THE IMPACT OF PERCEIVED HUMAN RESOURCE MANAGEMENT SYSTEM STRENGTH ON OLDER WORKERS' MENTAL WELL-BEING, IN-ROLE PERFORMANCE BEHAVIOURS, AND SATISFACTION WITH LEARNING OPPORTUNITIES

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October 2018

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THESIS SUMMARY

The number and proportion of older workers in the workforce is increasing. This thesis examined the effect of normal psychological aging on the future time perspective and goal orientation of this demographic group, and the effects that these age-related changes have on in-role performance behaviours, satisfaction with the learning opportunities afforded to them by their organisation, and their mental well-being. The work is grounded in socioemotional selectivity theory (SST, Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999) which postulates that as people age they perceive their future as increasingly limited and achieve greater emotional control. They resultantly become progressively less focused on developmental goals. This thesis examined how employee perceptions of human resource management system strength (Bowen & Ostroff, 2004) change the relationship between time perspective and goal orientation, and thus the magnitude of the effects of goal orientation on the outcome variables. To facilitate this, it was necessary to develop survey-based measurement instruments to measure goal orientation and positive emotional experience (Study 1), and to adapt an existing measure of HRM system strength to suit the sample population in Study 2. This latter study collected multi-source data from 151 employees and their line manager, using a survey method. Mediation and moderated mediation analysis revealed that changing time perspective, rather than age per se, accounts for changes in employee goal orientation, which mediates the relationship between time perspective and employee mental well-being, but not performance or satisfaction with learning opportunities. This mediation effect was then shown to be moderated by how strong employees perceive the human resource management system to be, as implemented by their line manager, thus demonstrating how line managers can materially affect the mental well-being of their direct reports. This is particularly important during periods of high levels of organisational change activity when employees are expected to learn new materials, processes and work within changing team structures.

Keywords: Socioemotional selectivity Theory (SST), human resource management system strength, future time perspective, goal orientation, line managers as agents of HRM processes

DEDICATION

To my husband Graham, without whose constant support and encouragement none of this

would ever have happened.

… Did you ever know that you're my hero,

And everything I would like to be?

I can fly higher than an eagle,

For you are the wind beneath my wings.…

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CHAPTER 1: INTRODUCTION

1.1. Introduction

This study had several objectives. Firstly and principally, relying on Socioemotional Selectivity Theory (SST, Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999) its purpose was to demonstrate how the relationships between the psychological changes associated with aging may be influenced by employee perceptions of the strength of the human resource system (Bowen & Ostroff), focusing in particular on age-related changes in developmental goal orientation and the consequential effects on in-role performance behaviours, satisfaction with the learning opportunities provided by the employer, and employees' mental well-being. This is a novel synthesis of these two constructs, and offers an opportunity for scholars and HRM practitioners to extend their understanding of the psychological changes which accompany normal aging and which affect the growing proportion of older[1] workers, and how external factors can influence the progress and outcomes of the process. This potentially has organisational impact, given the need for workers to adapt to new job roles and tasks in a changing environment as the result of organisational change.

Secondly, it developed a valid and reliable scale instrument to operationalise the positivity effect of socioemotional selectivity theory (SST: Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999). Finally, it adapted the Demotte et al. (2012) measure of perceptions of HRM system strength for use with workforces comprising employee populations with lower levels of educational attainment.

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[1] The term 'older worker' in this work refers to people in the workforce aged 50 years and over. This choice of age limit is discussed in the review of the literature.

UK population change and aging

Overall, the UK population is increasing; it is projected to increase from 65.6 million in 2016 to 74 million by 2039 (ONS, 2017). As a result of lower mortality, greater fertility, better health provision, and changes to lifestyles, as well as preferences of individuals to remain economically active and for social reasons (Dendinger, Adams & Jacobson, 2005), the proportion of older people in the UK population is also increasing, at an unprecedented rate; in March 2013, giving written evidence for a House of Lords Select Committee Report on Public Service and Demographic Change, 'Ready for Aging?' (SCPSDC, 2013), central government sources estimate that by 2030 there will be 51% more people aged over 65 in England, when compared with 2010. Furthermore, it is estimated (ONS, 2017) that the average old age dependency ratio (OADR) for the UK, which is the number of people over of the age of 65 per 1000 population, will have increased from 259 per 1000 in 1996, to 475 per 1000 population by 2036. The effects of this general population profile change are expected to have far-reaching consequences on demand for public services, in particular health and social care, housing provision, savings and pensions, and retirement (SCPSDC, 2013).

Government interventions to defuse the so-called 'pensions time bomb' of an older population included the abolition of the default retirement age (DRA) in October 2011. This has been followed in 2018 by gender equalisation in age of pension entitlement, and it is proposed to raise the state pension age (SPA) in stages, to 66 years for both men and women by 2019-20, to 67 years by 2027-28, and to 68 by between 2037 and 2039 (DWP, 2017). Of particular relevance to organisations, population projections show that by 2020 almost one-third (32%) of the working population will be aged over 50 (DWP, 2013).

At an organisational level, the increasing proportion of older workers is commanding more and more of the attention of both human resource professionals and the academic community, particularly in relation to how to best manage this demographic group to ensure that their valuable knowledge, skills and expertise are retained and utilised to best effect in contemporary organisations undergoing change, while maintaining the overall health and wellbeing of this increasingly significant group (e.g. Kooij & van de Voorde, 2015); although it is possible to predict the magnitude of these changes in the age profile of the working population, what is not yet well understood are the overall effects of the changes, and what organisations must do to ensure their aging workforce remains productive and healthy.

The aging process, perceptions of age, and age stereotyping: the impacts

It is known and accepted that the normal aging process involves complex physical, cognitive and psychological changes, but there are large variations around what effects and rates of change are considered 'normal', and these perceptions may be driven by individuals' views of when people become 'old'. Traditionally, age stereotyping tends to lean toward a deficit-based view (cf. Kite and Johnson, 1988; Levy, Chung, Bedford and Navrazhina, 2013) potentially resulting in stereotype threat (Steele & Aronson, 1995); despite legislative protection under the Equality Act, 2010, older workers are commonly offered fewer opportunities for development and promotion (Bal, Reiss, Rudolph and Baltes, 2011; Kite & Jonson, 1988), and are considered less reliable, and more likely to take sick leave (Bal et al, 2011; Sharit, Czaja, Hernandez & Nair, 2009). Perceptions of age-related changes, whether real or as a result of self-stereotyping (Steele, 1997; Steele and Aronson, 1995) inevitably affect self-efficacy (Levy, 2001), and impact (positively or negatively) on the choices this older demographic group make about their life, career and development.

The physical effects of aging

Few would argue that the normal (i.e. not affected by dementia or other health conditions) aging process produces physical changes such as in vision and hearing (Fozzard, 1990), executive motor systems (Kallus, Schmitt and Benton, 2005), gradual loss of muscle mass and strength (McArdle, Vasilaki and Jackson, 2002), bone density loss (Currey, Brear and Zioupos 1996), reduced pulmonary function (Whitbourne, 1999) and slower metabolism (Jansen, 2002), as well as cosmetic changes to outward appearance. There is also variation in how well older workers cope with continued working beyond the traditional age at which they might have expected to retire, although the less physically-demanding nature of work in contemporary organisations as a result of increased automation and technological advances does somewhat mitigate the impact of physical decline (Hedge et al, 2006).

The cognitive effects of aging.

Salthouse (2010) argues that although there are many well-expressed opinions about cognitive aging, there is a paucity of robust empirical evidence to back them up. There are, however, well-developed psychometric tests of cognitive function which control for the effects of prior experience or acquired knowledge, and which typically assess memory, verbal reasoning, spatial reasoning, perceptual speed and vocabulary. These have allowed patterns of cognitive aging to be identified and studied.

Both longitudinal, e.g., The Seattle Longitudinal Study by K Warner Schaie and the Whitehall Studies by Michael Marmot, and many cross-sectional studies have examined the role of age in cognitive change, and broadly concur on the 'normal' pattern of cognitive aging; age-related declines in episodic memory, spatial reasoning and verbal reasoning, and perceptual speed are apparent, although the age of onset is still debated (Salthouse, 2009). Contrastingly, vocabulary continues to improve with age, on average until the age of about

70, showing decline only in very old age (Park, Lautenschlager, Hedden, Davidson, Smith and Smith, 2002; Park and Payer, 2006).

There are several theories linked to, and which seek to explain, the physical, biological and neurological changes associated with both the physical and cognitive aging processes. These theories address these age-related changes using one of two approaches; first, programmed theories seek to explain age-related change in terms of a natural, expected progression or decline of genetic origin, and secondly, damage or error theories suggest that aging is a result of damage caused by environmental factors (Jin, 2010).

The psychological effects of aging.

The psychological effects of aging are just as variable as the physical and cognitive manifestations of aging in terms of both affect and effect, and it is the variability of these psychological effects which is the primary focus of this thesis; although knowledge and understanding of the psychological effects of aging have increased with the greater interest in this subject area in the light of the aging population, the extent to which they affect the individuals concerned, their life choices and the outcomes of those, is still an area with huge research potential.

The psychological changes associated with the aging process have their own frameworks and theories which describe and explain the changes; in particular life-span theories seek to explain how psychological processes and preferences change during the course of growing and maturing, from birth to death. These include control preferences and strategies (Heckhausen & Schultz, 1993; Schulz & Heckhausen, 1996), which consequently give rise to motivational direction. The motivational theory of life-span development (Heckhausen, Wrosch & Schulz, 2010) explores and further develops the life-span theory of control (Heckhausen & Schultz, 1993; Schulz & Heckhausen, 1996), by explaining the self-

regulatory and motivational processes which individuals use to meet the challenges of aging, using selectivity and compensation to optimise the course of life development.

Baltes & Baltes (1990) and Baltes, Lindenberger & Staudinger (1998) developed selection, optimisation, and compensation theory (SOC, 1990). This explains how, as people become more aware of the changes which occur as a result of aging, they support failing performance by selecting goals to better meet their lesser abilities and which provide the greatest return for the resources expended, by optimising or maximising the gains to be achieved, and by compensating for age-related losses by counteracting them, or even avoiding situations in which it is necessary to use them. One form of selection involves modification or restructuring of personal or professional goals by relinquishing unattainable goals and adopting others. This process, however, involves using resources to develop and achieve new goals and may lead to distress, especially if the original goals are important to the person's well-being or identity. In this case, compensation strategies may be adopted instead to allow the goals to be achieved by the older person (Freund & Baltes, 1998). Importantly, these processes are usually consciously undertaken rather than being subconscious.

Both the motivational theory of life-span development (Heckhausen et al, 2010) and selection optimisation and compensation (Baltes & Baltes, 1990; Baltes et al, 1998) explain the aging process in terms of effects; in other words, they focus on outcomes, how these potentially change across the life span with increasing age, and how individuals strive to maintain their performance standards.. In contrast, socioemotional selectivity theory (SST, Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999), whilst also explaining the effects of aging on goal preferences, additionally offers an explanation of the causal psychological mechanism - that of perceptual changes in what the future holds which consequently changes priorities. It is for this reason that socioemotional selectivity is the primary framework used in this thesis; this thesis explores

whether and how the course of the psychological and motivational differences associated with the normal aging process, and which are explained by socioemotional selectivity theory can be modified by lived experience, an area which has previously not been investigated.

The significance of socioemotional selectivity theory (SST, Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999) has been recognised in social, cognitive and psychological gerontology for some time, and in recent years has started to appear in the literature reviews and discussions of a number of publications examining age-related issues within organisational psychology. However, this has thus far been limited to being used as a conceptual and theoretical explanatory framework for a wide range of dependent variables, including psychological contracts and the lifespan (Bal, Lange, Jansen & Velde, 2013), psychological contracts and age in voluntary labour forces (Vantilborgh, Bidee, Pepermans, Willems, Huybrechts & Jegers, 2014), age-related change to affective job satisfaction (Drabe, Hauff & Richter, 2015), task and skill variety preferences (Zaniboni, Truxillo & Fraccaroli, 2013), stress management and burnout in the service sector (Johnson, Holdsworth, Hoel & Zapf, 2013), age diversity and leadership (Hammond, Lester & Clapp-Smith, 2017), and work stress and its negative effects (Hyun, Sliwinski, Almeida, Smythe & Scott, 2017). However, what is not yet understood is the extent to which the magnitude of the effect of SST affects these relationships and the outcomes as this has not been directly empirically tested. This is one of the main objectives of this study, which measures mediation effects of SST on the relationship between age and in-role job performance, satisfaction with the learning opportunities provided by the employer, and employee mental well-being. There are two main thrusts to SST; goal orientation, and what is known as the positivity effect. These are briefly outlined in the next sections.

