.  | 1 2 3 4 5 |
| 28. When I am faced with a challenge, I give up because I believe I will fail.   | 1 2 3 4 5 |
| 29. I know what other people are feeling just by looking at them.  | 1 2 3 4 5 |
| 30. I help other people feel better when they are down.  | 1 2 3 4 5 |
| 31. I use good moods to help myself keep trying in the face of obstacles.  | 1 2 3 4 5 |
| 32. I can tell how people are feeling by listening to the tone of their voice.   | 1 2 3 4 5 |
| 33. It is difficult for me to understand why people feel the way they do.  | 1 2 3 4 5 |

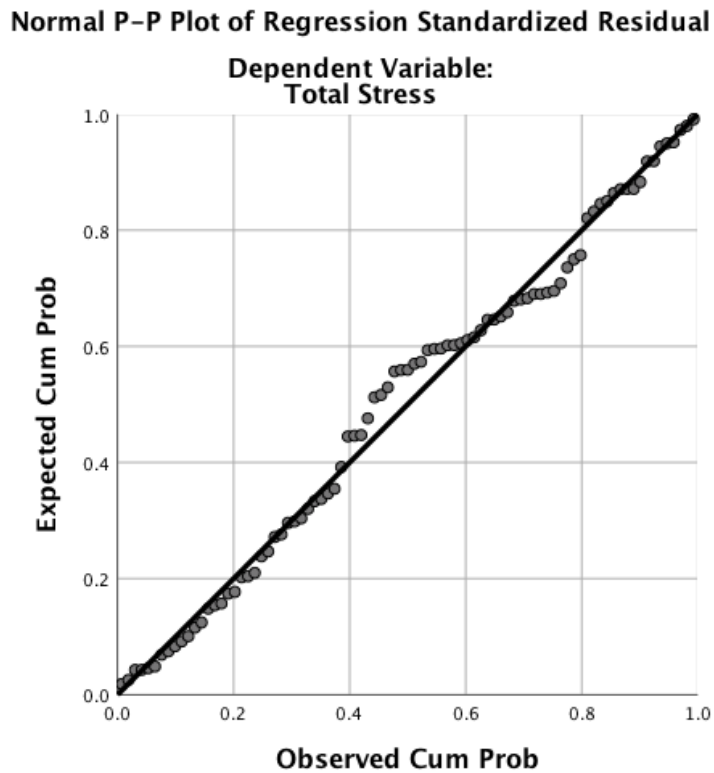
*Appendix 3*  
*Preliminary Analysis*

*Collinearity Statistics, Tolerance and VIF (Ranging from .834 to .992)*

		Coefficients <sup>a</sup>												
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	62.736	9.810		6.395	.000	43.223	82.248						
	Total Emotional Intelligence	-.126	.071	-.208	-1.790	.077	-.267	.014	-.170	-.193	-.190	.834	1.200	
	Age	-.165	.099	-.178	-1.671	.098	-.361	.031	-.161	-.180	-.178	.992	1.009	
	Gender	1.069	2.174	.057	.492	.624	-3.255	5.393	-.025	.054	.052	.840	1.191	

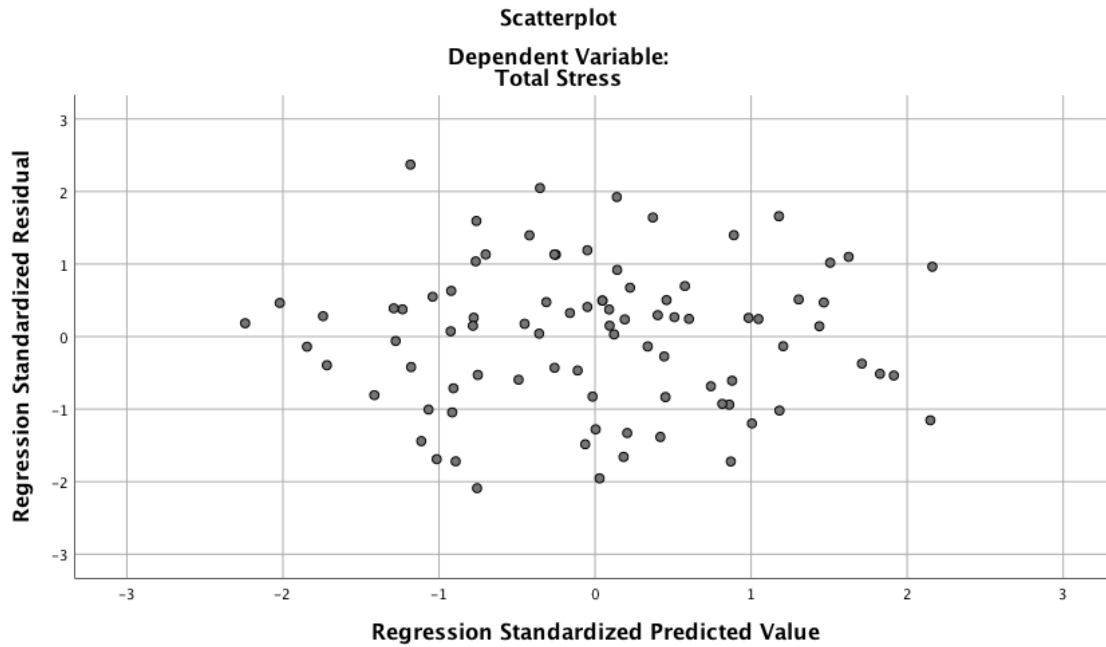
a. Dependent Variable: Total Stress

*Normal P-P Plot of regression standardized residual*





Scatter plot of the standardised residual



Cook's maximum distance at .110

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	35.34	45.37	40.45	2.276	87
Std. Predicted Value	-2.242	2.161	.000	1.000	87
Standard Error of Predicted Value	1.218	2.655	1.886	.368	87
Adjusted Predicted Value	35.21	46.20	40.43	2.330	87
Residual	-18.728	21.244	.000	8.803	87
Std. Residual	-2.090	2.371	.000	.982	87
Stud. Residual	-2.135	2.456	.001	1.006	87
Deleted Residual	-19.541	22.788	.022	9.227	87
Stud. Deleted Residual	-2.183	2.534	.001	1.016	87
Mahal. Distance	.601	6.560	2.966	1.497	87
Cook's Distance	.000	.110	.012	.017	87
Centered Leverage Value	.007	.076	.034	.017	87

a. Dependent Variable:  
Total Stress