Socioemotional selectivity theory: goal orientation

SST argues that there is a gradual age-related change from being motivated by and oriented toward achieving social and personal developmental goals and experiences when young, toward striving for more emotionally-satisfying goals as age increases (Carstensen, 1992, 2006).

The concepts of developmental and emotional goal orientation as defined by Carstensen (1992, 2006) are different and distinct from the better-known learning and performance goal orientations defined by Dweck (1986). Dweck's two goal orientations were defined as learning orientated, and performance orientated. Learning goals (Dweck, 1986) are when 'individuals seek to increase their competence, to understand or master something new' (p. 1040) and performance goals are when 'individuals seek to gain favourable judgements of their competence or avoid negative judgements of their competence' (p. 1040). In contrast to Dweck's (1986) definitions, in their 2004 paper, Löckenhoff & Carstensen (2004) state that a developmental-focus is characterised by 'individuals [who] prioritise goals that optimise the future. This includes goals that pertain to the acquisition of information, goals that are aimed at personal development, and goals that are aimed at establishing new social contacts that could be helpful in the future' (Löckenhoff & Carstensen, 2004: p. 1397), whereas the contrast is with those who pursue 'present-oriented goals that maximise emotional meaning … This includes goals that are aimed at regulating one's emotions by avoiding negative states, intensifying positive states, and flexibly adjusting emotional experience in response to different situations' (Löckenhoff & Carstensen, 2004: p. 1398).

Underpinning Carstensen's work is the concept of future time perspective (FTP) (Lewin, 1939, 1951), which suggests that as people approach an ending of some sort, they become increasingly aware of the reducing time they have left, rather than how much time they have

had. Logically therefore, FTP is strongly negatively associated with age; as people age they become increasingly aware of their own mortality, often feeling that their time is running out – their FTP progressively reduces.

However, other life events, such as relocation, receiving a poor health prognosis, war, or changing jobs have also been demonstrated to reduce time perspectives in people of all ages, not just older people (Carstensen, 2006). Indeed, any perceived ending to some aspect of an individual's life may be shown to induce the same transition from having a developmental goal orientation to having a desire for more emotionally-satisfying experiences, as a consequence of a reduced future time perspective. For example, young men who were symptomatically HIV positive reported very low FTP, despite their relatively young age (Carstensen & Fredrickson, 1998). When FTP is reduced, greater valence is placed on emotionally-weighted goals; people are generally more motivated toward achieving these, and less so toward achieving developmentally-focused goals, including those linked with career and other personal developmental outcomes. This means that people will place greater value on and be more motivated toward, for example, spending time with loved-ones or on enjoyable pastimes rather than in pursuing new experiences or striving for career development.

Thus far, only the effects of *perceived pending events* on FTP has been demonstrated; we know that although increasing age is the primary and most obvious influencer which will result in reduced FTP, other anticipated endings will artificially induce the effects, which may be reversed when and if the anticipated event is either cancelled, or has taken place.

What we do not know at present is whether the change in goal orientation from being developmentally-orientated to emotionally-orientated as FTP reduces is inevitable, or if it is possible to maintain a greater focus on a developmental goal orientation for longer.

This study extends our knowledge of the relationship between FTP and goal orientation with the introduction of a novel boundary condition on the natural and normal effects of changes in FTP; I propose that the relationship between FTP and goal orientation, as defined by Carstensen and her colleagues, may be changed by lived experience, and in particular that the effect of reducing FTP on goal orientation as people age, may be deflected from its natural course by an older employee's perception of the way in which the human resource management policies and practices send powerful signals about the expectations of their employer vis-à-vis their behaviour and performance – the perceived strength of the human resources management system (PHR(M)SS: Bowen & Ostroff, 2004) . To summarise, we know that when employees understand their employer's expectations of them, in terms of their in-role behaviours and attitudes, this results in positive consequences (Hewett, Shantz, Mundy & Alfes, 2018). What we do not know is how perceptions of the human resource system strength (PHRSS) interact with the natural changes in goal orientation which accompany aging, and thus how older workers may react differently to their younger colleagues.

This is important for organisations, because the reduced value which may be placed on, and motivation to achieve, developmental goals by older people (e.g. Carstensen, 1992; Kooij, de Lange, Jansen & Dikkers, 2013; Lang & Carstensen, 2002) has potentially serious consequences for firms operating in a volatile climate and trying to maintain their competitive position with an increased proportion of older workers; if older workers place lesser value on learning and development, maintaining their skills and abilities becomes

challenging and if not successfully achieved will result in depletion of human capital (Becker, 1962; Marimuthu, Arokiasamy, & Ismail, 2009). Moreover, if people are less motivated towards achieving developmental goals and are subsequently required to engage in challenging learning activities, perhaps to support strategic change in their employment, the resultant goal incongruity may result in psychological stress and loss of well-being (Schmidt, 2010). Thus, the criticality of maintaining a developmental goal orientation for as long as possible becomes clear.

In summary, this work contributes to the literature on older worker management by suggesting and empirically testing a novel aspect to the effects of Lewin's (1939) concept of future time perspective, as it is operationalised within socioemotional selectivity theory. Previously SST has been employed only to explain the *effects* of anticipated life events such as those mentioned, in changing FTP and thus goal orientation. This study suggests that in addition to anticipated significant life events, lived experience also has the potential to change this relationship. In other words, although reduced FTP is an inevitable psychological change associated with aging, as well as other life events, the rate of transition from developmental to emotionally-rewarding goals as people age and their future time perspective changes is not fixed and can therefore be altered.

The positivity effect (PE)

With greater age comes a propensity to look upon one's world as being organised and categorised in emotionally-salient ways, which results in older people recalling a disproportionally-large amount of emotionally relevant material (Löckenhoff & Carstensen, 2004). This is the positivity effect, which Löckenhoff & Carstensen (2004: p. 1408) characterise as bringing 'greater emotional control, less psych-physiological agitation, and fewer negative emotional experiences'.

Through the ages, older people have been stereotyped and portrayed as bad-tempered and miserable; consider Shakespeare's Timon of Athens, and Moliere's Alceste. More recently there has been Sesame Street's Oscar the Grouch, as well as the cult British sitcom featuring Richard Wilson's Victor Meldrew, in the BBC's 'One Foot in the Grave', and of course Statler and Waldorf, the two elderly, cantankerous old men from the Muppets.

Contrary to this popularly-held belief however, research (e.g. Carstensen, Turan, Scheibe, Ram, Ersner-Hershfield, et al, 2011;Dahling & Perez, 2010; Lee & Knight, 2009) suggests that as people age they are progressively more likely to be generally happy and contented. Moreover, they experience fewer negative emotions, and those which they do experience are less likely to be remembered. This is a result of the positivity effect (PE) which suggests that aging is positively associated with better emotional well-being, and greater emotional stability (Carstensen, Pasupathi, Mayr & Nesselroade, 2000; Carstensen et al, 2011), and is thought to be the outcome of better emotional control as a result of increasing efficiency in the self-regulatory and self-stabilising emotional processes (Charles & Pasupathi, 2003). This same effect means that in order to reduce conflict, greater attention and effort is paid to goals which are natural to the life stage of the individual – so in older, more emotionally-orientated people, greater attention and effort will be expended to achieve more emotionally satisfying goals, and less to goals which provide developmental rewards (Reed, Chan & Mikels, 2014). In other words, people who are older tend to have more, and more intensely positive emotional experiences and because they are more focused on emotionally-satisfying goals, they will be more motivated to achieving these and less so to achieving developmental goals.

__The links between a developmental goal orientation and individual outcomes: in-role job performance, satisfaction with learning opportunities, and mental well-being.__

It is important to consider the value of this work to organisations, and to the individual employees who work in them. Given that previous studies indicate there are positive relationships between a developmental goal orientation, and in-role job performance, satisfaction with the learning opportunities afforded to the individual by the organisation, and the individual's mental well-being, these individual-level outcomes are worthy of inclusion in the conceptual model for this study. These relationships are briefly discussed here, and in greater depth in Chapter 2.

Kooij, Bal & Kanfer (2014), using promotion-focus as their outcome variable, found positive relationships between a developmental goal orientation and both growth and promotion motivation, while Klein, Noe & Wang (2006) noted that individuals with a high learning goal orientation are likely to look for challenges, and are willing to put in effort to achieve them, logically thereby leading to improved individual performance. Given the links between individual performance and overall firm performance (e.g. Farr, Hoffmann & Ringenbach, 1993; Van Yperen & Janssen, 2002), and the still-unclear causal relationships between these and other organisational and individual factors (e.g. Purcell, 2003), the choice of individual in-role behaviour as a dependant variable helps to align this work with previous studies while providing HRM practitioners with additional empirical evidence of possible links between these elements.

Satisfaction with the learning opportunities provided by an employer is the most important component of overall job satisfaction, and is often one of the deciding factors when individuals decide whether or not to accept a job offer, or decide to seek alternative

employment ("What Drives Employee Satisfaction", 2001). Similarly, Blum & Kaplan (2000) found that the opportunity to master new skills was the most important factor in job satisfaction. Schmidt (2007) developed this multi-construct as a synthesis of Spector's (1997) definition of job satisfaction, and Landy's (1985) definition of job training. Socioemotional selectivity suggests that those who are high in developmental goal orientation will seek out, and enjoy, opportunities to learn and develop, and for this reason this variable was chosen for this study.

Mental well-being is defined by the World Health Organisation (WHO, 2004) as 'a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community'. This definition has been challenged recently, however, as it implies that mental well-being involves a permanently positive state of mind, whereas as pointed out by Galderisi, Heinz, Kastrup, Beezhold & Sartorius (2015), people who are in robust mental health can and do still experience negative emotions such as anger or unhappiness simply as part of a full life. Galderisi et al (2015) therefore, propose the following definition as having scope for a number and variety of emotional states, and which allows for the imperfect functioning which characterises being human,

> *'Mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society. Basic cognitive and social skills; ability to recognize, express and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; and harmonious relationship between body and mind represent important components of mental health which contribute, to varying degrees, to the state of internal equilibrium'*

Galserisi et al, 2015. Pp. 231-2)

Socioemotional selectivity theory (Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999) postulates that the positivity effect will improve overall mental well-being as people age. This effect, however, depends on

congruence between an individual's goal orientation and the environment; the person-environment fit. Therefore, for mental well-being, there are two influences; firstly that of age which improves mental well-being, and secondly goal congruence, which helps to prevent negative impacts from environmental stimuli, such as organisational change (Caldwell, Herold & Fedor, 2004) in those who have a high level of developmental goal orientation.

Perceptions of HRM systems strength (PHRSS)

The previous sections discussed socioemotional selectivity theory (SST), and briefly explained how its effects can impact the individual outcomes which have a positive relationship with a developmental goal orientation. Logically therefore, given this positive relationship if it is possible to increase or maintain a developmental goal orientation, then the positive outcomes may also be increased or maintained.

This study measures individual employee perceptions of the strength of the human resource management system (PHRSS) in their organisation, and the moderation effects of PHRSS on the relationship between their FTP and the goal orientation of these individuals. This will in turn affect their in-role job performance, satisfaction with the learning opportunities and mental well-being.

Based on the systems work of Mischel (1973), and the covariation model developed by Kelley (1967), Bowen & Ostroff (2004) suggest that when an HRM system is seen by employees as being high in distinctiveness (i.e. has 'features that allow it to stand out in the environment, thereby capturing attention and arousing interest', (Bowen & Ostroff, 2004, p.208)), consistency (i.e. is likely to 'be encoded and interpreted uniformly among employees' (Bowen & Ostroff, 2004 p.210)), and consensus (i.e. 'when there is agreement

among employees - the intended targets of influence by the HRM system – in their view of the event-effect relationship' (Bowen & Ostroff, 2004 p. 212)), then a strong situation results, one in which employees can make accurate predictions and share social constructions of the situation. Bowen & Ostroff (2004, p. 208) therefore suggest HRMSS may be conceptualised 'in terms of its effectiveness in conveying the types of information needed to create a strong situation'. When clear signals are present, based on the three features of a strong system (Bowen & Ostroff, 2004), this removes or reduces uncertainty (Alfes et al, 2019) which may be more prevalent during organisational change (Rafferty & Griffin, 2006).

There is a plethora of previous work that has demonstrated that so-called high performance working practices (HPWP) are positively related to organisational performance (e.g. Combs et al, 2006; Huselid, 1995). However, we have less understanding of the role of individual employees in this relationship, as the operational units by which organisational performance is achieved (Kooij et al, 2010). Until relatively recently, studies focused almost exclusively on HR policy existence, as described by HR and senior managers, which have often been shown empirically to be significantly different to the way in which the policies are enacted by line management and thus experienced or perceived by employees (e.g. Edgar & Geare, 2005; Guest, 1999; Whitener, 2001). Although this has been more comprehensively covered in recent studies, nevertheless this does highlight the need for any study of individual outcomes of HRM to focus not only on the views of policymakers but also on the perceptions of the workers who live with the everyday effects of policies as delivered by individual line managers. Only then can the effectiveness of HRM practice in organisations be assessed holistically for complete understanding (Guest & Conway, 2011). Employee perceptions of human resource system strength (Bowen & Ostroff, 2004; Ostroff & Bowen, 2015) offers a theoretical framework which explains the links between individuals'

perceptions and their reactions, behaviours or attitudes (Alfes, Shantz, Bailey, Conway, Monks & Fu, 2019).

In their original work, Bowen & Ostroff (2004) conceptualised HRM System Strength (HRMSS) as an organisational-level construct. However, as Ostroff & Bowen (2015) later point out, since it was introduced, researchers have both conceptualised and operationalised HRMSS in a variety of ways, and some of these are different to how they were originally introduced by Bowen & Ostroff in 2004. Most commonly, many studies (e.g. Bednall, Sanders & Runhaar, 2014; Delmotte, De Winne & Sels, 2012; Frenkel & Yu, 2011) have used HRMSS as an individual-level variable, focusing on the individuals' *perceptions* of the strength of the HRM system, measured by how similarly they understand the distinctiveness, consistency, and consensus of the system from the signals received from the organisation, and how this consequently impacts on their attitudes and behaviours. When the research focus is on the similarities or differences between employees in their perception of the practices that exist and, importantly, are delivered by leaders, in particular through line managers (e.g. Aryee, Walumbwa, Seidu & Otaye, 2012; Den Hartog, Boon, Verburg & Croon, 2013), findings of idiosyncratic interpretations and individual responses are to be expected. This focus on individual differences, and in particular varying levels in future time perspective, is the primary interest of this study, which also conceptualises HR system strength as an individual level variable, in which the perceptions of the employees are measured.

This is achieved using an adapted version of the Delmotte et al (2012) instrument to measure perceptions of HRM system strength (HRMSS, Bowen & Ostroff, 2004) where they define this as being rooted in the HR processes; the set of activities whose function is to develop, communicate, and implement HR practices. If these HR processes are successful they send

signals to employees to enable them to understand the organisation's expectations of their performance and behaviours; it is said that the HRM system is strong. The case organisation chosen for this study is one in which employees are expected to actively embrace learning and development, with the objective of empowering both individuals and teams to work to improve efficiency and reduce waste. Therefore a perceived strong HR system (PHRSS) will convey the clear message to employees of this expectation, and according to Bowen & Ostroff (2004) should result in their responding with appropriate behaviours and attitudes.

This means that if the employees receive and correctly interpret this message from the organisation via their line manager in the way they implement the HR policies and practices – the PHRSS is high - they will respond by adopting and embracing more developmental attitudes and behaviours. In other words, they will become more orientated towards developmental goals, and the positive relationship between an open-ended FTP and a developmental goal orientation will become more positive. Similarly, the negative relationship between a limited FTP and a developmental goal orientation will become less negative / more positive.

Figure 1.1 The conceptual model for this study, showing the expected relationships between the variables
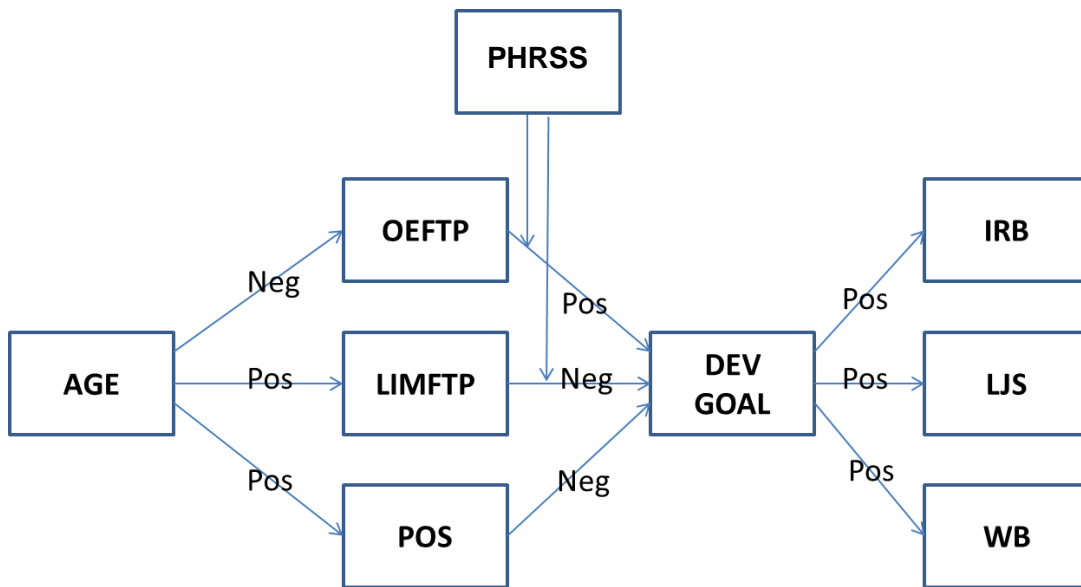
Key to Fig 1.1:

AGE = Chronological age, in years
OEFTP = Open-ended future time perspective
LIMFTP = Limited future time perspective
POS = Positivity
DEV GOAL = Developmental goal orientation
IRP = In-role performance behaviours
LJS = Satisfaction with learning
WB = Mental well-being
PHRSS = Perceived human resource system strength

The objectives of this study

The objectives of this study are:

- To confirm the hypothesised relationships between age and respectively, in-role performance, satisfaction with learning, and mental well-being, and to demonstrate the mediating influences of future time perspective, and developmental goal orientation in accordance with Socioemotional Selectivity Theory;

- To show how the effects of FTP on goal orientation may be moderated by demonstrating the interaction effect of perceived HRM system strength on this relationship.

These objectives are facilitated by:

- The development of a survey-based instrument, adapted from Lang & Carstensen's (2002) card sort exercise, to measure goal orientation;

- The development of a survey-based instrument based adapted from Carstensen et al.'s (2000) diary study, to measure the positivity effect;

- The adaptation of Delmotte et al.'s (2012) scale measure for perceived HRM system strength (Bowen & Ostroff, 2004), to meet the different needs of the new target population

1.2. The contributions of this research

Theoretical contributions

Socioemotional selectivity theory provides us with a theoretical foundation to explain how the aging process affects motivation across the lifespan, and also in response to significant life events (Carstensen, 2006; Carstensen & Fredrickson, 2998; Fung & Carstensen, 2006; Fung et al., 2001), but offers no other suggestions for influencing factors. This thesis addresses this gap, and extends and builds on this conceptualisation of SST; by showing how not just life events but also an individual's lived experience might have a marked effect on the course of age-related changes in motivation. This represents novel evidence which will affect the way in which scholars of aging consider the normal progress of the aging process. First it adds to the concept of socioemotional selectivity (SST: Carstensen 1992, 1993, 1995; Carstensen & Charles, 1998; Carstensen et al, 1999) by demonstrating that the magnitude of the motivational changes associated with changes in future time perspective can be affected by external factors, particularly by individuals' perceptions of the strength of the HR system in their employing organisation and the clarity of messages conveyed by line managers which contribute to this strength.

Second, using SST as a conceptual framework, it demonstrates the effects of varying perceptions of the future, and thus developmental goal orientation, for people of different ages and the subsequent outcomes of this on their in-role performance, their satisfaction with learning, and their mental well-being. This extends the conceptual work of Vantilborgh et al., (2014) and Bal et al., (2013). This also adds to and extends the work of Kooij, Kanfer, Betts & Rudolph (2018), who held that individual perceptions of the extensity of their future is an important determinant of motivation, achievement and well-being, through goal orientation. These findings speak to organisational scholars and HRM practitioners, who have an interest in the performance and welfare of the workforce, and the older workers who are embedded within it.

As the current study suggests that perceptions of a strong HR system (Bowen & Ostroff, 2004), which helps all employees to understand and embrace the strategic direction of the organisation in which they work, can moderate the relationship, it therefore contributes to the HRM literature addressing the relationship between management and performance by showing how effective line managements' implementation of HRM policy and procedures can make a material difference to the in-role performance, satisfaction with learning and mental well-being of older workers, particularly those who perceive they are undergoing significant change in their organisation. In so doing, it also opens up the possibility of moderation effects from other environmental and social factors, thus widening the scope of empirical research to explore the direct and indirect effects of these and their potential to alter the effects of 'normal' aging. These findings are important for scholars of aging, of management and for HRM practitioners, providing powerful data to show how line managers play a pivotal role in developing perceptions of a strong HR system when HRM is devolved to them, and how this can have significant impact on how well the workforce accept and embrace the learning needed to deliver organisational change.

This thesis also focuses on the negative effect of goal incongruence (Schmidt, 2010) on the internal equilibrium defined by Galderisi et al. (*op cit*), which, if upset, results in stress and stress-related illness and negatively affects mental well-being. This goal incongruence arises when older workers, who are naturally more oriented towards emotionally-satisfying goals, are forced by organisational change and the necessity to learn new materials to engage in learning and developmental activities. This contributes to the body of literature which addresses work stress and negative effects, and which ultimately results in older workers leaving the workforce (cf. Allisey, Noblet, Lamontagne & Houdmont, 2014; Elangovan, 2001; Firth, Mellor, Moore & Loquet, 2004), higher levels of stress-related absenteeism (cf. Colligan & Higgins, 2006; Jacobson, Aldana, Goetzel, Vardell, Adams, & Pietras, 1996; Westman & Etzion, 2001), and decreased productivity (cf. Alam, 2016; Banerjee & Mehta, 2016; Vagg & Spielberger, 1998), as well as for any organisation which has an interest in minimising negative mental health impacts within their workforce.

Empirical contributions

This thesis makes empirical contributions to the study of the effects of aging using the socioemotional selectivity concept by empirically testing for its effects, for the first time as far as can be established using easily-accessible survey instruments, and incorporating individual outcomes in the theoretical model. Previous works which were framed using SST (e.g. Bal et al., 2013; Drabe et al., 2015; Hammond et al., 2017; Hyun et al., 2017; Johnson et al., 2013; Vantilborgh et al., 2014; Zaniboni et al., 2013) used the theory only as a conceptual, explanatory framework.

Methodological contributions

Previously, goal orientation and the positivity effect have been measured using a card sort exercise (Lang & Carstensen, 2002) and diary study (Carstensen et al., 2000) respectively. This means it is neither practical nor cost-effective to empirically test these in survey-based

research. This work attempts to develop valid and reliable survey-based measurement instruments to allow these to be simply and easily incorporated into other research projects, thus operationalising the main effects of SST. Thus this methodological gap is addressed.

The Delmotte et al. (2012) scale to measure HRM System Strength (Bowen & Ostroff, 2004) was developed and validated using a sample of well-educated professionals, and as such uses language in its items which are suitable for that audience. However, many of the items were couched in language which would have caused confusion, or presented unacceptable levels of respondent burden (Mohler, Dorer, de Jong & Hu, 2016) to a less well-educated and literate sample, and therefore a process of adaptation of the Delmotte et al., (2012) instrument was undertaken, using the TRAPD team translation model (Translation, Review, Adjudication, Pretesting and Documentation: Harkness, Villar & Edwards, 2010). The adaptation of this scale for a wider, less well-educated population opens up opportunities for HRM system strength to be measured across much wider spectra of educational attainment and linguistic abilities. The developments achieved in this thesis therefore make it possible for scholars of aging to quantitatively measure the effects of SST, and therefore to relate these to other outcomes.

Practical contributions

As well as the theoretical, empirical and methodological contributions discussed, this thesis also offers a number of valuable insights for those in organisational practice. With the predicted increase in the number of older workers expected to remain in the workforce in the future, this work will contribute to better understanding how to maintain their productivity and well-being, by offering indicators of how line managers can best meet their needs and thus maintain their developmental focus and motivation.

First of all, the insight into the normal psychological aging process and its links with organisationally-critical outcomes will provide HRM practitioners with a valuable insight into how older workers may view and respond to various management processes and practices, thus enabling them to better adapt their policies and practices to optimise the well-being and productivity of their older workers.

Moreover, this thesis outlines the need for individual line managers, those who deliver devolved HRM processes, to understand the effects of their actions and attitudes on their workers, and in particular the growing cohort of older workers they manage. This therefore feeds directly into the management and leadership development programmes in organisations, to upskill line managers to fulfil this function effectively and in line with the needs of all workers, but particularly to more effectively support the increasing number of older workers who report to them.

Of great value also, this work can help practitioners to understand the psychology of aging, to help dispel any negative stereotypical views and biases which they, or the line managers and others in their organisation might hold. By shining a light onto the workings of the older worker's mind and motivational drives, sense can be made of these age-related effects so they are better understood, and can be supported and respected.

1.3. Methodology

A quantitate, positivist approach is taken. This is in keeping with Edmondson and McManus'(2007) framework of methodological fit, where one or more of the constructs utilised in the work is already supported by extensive research, which covers a variety of settings, and has been used to address related research questions. The construct of socioemotional selectivity theory is mature; it is clearly defined and has been operationalised

in previous studies, albeit using non-survey methods (e.g. Carstensen & Fredrickson, 1998; Coudin & Lima, 2011). Quantitative methods are predominantly utilised in this thesis, in both Study 1 and Study 2, with the exception of in the early stages of the adaptation of the items for the Delmotte et al. (2012) survey instrument which was used in Study 2 to measure the perceived strength of the human resource management system. In order to make them better fit the needs of a new population (Mohler, Dorer, de Jong & Hu, 2016) a set of comparative questions was developed to overcome the problem of differing levels of literacy between the original sample and the target sample in this study. This work involved exploring peoples' understanding of the comparative meaning of questions, and therefore demanded a qualitative, interpretivist approach (Edmondson & McManus, 2007) to produce a suitable survey instrument which could then be quantitatively administered and the resultant data analysed.

Data was collected in two distinct studies, using questionnaires administered in two discrete organisations. Study 1 was primarily conducted to develop reliable and valid survey instruments to replace the diary study (Carstensen et al., 2000) and card sort exercises (Lang & Carstensen, 2002) used in earlier studies which had empirically measured the effects of socioemotional selectivity. To achieve this and because the relationships between the variables were predictable, confirmatory factor analysis (CFA) by structural equation modelling techniques were employed (Tabachnick & Fidell, 2014). Study 2 then tested the main hypotheses of the study, again using structural equation modelling followed by tests of mediation and moderated mediation. Thus the method is determined by the demands of the data and the research objective.

The studies reported in this thesis have been undertaken in accordance with both the Aston University Code of Research Ethics, and also concordant with the American Psychological

Association's Ethical Principles of Psychologists and Code of Conduct, 2017. These regulations require the research to satisfy the requirements of their principles, of beneficence and non-malfeasance, of confidentiality and anonymity, and of informed consent.

The study sought to cause no harm, but rather to improve the lot of the older workers who were its subject; all participants were given information about the aims, methods, risks and potential benefits of the study before agreeing to take part, and all understood that their participation was voluntary. They were allowed to withdraw their data at any time without giving a reason up to the point that the data was anonymised and aggregated for analysis purposes. Data was collected, stored and processed such that the requirements of current data protection legislation were complied with, and the assurances of confidentiality and anonymity were met in full, with no individual being identified, either directly or indirectly by inference.

The study was approved and monitored by Aston Business School's Research Ethics Committee, and by the author's supervisory team for the work.

The context and background to this research

This research has great personal interest and meaning for me; my interest in older workers and their well-being and management stems from when I was working as a Learning and Development Manager in the rail industry, and had the task of delivering the change-related training to support a huge IT infrastructure implementation. This also involved a massive cultural shift for those working in the company – they had to become knowledge workers, not just grease-monkeys (their term, not mine!). The rail industry is by necessity heavily regulated to conform with the requirements of the Railways and Other Guided Transport Systems (Safety) Regulations, 2006, and therefore all trainees had to undergo formal assessment of learning and transfer of learning into their job role around six weeks after training. The results of these assessments, for the 2200 people who had been trained, was a

source of rich data which showed a pattern of higher failure rates in older workers. All the trainees were doing the same job, educated to the same level, and had undergone the same training; the only differentiating factor was their age, but it was the fact that they had all received exactly the same training which provided the clue to the problem. At the time I was undertaking an undergraduate degree by distance learning, and chose to investigate this phenomenon for my undergraduate project, focusing on the extent to which learning and development professionals, who are responsible for the design and delivery of learning and training events and initiatives, understood the different learning needs and delivery methods preferred by older workers, and that mass training methods are often unsuitable for older workers who require more practice and a slower pace of learning.

This interest in older workers was maintained throughout my master's degree, when I chose to investigate the relationship between age, stress and learning during organisational change. This mixed methods study found a positive relationship between age and stress, which was mediated by learning demand during periods of organisational change, with older people reporting higher levels of psychosomatic stress-related symptoms during change. Older people were much more likely than their younger colleagues to report the need to learn new things, and not feeling confident about their post-change job, as being sources of stress for them.

For my doctoral thesis, I chose to investigate the underlying causes of this threat to the mental well-being of older workers during organisational change, with the purpose of providing not just greater understanding of the causal mechanisms involved but also to propose ways in which organisational change might be made healthier for not just older workers, but indeed all workers. I also decided to incorporate in-role performance and satisfaction with the learning opportunities provided by employers because these broadly

link to the findings from my earlier work, and to many other studies in this field. To this end, a longitudinal study was designed which would allow me to measure changes in mental well-being across a major organisational change, and relate these to changes in the underlying psychological processes and attitudes. Unfortunately, for various reasons access to a suitable organisation at the correct point in their change programme proved impossible, and the study had to be modified to a cross-sectional design in which the variables were measured alongside the participants' perceptions of the level of organisational change they were experiencing and how it had affected them personally. I chose, and successfully negotiated access to, an organisation in which change is a constant because of the huge variation in workload and thus the size and composition of the workforce is constantly changing and with it team members and leaders.

1.4. Structure of the thesis

The remainder of this thesis is structured thus:

Chapter 2 provides a review of the literature around aging and its effects, in physical, cognitive and psychological terms. It provides an overview of life-span theories of aging, and focuses on socioemotional selectivity theory (SST, Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999), explaining the effect of socioemotional selectivity on goal orientation, as mediated by future time perspective. It also explains how striving for greater emotional control in older people results in what is known as the positivity effect. The concept of perception of human resource management system strength (HRMSS: Bowen & Ostroff, 2004) is introduced as a moderator of the relationship between future time perspective and goal orientation, thus postulating that it is possible to alter the course of changes in goal orientation which are attributable to normal aging, and which result from changes in time perspective.

The first part of the chapter provides a discussion of the full conceptual model, including the mediation and moderated-mediation effects. Because the thesis uses serial mediation, this discussion is followed by a series of shorter sections which explore each of the steps in the model in greater detail, and develop hypotheses.

Chapter 3 describes and justifies the methodology used in this work, the ontological and epistemological paradigms from which it stems, and the resultant data collection methods utilised. The quantitative methodology adopted is commensurable with the mature research disciplines (Edmondson & McManus, 2007) of aging and motivation.

Chapter 4 is an empirical chapter devoted to Study 1. In this chapter the methodology, sample and data collection methods are described, along with the measures used and the method of data analysis (EFA and CFA by structural equation modelling, followed by partial correlation analysis) for this preliminary study whose purpose was the development of survey based methods to measure the principal tenets of SST, and also to explore and confirm the factor structure of FTP. The results of this first developmental study are presented, and their limitations and significance are discussed.

Chapter 5 is a further empirical chapter devoted to Study 2, and describes the methodology used in this second study. The purpose of this study was to test the hypothesised relationships, and to test for mediation and moderated mediation effects. The sample, data collection process and measures are explained, as is the necessity and process for adapting the Delmotte et al. (2102) measure of Bowen & Ostroff's (2004) construct of HRM system strength. Descriptive statistics, CFA, correlations and the results of tests for mediation and moderation effects are presented, with limitations and a discussion of the significance of these findings.

Chapter 6 provides an overall discussion of the findings of this study. It considers the significance of the findings in an integrative fashion, highlighting how and where the objective of the thesis have been met, and reflecting on the theoretical, empirical, methodological and practical contributions achieved. There is also a section which considers the limitations of the study, and makes suggestions for avenues of further investigation for future research in this area.

CHAPTER 2: A REVIEW OF THE LITERATURE

2.1. LITERATURE REVIEW

Chapter introduction

This chapter reviews and presents the extent literature in each of the areas of interest in this thesis, leading to the development of hypotheses which are to be tested empirically in Study 2. The first part of the chapter systematically explores the conceptualisation of age, and explores what is known about its effects, both actual and stereotypically-conceived by people of different ages. In later sections, socioemotional selectivity theory (Carstensen, 1991, 1992) is evaluated as a theoretical framework, and used to give structure to the thesis. In the first instance, the overall conceptual model is presented and discussed in its entirety, followed by a series of sections which lead to the hypotheses for the main mediations proposed, in which the effects of aging on the increasing number of older workers in the UK workplace, and the subsequent effects of the psychological changes associated with normal aging are evaluated at the individual outcomes level, examining the effects on organisationally-important outcomes.

The final part of this chapter synthesises the socioemotional selectivity construct with that of perceived human resource system strength (Bowen & Ostroff, 2004). I propose that the relationships between open-ended future time perspective, and limited future time perspective, which are, respectively, positively and negatively correlated with developmental goal orientation can be moderated by employee's individual perceptions of the strength of the human resource management system in their organisation, thus defining a new boundary condition affecting the path of age-related change in an organisational context.

2.2. The conceptual definitions of age, and the 'older worker'

The conceptualisation of age

Before reviewing the literature on the various theories and frameworks which exist and purport to make sense of the normal aging process, it is first necessary to consider what age, as a concept, really is, and what is actually involved in 'normal' aging; the increasing number of older people in the population, and thus older workers in the workforce who will be remaining in work for longer than ever before, and the focus of this thesis on the welfare and productivity of this group make this a necessary step before examining the theories. It is also important at the outset to define the key concepts and their operationalisation; what exactly do we mean by someone's age? And when, exactly, does a worker cease to be a 'younger' worker, and transition into being a 'middle-aged' and eventually an 'older' worker? Moreover, do these things really matter, in an organisational context?

Defining age conceptually is problematic in itself, because of the huge heterogeneity that exists within cohorts of people of similar chronological age; as Peeters and van Emmerik (2008) point out, age may be highly subjective and therefore difficult to define. While *calendar* or *chronological age* provides an objective, convenient and legally-recognised measure, it may still lead to problems when calendar or chronological age is used to make or justify age-related decisions without taking into consideration other factors, such as in making decisions in employment matters (De Lange, Taris, Jansen, Smulders, Hourman and Konpier, 2006; Kanfer & Ackerman, 2004) and in healthcare. This view was reinforced in the House of Lords Select Committee Report (2012-13), 'Ready for Aging?', which states that chronological age is no longer fit for purpose as an indicator of people's needs or income, and therefore that the government should review whether this measure alone is a sensible determinant when deciding such matters as tax liability, and access to services or benefits (Para 11, p. 9). However, it remains the case that almost all studies which examine

any aspect of age, or use age as an independent or control variable, do use calendar or chronological age for this purpose. In this study, calendar age is also used as it is the most convenient, understood and most easily collected data which is likely to be reliable.

A further measure of age, which is equally pertinent in this study, is an individual and internalised concept of age; *life span age*. This refers to the life-stage or career-stage of the individual, and their family status (de Lange et al., 2006). Linked to the concept of life span age is that of future time perspective (FTP: Lewin, 1939) which postulates that as people grow older or perhaps approach an ending of some sort, they gradually change their focus from being intent upon their chronological age or what has already happened to them during their life, and become increasingly more acutely conscious that time may be running out, that they have less and less time still to live; thus time perspective age is expressed in relative terms depending on where an individual perceives themselves to be on their life journey. The implications for this conceptualisation of age both for this study and in an organisational context are discussed in greater detail in the section in this literature review which deals specifically with future time perspective.

Additional to *chronological age* and *life span age*, Cleveland & Lim (2007) also define *subjective* or *self-perceived age.* This is how old an individual perceives themselves to be, and again there is a large variation in the chronological age when someone starts to act and dress like an 'older person'. When this happens may be influenced by societal and cultural norms, and possibly self-stereotyping; if someone feels they ought to be dressing or behaving in a certain way 'at their age'. Another definition of age is *functional age*, which is based on physiological, social and psychological functionality (Cleveland & Lim, 2007). A further definition of age which is comparative within social groups, *social or interpersonal age* (Peeters & Emmerik, 2008) also includes and encompasses *organisational age* (Sterns &

Doverspike, 1989) in which the comparator group embodies the age norms of other employees and is operationalised in terms of tenure, career stage, and degree of skill obsolescence.

While only chronological, or calendar age is directly measured in this study, these latter definitions are important influencers and antecedents in the development of ageist stereotypes and self-stereotypes. These are based on social identity theory (Tajfel & Turner, 1986) and the associated self-categorisation theory (Turner & Oakes, 1986), and suggest that people naturally assign both themselves and others to discrete groups, based on perceptions of status, stability of the defining characteristics, and the ability to move between groups. Increased age diversity in the workforce appears to make this situation worse rather than improving matters although the extent of this seems to depend on the attitude of the senior managers in the organisation (Kunze, Boehm & Bruch, 2013). In summary therefore, ageism may be having an effect on the characteristics of human resource management and learning and development policy as well flavouring its implementation, and indeed, the overall experience of organisational life of older workers.

Defining the older worker

For the purpose of this study in discussions, I define those in the workforce who are aged 50 or over as 'older workers', although the sample of employees in both Study 1 and Study 2 cover the full range of employee ages, from 17 to 66 years (study 1) and 18 to 65 years (Study 2), to facilitate the demonstration of how older employees' responses may differ from those of their younger colleagues. This is in harmony with other studies. For example, Ng & Feldman (2010), in their meta-analysis of empirical articles which examined the relationship between age and job attitudes analysed 802 articles, found that 91% measured age as a continuous variable, with a mean age across studies of 37.8 years ($SD = 9.2$ years), and the remaining 9% used categories to define age as an ordinal variable, with ages categories from

20 to 60 years, usually in 5-year groups (Ng & Feldman, 2010).The same complexities and variability in the different ways in which age is conceptualised also exist when attempting to define the 'older worker'. These complexities arise because as longitudinal studies (e.g. Schaie, 1996) have clearly demonstrated that there is a huge variation in the individual aging process resulting in great heterogeneity within groups of people of the same chronological age. Additionally, both task and environmental familiarity mask the cognitive and physical effects of aging, and as they age people naturally utilise elements of selection, optimisation and compensation (Baltes, 1997) which provide support and thus similarly disguise reducing functional efficiency. However, in controlled laboratory tests when environmental support is unavailable, significant decline is observable and measurable (Singh-Manoux, 2012). Similarly, when individuals adopt 'older' characteristics is determined by attitude, general health, level of education, previous use of cognitive function, and genetic factors (Willis & Martin, 2005) as well as societal norms.

From a legal perspective, in some countries the age at which an individual becomes officially 'older' is enshrined in law; in the US, the Age Discrimination in Employment Act (ADEA) defines an older person as over 40, despite the fact that very few people in their 40s would consider themselves as 'old' and many people currently in their 50s are often fitter than the average 40-year-old of two decades ago (Sean & Haasen, 2006). In their work on older workers as learners, Moseley & Dessinger (2007) confirm there is no global consensus on when someone becomes an older learner, although they define older as being from the age of 40, in line with ADEA. In support of this idea of there being a lack of a clear definition of an 'older worker', Truxillo, Cadiz & Hammer (2015) state 'The definition of an older worker has vexed the aging workforce literature for some time. The concept varies considerably across contexts and cultures' (p. 353).

Fifty is commonly considered a turning point; around this age many employees reach a career plateau. Moreover, human resource management policies often implicitly represent post-50 employees as 'approaching retirement or in a state of declining abilities' (Shea & Haasen, 2006, p. 14). McCarthy, Heraty, Cross & Cleveland (2014), using an organisational decision-maker perspective, conducted research and defined older workers using a mean of 52.4 years, although the mode indicates that age 50 was the most popular response in their study, followed by 55, and then 60 years.

Moseley & Dessinger (2007, p. 112) state 'there are substantial changes in the long-term memory of facts, rules and definitions after the age of fifty'. Park et al. (1996) concur with this view, supported by the z-scores for various cognitive factors tested under laboratory conditions, which show significant reductions in all cognitive functions other than vocabulary between 45 and 50 years of age, when compared and contrasted with younger people. In a longitudinal study of cognitive aging, Salthouse (2009) concludes that,

> *'what does appear clear is that several different types of results converge on the conclusion that age-related cognitive decline begins relatively early in adulthood, and certainly before age 60 in healthy, educated adults'*

(Salthouse, 2009, p. 8)

The Whitehall Studies (Singh-Manoux, 2012) also found empirical evidence for age-related, negative changes to become apparent by about the age of 45-50; in this longitudinal study of civil servants, significant cognitive decline was measured in the 45-49 age group, although the effects varied by gender and this sample was biased toward males, which may have influenced the results accordingly.

In conclusion, given that age-related changes are detectable from about 45 years of age, it seems reasonable to define an older worker as someone of about this age and over. In keeping with ADEA, some researchers (e.g., Behaghel, Caroli & Roger, 2011; Gosling, 2011; Withnall, 2004; Ng & Feldman, 2012) define older workers as those aged 40 or over,

whilst others (e.g. Tikkanen, Lahn, Withnall, Ward & Lyng, 2002) prefer the slightly higher 45 years as the delineation point. At the higher limit, Setti, Dordoni, Piccoli, Bellotto & Argentero (2005) chose to limit their study to those over age 55. However, for the purpose of the discussions in this work, and in agreement with the 2006 definition provided by the OECD, I will define older workers as those aged 50 and older.

Perceptions of worker age in an organisational context, and the effect on their ability to cope with change

One has to consider the social significance of perceptions about age to appreciate its relevance in an organisational context; ageism can operate subconsciously, manifesting as seemingly benign, but nevertheless insidious and influencing ageist stereotypes and self-stereotypes about older people and what it means to be 'older' (Levy, 2001). Research (Levy, 1996; Levy, Hausdorff, Hencke & Wei, 2000) demonstrates that even when someone's explicit views about age are not ageist, people may nevertheless be influenced by unconscious bias, and consequently any decisions made are similarly affected (Levy, 2001). This is because the aging process has been societally defined in negative terms and imagery (Zebrowitz & Montepare, 2000); one has only to take a cursory look at birthday greetings cards to realise that as people get older they are fair game when it comes to ridicule. Although light-hearted and humorous, giving and receiving such cards nevertheless serves to reinforce ageism, making it socially-acceptable and the norm in a way that would never be allowed if the cards poked fun at, for example, ethnicity, faith, or sexual orientation.

Levy (2001) found that the long-term exposure to negative age stereotypes results in negative self-stereotyping; thus the prophecy of 'being in one's dotage' at a particular age becomes self-fulfilling. Several studies have empirically demonstrated that older people who have been exposed to negative age-stereotypes show poorer memory performance (Levy 1996; Stein, Blanchard-Field & Hertzog, 2002), less controlled handwriting (Levy, 2000),

and have reduced self-efficacy (Levy, 1996; 2000). Whilst Levy's work focussed primarily on older people who had left the workforce, the effects of negative stereotyping and self-stereotyping are often apparent in much younger people who are still economically active.

Age stereotyping can have a marked organisational impact, and as the proportion and number of older individuals in the workforce increases, this impact, if it remains unchallenged, will logically become proportionally greater and of greater significance, although as Chao & Willaby (2007) point out, the cognitive processes which underlie age stereotyping are not easily observable or measurable, and therefore are less well understood. Older workers are commonly the subjects of four popular stereotypical beliefs, particularly relating to their ability and willingness to learn. First, that they do not want to learn, second that they are incapable of learning new things, third that older workers cannot learn new technology, and finally that investment in learning and development, or training, for older workers provides a poor return on investment (Gray & McGregor, 2003). This negative stereotyping leads to reduced provision for, and take-up of, training by older people (Posthuma & Campion, 2009) despite being unlawful under the provisions of the Equality Act, 2010 which states that people must not suffer any detriment, including in the provision of, and access to, training and development, because of their age (Equality Act, 2010, Section 39(4)(b)). Historically, older workers have similarly been perceived as possessing lower ability, motivation and productivity than their younger counterparts, which, it is claimed, results in poorer overall performance (for example Finkelstein, Burke & Raju, 1995; Posthuma & Campion, 2009). This age group have additionally been dubbed less adaptable and receptive to change, more likely to be affected by cognitive and physical deficiencies relative to their ability to do their job, and more focused on retirement (Nelson, 2002).

Ultimately, when these negative beliefs are held by supervisors and decision-makers, even if subconsciously, the quantity and type of career opportunities and training offered to older people may be reduced (Rego, Vitória, Pina e Cunha, Tupinamba & Leal, 2017), so that as a result they become less self-confident, and with lower learning self-efficacy (Maurer, 2001; Van Vianen, Dalhoeven & De Pater, 2011) which if left unchallenged and uncorrected may become so debilitating that it prevents learning even in those who do have the ability to master new skills and competences (Gist, 1989). Guthrie & Schwoerer (1996) also suggested there is a link between age self-stereotyping and reduced individual learning performance: if older people believe they are less able to cope with the demands of learning and training, and feel less capable than their younger colleagues of mastering the new knowledge or skills, this undermines not only their learning self-efficacy (Hess, Auman, Colcombe & Rahhal, 2003) but also changes their view of their future and career prospects. Additionally, Guthrie & Schwoerer (*op cit*) suggest that if people have not had recent learning experience, they tend to find it more challenging to accomplish learning, and are thus more wary of undertaking learning. Age and aging, therefore, has the potential to not only shape the individual's attitudes toward learning and training, but also their ability and willingness to embrace it.

This all becomes particularly pertinent when considering the context of organisational change; even the simplest and most straightforward change involves learning something, and therefore only by learning can change be brought about (Harrison, 2009). It is this recognition of the role of learning in facilitating change, and in enhancing organisational competitiveness and success which has caught the attention of many organisational researchers (Antonacopoulou & Gabriel, 2001). Given the context of organisational change-related learning, and in harmony with Harrison's (2009) assertion that for learning to be achieved, individual employees must be both ready and willing to learn, and also feel that the outcome of the learning or the change which requires it has personal valence (Vroom,

1964). Warr, Allan & Birdi (1999) demonstrated empirically that knowledge improvement scores measured using pre- and post-training assessment were negatively associated with age ($r = -.24$, $p < .01$), and older workers typically took longer to complete the training programme (Kubeck, Delp, Haslett & McDaniel, 1996). This age-related change in learning performance, thought to be the result of a reduction in working memory function (Van Gerven, Pass & Schmidt, 2000) means that older workers encode new material at a slower rate than younger people, and their ability to retrieve stored information from memory is also delayed (Ford & Orel, 2005). Additionally, the detail of new material may be missed resulting in poorer comprehension of material for older learners (Warr, 1994). The effects of age on learning ability are particularly noticeable when the new material involves computer-based learning (Elias, Elias, Robbins & Gage, 1987; Gist, Rosen & Schwoerer, 1998; Hsu, 2013), and when task complexity is high (Spirduso & MacRae, 1990), although this can be improved (Vance, Heaton, Fazeli & Ackerman, 2010) by the learner undertaking specially-designed exercises to support and potentially enhance their cognitive processing speed.

Older people find it harder to accomplish novel tasks which necessarily make heavy demands on the cognitive information-processing abilities of learners (Salthouse, 1996), and during periods of complex and rapid change these demands on the ability of people to learn, and their emotional response to these demands may be particularly impactful (Antonacopoulou & Gabriel, 2008). For older workers to successfully master new material to support organisational change it may therefore be necessary to provide learning experiences specifically tailored to their needs (Allen & Hart, 1998), based on cognitive load theory (Sweller, Chandler, Tierney & Cooper, 1990) which suggests that to optimise the chances of success, learning should be designed and delivered to minimise the cognitive load for older people.

Of great relevance is the role of prior experience in the success of learning (Hsu, 2013). To a great extent, the success of learning depends on learners building new material into their existing schema, thus modifying their world view. During change-related learning however, older workers may have little or no prior knowledge or experience of the new material, context or situations. As a result, their more stable long-term memory cannot provide support to their less resilient short-term memory and fluid intelligence during the learning process (Meriam & Caffarella, 1999), making the task of learning considerably harder, and with greatly reduced chances of success without the provision of additional support and training which has been specifically designed for older workers. This may not be economically feasible, however, and this is rarely provided (Charness, Schumann & Boritz, 1992).

2.3. Aging in absolute terms: physiological and cognitive perspectives

This section briefly discusses the physiological and cognitive changes which commonly occur within a normal aging pattern, where there are no underlying physical or mental conditions which might adversely affect these factors e.g. dementia. Whilst these aspects of aging are not directly measured in this work, they nevertheless provide an important contextual backdrop for those attitudes and outcomes which are relevant within the concept of socioemotional selectivity, of perceptions of how extensive an individual perceives their future to be, and are therefore pertinent to this work.

Physiological changes associated with the aging process

Most people are familiar with the visible, outward changes associated with aging. As Burch & Jackson (1966) state, 'few would dispute the claim that the greying of hair and the loss of permanent teeth are two of [aging's] most conspicuous manifestations' (p.522) and although the greying of hair, for example, along with baldness is not confined solely to the aging process, (Burch, Murray & Jackson, 1971) both being present in some people from a young age, it is nevertheless a widely accepted sign of aging. Similarly, the skin naturally changes

with age, as the epidermis' ability to self-renew changes with age, resulting in thinner, dryer and finely-wrinkled skin (Rittié & Fisher, 2015), which is less able to repair wounds, and ultimately leads to age-related frailty of the skin, and potentially, to disease.

Another area in which age-related change is perceptible is in sensory change, particularly in the auditory and visual senses which both decline as part of the normal aging process, and which consequentially lead to problems such as speech comprehension (e.g. Fullgräbe, Moore & Stone, 2014) and with driving (e.g. Lacherez, Turner, Lester, Burns & Wood, 2014), although the effect of older people integrating the visual and auditory stimuli from a single temporal event has produced conflicting results, with some evidence that sensory integration preserves acuity, and other studies which found non-conclusive results (Brooks, Chan, Anderson & McKendrick, 2018),.

Internally, age-related changes affect the musculoskeletal health of individuals, with muscle mass loss becoming apparent from the age of about 40 years of age, resulting in losses of about 8% per decade thereafter up to the age of about 70 (Kim & Choi, 2013; Short, Vittone, Bigelow, Proctor & Nair, 2004; Vandervoort, 2002) and evidence of slowing of muscular contraction strength from the 40s and 50s onwards (Porter, Vanderwoort & Lexell, 1995) although decrements in voluntary strength are not significant until about the age of 60 (Vandervoort, 2002). The causes of these effects are imperfectly understood (Mustafa et al., 2018) but there is clear evidence that diet, and in particular higher levels of dietary protein (Mustafa et al., 2018) and exercise (e.g. Justice, Cesari, Seals, Shively & Carter, 2016) are both important antecedents of healthy musculoskeletal aging in older adults, along with genetic influences (Plomin, Lichstenstein, Pedersen, McClearn & Nesselroade, 1990). Moreover, there is evidence (Emery, Finkel & Pedersen, 2012) that cardiovascular health and pulmonary function also declines with age, digestive efficiency changes decrementally

(Bowman & Rosenberg, 1983) and indeed, almost all cellular functions are affected by the process.

There is a link between the physical cardiovascular changes associated with physiological aging, and cognitive aging (Emery, Finkel & Pedersen, 2012) and in particular as a result of declining pulmonary function which affects the oxygenation of the blood supply to the brain. Cognitive age-related change is discussed in detail in the next section.

Whilst the physical manifestations of the aging process, when presented thus as a brief list, seem detached from the main thrust of this thesis, it is important that they are understood for their effect on how an individual perceives their future; although there is great heterogeneity in when or whether each of these characteristics affects each individual, it remains the case that everybody will be affected to a greater or lesser extent by some of them, and when these physiological markers of age are recognised, that recognition will change the individual's perception of how expansive and opportunity-laden their future might be according to the age-related changes they are personally experiencing and how likely they are to be able to take advantage of such opportunities which present.

Cognitive changes associated with the aging process

In the same way as the normal aging process produces physical changes, cognitive changes also occur as people grow older. As previously mentioned, some of these are linked to physical changes such as reduced cardiovascular and pulmonary function having a causal link to cognitive decline (Emery, Finkel & Pedersen, 2012), and marked demyelination of nerve fibres in the brain (Marner, Nyengaard, Tang & Pakkenberg, 2003), whereas others have no apparent cause other than cellular changes attributable to the aging process itself. Similar variation in the occurrence of cognitive age-related change exists as for physical changes, but in exactly the same way; when older workers become aware that their cognitive

ability is declining, it consequentially changes their view of their future and what they ae able to do.

Advancing age is recognised as a process which brings about both losses and gains; since the 1920s, cognitive decline has been studied by cognitive psychologists (for example, Foster & Taylor, 1920) and cognitive ability, or mental testing, carried out. Patterns of cognitive aging have been identified, with measured declines in processing speed, attention, perception, working memory, and in both cued and free recall (Dennis & Cabeza, 2008; Park, 2000; Singh-Manoux et al, 2012), but with gradual gains in vocabulary until very old age (Park et al., 1996; Singh-Manoux et al, 2012) when declines become measurable even in these abilities, although there is still some discussion over the exact effects. This is especially relevant when cohort effects are considered and controlled for (Salthouse, 2009; Singh-Manoux et al, 2012), with differential effects being reported between cross-sectional studies and longitudinal studies; cross-sectional studies show a gradual decline in both reasoning ability and spatial orientation from early adulthood onwards (for example Salthouse, 1998; Salthouse, 2005; Salthouse, Atkinson & Berish, 2003), whereas longitudinal studies contrastingly appear to show that cognitive function is maintained at least until the early- to mid-50s (Albert & Heaton, 1988; Ronnlund, Nyberg, Backman & Nilsson, 2005; Schaie, 2005; Willis & Schaie, 1999) or even later (Aartsen, Smith, van Tilburg & Knopscheer, 2002; Schaie, 1989). This discrepancy in opinion about at what age cognitive age-related decline becomes apparent may be explained by several factors, including older people appearing to maintain their effectiveness as a result of their greater relevant experience, both in job-specific knowledge and skills, and also in general life skills such as decision-making (Bruine de Bruin, Parker & Fischhoff, 2010), which compensates for age-related decline in intellectual speed and agility (Charness, 2008; Gajewski, Wild-Wall, Schapkin, Erdmann, Freude & Falkenstein, 2010; Park, 1994; Salthouse, 1984; Salthouse, Babcock, Mitchell,

Skovronek,& Palmon, 1990), and their ability to compensate in other ways for age-related losses (Baltes & Baltes,1990; Park, 1994). There is also evidence that tacit knowledge about a job, in the form of procedural knowledge, which can potentially be transferred into novel problem-solving situations (Collonia-Wilner, 1998; Vasconcelos, 2018) also serves to preserve levels of work performance, despite cognitive decline. This is referred to as wisdom capital (Vasconcelos, *op cit*), and it facilitates older workers' continued performance in their work role. This is especially evident in managerial skills and other people-related competencies (Park & Gutchess, 2000). Whatever the cause, there remains the fact that there is a clear difference between measured abilities in laboratory tests, and functional competency based on everyday observation of subjects (Salthouse, 2012), as well as there being many examples of people achieving great success in work, study and other areas well into their old age.

The consequential effects of cognitive decline in midlife are varied, and like physiological age-related change, vary from individual to individual in terms of both timing and effect. Evaluation of age-related change is carried out using two types of cognitive test, categorised into those which measure speed of processing at the time the test is undertaken, and which therefore assess reasoning, memory, and speed (fluid ability), and those which measure the accumulation of the outputs or products of prior processing (crystallised ability). These latter abilities are typically assessed by tests of acquired knowledge (Salthouse, 2012). Measures of these two different types of ability have different relationships with age, with fluid ability having a negative correlation with age from about the age of 30, and crystallised ability having a much smaller, if any, negative correlation between age and crystallised ability until extreme old age (Salthouse, 2012), thus exhibiting a pattern of stability followed by a much later decline.

Awareness of cognitive changes such as small lapses in memory, often referred to as 'senior moments', in the same way as awareness of physical age-related changes, will affect how an individual views themselves in terms of their self-perceived age, and consequently the choices and decisions they make about their future, particularly about how long they consider they will be able to continue with their present occupation or way of life.

2.4. An overview of lifespan approaches to aging theory

Lifespan theories of aging seek to explain how individuals develop and change as they age, from childhood to old age, and there is broad agreement across many social and medical disciplines that it is necessary to look at the history of an individual, group or cohort (Heckhausen, 2006) to understand their aging process (Fuller-Iglesias, Smith & Antonucci, 2009). On an individual basis, lifespan theories encompass the length of an individual's life. Conceptually, the processes and directions of development within that life are lifelong phenomena (Lerner, 2002), with old age being the ultimate outcome of the lifetime of experiences, although lifespan theories posit that development continues throughout the lifespan, even into very old age. This makes it critical to understand how, although old age cannot be prevented, that development can be optimised even into old age, (Fuller-Iglesias et al., 2009), and thus such approaches emphasise the importance of understanding the broader principles of development and change at all ages, the differences between individuals in the course of age-related changes, and the variability in the rate of their aging and development. This focus on interindividual differences (ontogenesis) clearly demonstrates the heterogeneity of functioning and age-related change between individuals in age or social groups.

Baltes, Lindenberger & Staudinger (1998) argue that lifespan development is better defined as adaptation, and involves both losses and gains which occur throughout life. They posit

that one important aspect of task adaptation across the lifespan is the allocation of resources (Hobfoll, 1989) in order to manage (in age order) the effects of functional growth, maintenance of performance and finally regulating the effects of age-related losses which present as threats to well-being. In other words, as individuals grow from infancy, through childhood and early adulthood and onwards, they gradually reallocate their resources from growth in their early years, to maintenance of performance in mid-life (Ebner, Freund & Baltes, 2006; Hobfoll, 2002) and finally to preventing the loss of skills, or perhaps recovering skills which have been lost (Fuller-Iglesias et al, 2009). Old age presents more challenges than other life stages; age-related functional change is likely to be occurring, requiring an individual to adapt in order to achieve different levels of functioning, and their resilience, or the ability of the individual to adapt to different environmental demands, must compensate for age-related losses, if they are to preserve their ability to meet job or task demands with their intrinsic resources. Successfully meeting demands and thus task success leads to increased self-efficacy (Chen, Gully & Eden, 2001).

Selection, optimisation and compensation

Selection, optimisation and compensation (SOC: Baltes, 1997; Baltes & Baltes, 1990), which specifically describes the processes of goal selection and allocation of resources, postulates that as people age and become aware of age-related decline and decrements, they adopt strategies related to goal selection and pursuit in which they select functional domains on which to focus effort and resource. This optimises the chances of successfully achieving the chosen goals by the considered application of resources and acquiring of new skills to assist in this. It also involves compensating for age-related losses by restructuring goals, for example, instead selecting new goals which can be attained with the more limited personal resources available.

Selection, optimisation and compensation is broadly a lifespan theory of control (Heckhausen & Schulz, 1993), which suggest that the purpose of the selection, optimisation and compensation processes is to allow the individual to maintain control over their functionality across the lifespan by adapting and adjusting their goals to make successful accomplishment of these possible. Implicit in this is the concept that lifespan control resulting in successful aging involves continuous development across the lifespan (Schulz & Heckhausen, 1996). Thus successful aging is defined as 'the development and maintenance of primary control throughout the life course' (Schulz & Heckhausen, 1996, p. 702).

The first process involved in SOC, *selection*, is the key stage. It is here that commitment to personal goals is made. The selection of goals and domains will be based on personal motivation and the personal valence attaching to the goals (Vroom, 1964). With aging and a reduction in resources available, even allowing for resilience and changing levels of reserve capacity in later life (Staudinger, Marsiske & Baltes, 1993), such goal selection becomes critical if the individual is to maintain control; with increasing age, the focus of goal selection changes from growth in younger people, through maintenance during which time more middle-aged individuals strive to maintain their functionality, and finally to regulation of loss, when older people strive to slow down or manage their resource losses in later years (Baltes, Staudinger & Lindenberger, 1999; 2002).

Two types of selection are outlined in the SOC model; *Elective selection* is the choice of goals specifically chosen to match the individual's needs and motivation, utilising the available resources or those which might be attained. Its purpose is to improve or increase levels of functionality. Conversely, *loss-based selection* is carried out as a response to the loss of resources previously available to an individual. It might involve changing the priority of goals thus favouring those of greatest importance, changing the performance standards

attaching to goals, or by replacing unattainable goals completely. Whatever strategy or

strategies are adopted, the aim is to promote successful aging by giving or maintaining

purposeful existence which in turn drives and motivates behaviour and maximises the utility

of resources (Freund & Baltes, 1998).

The second process, *optimisation*, involves the purposeful allocation of both external and

internal resources to achieve higher levels of functioning in whatever goals have been

selected. The type of goal will of course determine the best-suited means necessary to

achieve it, for example, whether it is in the work domain, personal or family context, and

this will vary according to gender, age (Freund, 2006) and sociocultural influences (Freund,

2006; Freund & Baltes, 1998; Lang, Rieckmann & Baltes, 2002; Zacher & Frese, 2011)

The final process, *compensation*, involves maintaining positive functionality despite health-

related and age-related losses and constraints. This links back to the concept of loss-based

selection and may involve relinquishing unattainable goals in favour of more appropriate

ones. It might also involve supporting declining resources, for example by wearing

spectacles or a hearing aid to compensate for losses in sensory function or hiring an assistant

to help with work tasks (Bajor & Baltes, 2003; Baltes & Dickson, 2001). These are referred

to as external compensation. Another form of compensation, internal compensation, involves

impression management so that losses are perceived by others to be of lesser importance or

hidden from others altogether (Abraham & Hansson, 1995).

Motivational theory of lifespan development
Heckhausen, Wrosch & Schulz' motivational theory of lifespan development (Heckhausen,

Wrosch & Schulz, 2010) incorporates their original lifespan theory of control (Heckhausen

& Schulz, 1993, 1995; Schulz & Heckhausen, 1996) with various goal-based models,

focusing on goal selection, engagement in goal striving, and finally disengagement with

goal-seeking, across the life course. Thus, the motivational theory of lifespan development identifies the principal challenges faced as the life course unfolds, and the self-regulatory and motivational strategies and processes engaged in to deal with these challenges, based around repeating cycles of goal identification, pursuit and disengagement (Heckhausen et al, 2010). There are clear similarities between selection, optimisation and compensation theory (Baltes, 1997; Baltes & Baltes, 1990) and Heckhausen et al's (2010) motivational theory of lifespan development, although they vary in the way in which they explain the actions of the individual in coping with the age-related challenges, with the latter postulating that the changes in goal focus result from the interplay of primary control (control over own environment and the ability to change the world to suit one's own needs and wishes) and secondary control (control over oneself in order to adapt one's current state of being to suit the demands of the environment) mechanisms (Rothbaum, Weisz & Snyder, 1982), with acceptance of loss of primary control with increasing age (Heckhausen, Dixon & Baltes, 1989), being gradually replaced across the lifespan by secondary control.

Kanfer & Ackerman (2004)

Kanfer & Ackerman's (2004) work utilised a lifespan approach to develop an age-based framework which sought to explain changes in work motivation as workers age. This had its roots in the concepts of fluid and crystallised intelligence and how these affect not only cognitive ability but also personality traits, an individual's vocational interests and drive, and their self-identity (Kanfer & Ackerman, 2004). This framework explained the changes across the lifespan in four patterns of change; loss, growth, reorganisation, and finally exchange. *Loss* defines decremental changes in fluid ability over the lifespan, characterised by losses in working memory and attention (Cattell, 1971), *growth* defines the positive relation between age and personal resources which accumulate as a result of experience or crystallised intelligence (Cattell, 1971), which allows workers to be selective about the jobs and tasks they undertake. The third approach, *reorganisation,* refers to the reorganisation of traits

other than those relating to ability across adulthood, for example, the reorganisation of goal priority hierarchies. The final pattern, *exchange,* refers to the way in which motivations and thus actions change with increasing age, for example, in younger people generativity is not a well-developed trait and therefore generative actions are not prominent in this group, instead developing in midlife (e.g. McAdam, de St. Aubin & Logan, 1993). Similarly, self-esteem and emotional stability increase gradually in the adult years (Roberts, Walton & Viechtbauer, 2006), which may result in greater work motivation (Robins, Trzesniewski, Tract, Gosling & Potter, 2002).

Brandtstädter & Rothermund's (2002) two-process framework

In their 2002 publication, Brandtstädter & Rothermund proposed a two-process framework which explained the way in which individuals 'negotiate the conflicting demands of ensuring a stable pursuit of goals and plans which adjusting to changes which affect their attainability' (Brandtstädter & Rothermund, 2002, p. 117). Their model postulates that there are two principle methods or processes to reduce or eliminate discrepancies between the desired and actual outcomes of situations or developmental outcomes. These are the *assimilative mode*, in which individuals make deliberate efforts to change the situation or environmental conditions to meet personal goals, and the *accommodative mode*, in which individuals actively adjust goals to take into account constraints and changes in available resources.

The theory of selection, optimisation and compensation (Baltes & Carstensen. 1996; Baltes, 1997, Heckhausen et al's, (2010) motivational theory of lifespan development, and Brandtstädter & Rothermund's (2002) two-process framework focus on explaining the responses of individuals and groups to a mismatch between goals and resources, while Kanfer & Ackerman's (2004) framework explains age-related changes in motivation.

However, none of them specifically examine or explain the underlying psychological mechanisms which might account for the changes in goal direction. This is the principle difference between these lifespan theories and socioemotional selectivity theory (SST: Carstensen, Isaacowitz & Charles, 1999) which is discussed in greater detail in the next section. Socioemotional selectivity theory forms the basis for the theoretical framework for this thesis.

2.5. Socioemotional selectivity and its effects: An overview and discussion of the theoretical framework for his study

This first section discusses the conceptual model for this study as a whole, and explains how the variables relate to each other theoretically. This section ends with a series of hypotheses H1a – H1g, which relate to the direct relationships between the independent variable chronological age in years (AGE) and each of the dependent variables. A conceptual diagram showing these hypothesised direct effects may be found on page 68.

The remainder of this literature review reflects the serial mediation analyses, and therefore deals with each step of the model in turn, hypothesising the direct and mediation effects for each step. This approach is acceptable when there are multiple dependent variables (Hayes, 2018, pp. 145-6). The final section addresses the hypothesised interaction effects of perceived human resource system strength on the relationships between respectively, open-ended future time perspective and limited future time perspective, and developmental goal orientation.

Socioemotional selectivity theory

In young people, mental and physical health are strongly positively correlated. However, as age increases, this association weakens so that although older people tend to experience a decline in their physical health, their subjective well-being improves or is maintained as they progress through adulthood (Diener & Suh, 1997; Horley & Lavery, 1995). This disconnect

between the effect of age on mind and body is known as the 'paradox of aging' (Löckenhoff & Carstensen, 2004). Socioemotional selectivity theory (SST: Carstensen, 1991, 1993, 1995; Carstensen, Isaacowitz & Charles, 1999) offers an explanation for this, postulating that the root cause of the phenomenon lies in motivation, and how this changes over time in response to changed time horizons, and manifests as a gradual change from being primarily concerned with and motivated toward developmental and resource-building objectives when the time horizon is extensive, to being more focused on goals which have more emotionally-satisfying returns when the future is perceived as limited.

Another outcome of this time-perspective change which occurs with aging is the predominant utilisation of emotionally-focused coping strategies over problem-focused strategies, and greater attention being paid to any positive emotional elements in situations which do arise, so greater emotional well-being results. This also influences efforts to maintain emotionally-satisfying social networks (Fung, Carstensen & Lang, 2001) with fewer peripheral social partners as individuals get older, but maintaining the integrity of close social partner networks. This is not a sudden change as people become older, but rather a gradual change with the greatest rate of change occurring in the 30s and 40s age groups, long before old age might explain them (English & Carstensen, 2014).

When choosing goals to pursue, there may be a trade-off between the enhancement of immediate emotional status and providing a solid foundation for the future, and there is evidence (Löckenhoff & Carstensen, 2004) that this emphasis on pursuing immediate positive emotional results may be at the cost of longer term benefits, such as in healthcare choices; older people may choose to ignore 'bad news' warnings about their health, preferring instead to do nothing and risk losing the opportunity to take effective actions (Löckenhoff & Carstensen, 2004; Zhang, Fung & Ching, 2009).

Cognitive processes are affected by increasingly emotion-laden goals; if there is a tendency to favour positive material and that with an emotional message, this will consequentially affect where an individual exerts the greatest attention and the memories they lay down from those experiences, with older people tending to recall positive information with greater accuracy than they do negative information (Charles, Mather & Carstensen, 2003; Mather & Carstensen, 2003). This effect is also observable for autobiographical memory (Löckenhoff & Carstensen, 2004), and is known as the positivity effect (PE). Those who have a positive outlook as a result of this, tend to experience positive emotional experiences rather than negative, and these are usually more intense and better remembered.

Figure 2.1: The conceptual framework for this thesis, with hypothesised direct effects
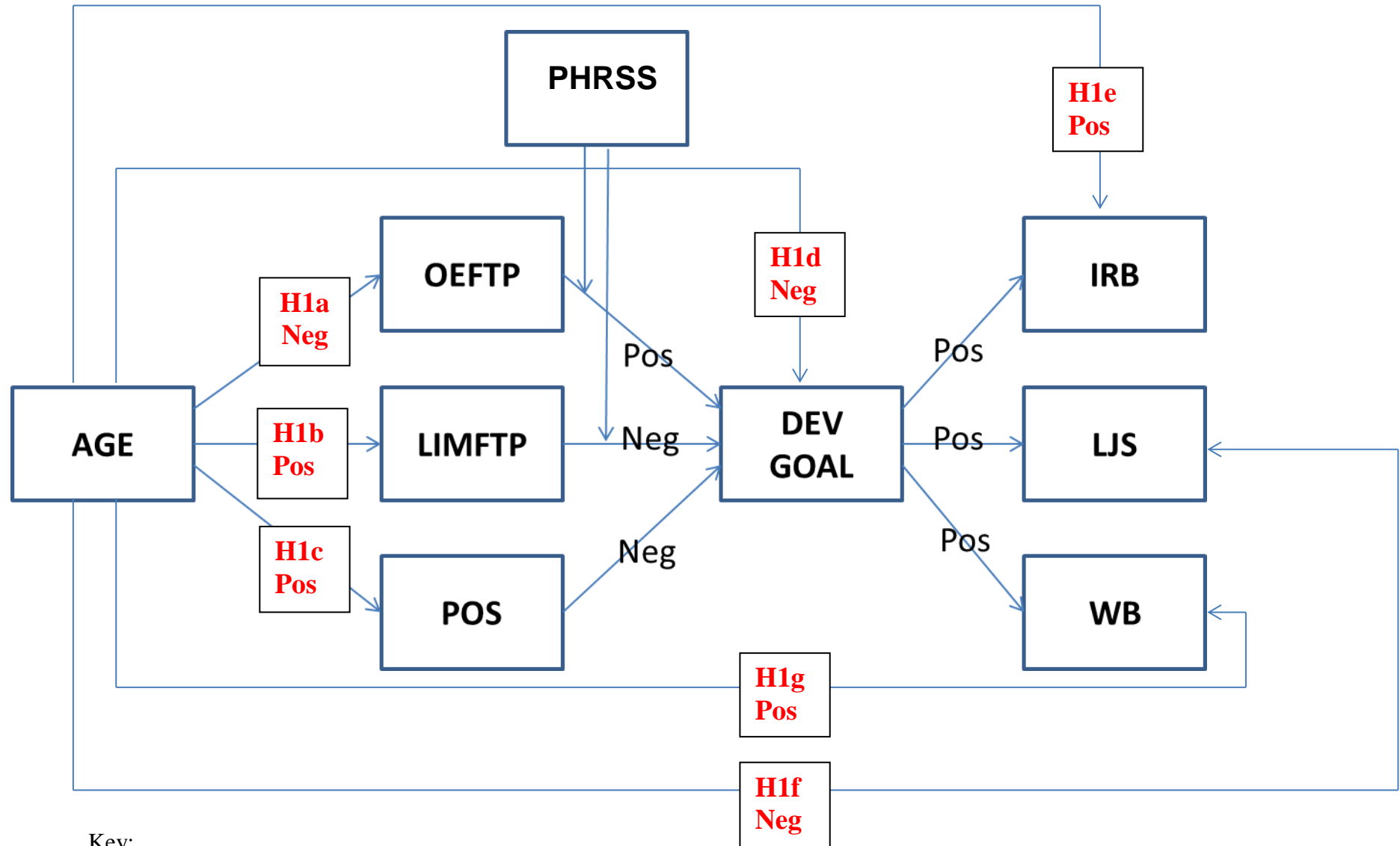
Key:
AGE = Chronological age, in years   OEFTP = Open-ended future time perspective   LIMFTP = Limited future time perspective
POS = Positivity   DEV GOAL = Developmental goal orientation   IRB = In-role performance behaviours
LJS = Learning job satisfaction   WB = Mental well-being   PHRSS = Perceptions of human resource system strength

Socioemotional Selectivity Theory: Future time perspective

Human beings have monitored the passing of time using the moon and other celestial bodies

for millennia (Aveni, 1995: Marshack, 1972) and although time is viewed differentially in

different cultures, nevertheless time as a controlling framework is universally utilised across

all peoples and cultures (Carstensen et al., 1999).

Whilst a perception of time has been the focus of many disciplines e.g. anthropology,

astronomy, physics and philosophy, there has been relatively little attention from scholars of

psychology and the social sciences (Carstensen et al., 1999); Given that the passing of time

is a generally-accepted measure, and chronological age constitutes a personal time-marker,

Birren & Cunningham (1985) argue that the implications for psychology are far-reaching,

because time is the framework around which goals are formulated. Moreover, as individuals

live their life, they eventually become aware that time, for them, is running out for certain

aspects of their life, and thus they increasingly regard time as limited, rather than open-ended

or expansive. With that change comes adaptation and reprioritisation of goals, with older

adults formulating fewer knowledge-seeking goals, and more emotionally-meaningful goals

than younger people (Fung & Carstensen, 2006).

Socioemotional selectivity theory (SST; Carstensen, 1993; 1995) postulates that future time

perspective (FTP: the time an individual perceives they have remaining to live; Carstensen,

1995; Lang & Carstensen, 2002) is an intrinsic, underpinning concept for the theory, and that

individuals choose goals in congruence with their perception of their FTP at any point (Lang

& Carstensen, 2002). Thus SST with FTP at its core provides a mechanism to account for

age-related motivational differences, apart from the physical and cognitive decline

associated with advancing age (Liao & Carstensen, 2018). In 1951, Lewin, who was the first

to express the concept, defined a time perspective as 'the totality of the individual's views of

his psychological future and his psychological past existing at a given time …' (Lewin, 1951, p. 75) and pointed out that this perception was strong enough to drive behaviour in people of all ages, according to their hopes, fears and expectations, and how they perceive their future fitting with these (Lewin, 1951). Thus FTP's influence as being an integral and critical element in human motivation is established (Coudin & Lima, 2011). There is evidence (Barber & Tan, 2018) that negative stereotyping of older people – ageism – also affects FTP, with those who have been subject to negative age-based stereotypes having reduced FTP, and consequentially, see their future as having fewer opportunities.

It is not just age which affects time perspective; other life events also change FTP (Carstensen & Fredrickson, 1998; Fung, Carstensen & Lutz, 1999; Fung, Lai, & Ng, 2001; Löckenhoff & Carstensen, 2004) including relocation, college graduation (Fredrickson, 1995), and deterioration in health conditions. Indeed, the effect can be observed in almost any situation which precedes and predicts an ending of some sort.

In their initial work, Carstensen and her colleagues (Carstensen 1991, 1993 1998; Carstensen, Gross & Fung, 1997) defined FTP as a bipolar continuum ranging from an expansive FTP at one extreme, where the person feels there is a lot of time to do whatever one wants to do, to limited FTP, which is characterised by the feeling that time is running out (Fung et al, 2001; Lang & Carstensen, 2002). However, others (Cate & John ,2007; Cozzolino, Sheldon, Schachtman & Meyers, 2009; Kooij, de Lange, Jansen & Dikkers, 2013) argue, based on their empirical findings, that FTP is in fact a two-factor construct with separate dimensions of open-ended FTP, which focuses on future opportunities, and limited FTP, which focuses on perceived future limitations. This bi-dimensional conceptualisation of FTP allows for each dimension to vary discretely with age, thus it is possible for a person to be simultaneously high on both open-ended FTP and limited FTP, such as might be

important in middle age when someone is aware of the reducing time left but still feels that their life offers many worthwhile opportunities. Similarly, there may be circumstances where an individual feels that although they still have plenty of time left (low limited FTP), that the time that they do have is not likely to present many worthwhile opportunities (low open-ended FTP), such as might be found in a person with challenges, such as a disability or chronic illness which prevents them taking advantage of those opportunities which do arise.

The predicted pattern of variation in FTP as a single bipolar construct in response to changes in age is that as individuals age, their FTP reduces so their view of the future changes from expansive to limited. When FTP is viewed as a two-dimensional construct, of open-ended FTP and limited FTP, it is logical to argue that generally younger people will be higher on open-ended FTP and lower on limited FTP, while for older people the opposite pattern will prevail; as age increases open-ended FTP (OEFTP) reduces and limited FTP (LIMFTP) increases.

Zacher & Frese (2009) developed the concept of occupational future time perspective (OFTP), which they argued was made up of the time left in work specifically and the opportunities afforded to workers. Zacher & Frese's (2009) findings indicated that age is negatively related to both of these components of OFTP, while work opportunities and complexity of work were both positively related to perceived remaining opportunities, and moderated the relationship between age and remaining opportunities, causing the relationship to weaken with increasing levels of job complexity and job control. In examining the relationship between FTP and work commitment, Treadway, Duke, Perrewé, Breland & Goodman (2011) found that individuals specifically choose between devoting time and effort to either their work or their family according to their time perspective.

The single dimension and the two-dimensional conceptualisation employee of future time perspective is explored in Study 1, but it is the latter conceptualisation which forms the basis of the conceptual framework for the main study, Study 2, as can be seen on page 69.

Socioemotional Selectivity Theory: Goal orientation

One of the most organisationally-significant aspects of socioemotional selectivity theory (Carstensen 1993, 1995, 1998) is its assertions about how goal orientation changes with reducing future time perspective as people age. It postulates that although individuals strive for the same goals across the lifespan – namely the need to feel needed, seeking out novel situations, and expanding horizons – the valence of these, and therefore the prioritisation of the goals, changes according to the individual's perception of time left in life, which is of course directly related to age.

The explanation for this is that individuals' future time perspective changes both with age, and also with certain contexts or situations. Thus, when the future is perceived as expansive (OEFTP), that there is a large amount of time left, individuals naturally choose goals which prepare them to capitalise on that long future, such as those goals which help the individual to acquire information, goals geared toward personal development, and social goals aimed at developing social networks which will be useful in the future. Future-orientated goals also include learning about health-related matters which will support ongoing physical health, including routine screening and inoculations, following a healthy diet and a suitable exercise regime to optimise the chances of enjoying the time available (Löckenhoff & Carstensen, 2004).

Contrastingly, when the future is perceived as limited (LIMFTP), emotional meaning becomes more salient, and thus present-orientated goals aimed at gaining the greatest emotional satisfaction from the immediate present are prioritised. This includes goals aimed at emotional regulation by avoiding negative experiences and states, and at intensifying the

positive experiences, as described in the earlier section about the positivity effect. This may involve a complex variety of emotions, particularly when the objective is to pass on one's knowledge to others, especially younger or less experienced people, a practice known as generativity (Lang & Carstensen, 2002).

It is important to consider the role that motivation plays in driving goals, where motivation is generally accepted and defined as the 'energy, direction and persistence of behaviour' in pursuing chosen goals (Howard, Gagne, Morin, Van den Broeck, 2016, p. 74). Thus goal orientation, or the way in which individuals approach, interpret and respond to situations which offer performance potential (Janssen & Van Yperen, 2004) will determine the degree to which individual outcomes are realised.

Many lifespan theories are directly concerned with how, with advancing age, goals are differentially chosen, and resources applied to their achievement (e.g. Selection, Optimisation, and Compensation: Baltes & Carstensen, 1996; Baltes, 1997: The Motivational theory of Lifespan Development: Heckhausen et al., 2010). However, unlike these constructs and frameworks which focus on the *effects* of the aging process, socioemotional selectivity theory seeks to explain *how* individual differences in time perspective affect the mental and emotional processes involved in the formulation of those goals, thus providing an explanation for the differences and the motivation which drive them. For example, having an extensive perception of one's future could produce the motivational drive to attempt to both prevent negative outcomes, and at the same time, to optimise the chances of a positive future.

Socioemotional selectivity theory therefore predicts how changes in time perspective alter the relative priorities given to different goal types across the lifespan. There are many

examples of where it is perfectly concordant to be simultaneously pursuing both short-term, present-orientated goals and longer term, future-orientated goals – for example, an individual might be actively undertaking a vocational qualification with the short-term aim of gaining a salary rise on completion of the award, but also with the longer term objective of securing better career prospects; these are perfectly congruent goals. However, when goals compete with each other for the person's motivation and resources, SST offers an explanation for the underlying psychological processes that are likely to determine the outcome of the conflict. An example of this might be when a person is offered a longer-term developmental opportunity, but this entails leaving behind the close-knit and efficient team with whom they have worked for some time, and with whom the person has close friendships and trust - a present-orientated and emotionally-satisfying situation. A younger person is more likely to take the opportunity, while this might seem less attractive to an older person, who may well decide to remain in their current situation.

This shift in goal orientation with increasing age manifests as a decline in information-seeking behaviours (Löckenhoff & Carstensen, 2004), as there is no perceived need for planning or laying in resource for a limited future. Lang & Carstensen (2002) observed this when asking both younger and older people to prioritise and rate the importance of various plans and goals, with younger adults placing greater weight on career development and knowledge-gathering, while the older adults prioritised those goals which provided emotional satisfaction. This reduction in knowledge-seeking also affects the way in which older people make other decisions; they are less likely to explore all the available information prior to making decisions about, for example, buying a car or when dealing with interpersonal problems (Berg, Meegan & Klaczynski, 1999), so the decisions made may not be the best choices and may result in negative outcomes (Willis, Dolan & Bertrand, 1999).

In her 1986 work, Carol Dweck introduced goal orientation theory (Dweck, 1986), which provided insights into the reasons for achievement motivation. Dweck's (1986) theory postulates two forms of motivation; learning (mastery) goal orientation, and performance goal orientation. A mastery, or learning, orientation focuses on the need to learn in order to develop competence within a specific domain. A performance goal orientation, on the other hand is focused just on demonstrating competence at the current level of performance (Dweck & Leggett, 1988; Elliot & Dweck, 1988). These two states have parallels to the single and double loop learning model (Argyris, 1976) where single loop learning equates to performance goal orientation and double loop learning equates to mastery or learning goal orientation.

There are clear differences between the goal orientations defined by Dweck and her colleagues, and those defined by Carstensen and her colleagues, and this necessitated and justified the separate development of an adapted measurement instrument within this study (see Study 1). Dweck's (1986) learning, or mastery, goal orientation is domain specific (Dweck & Leggett, 1988), and the focus of Dweck's goal orientation is on the challenge in the task and the level of effort expended, and how these influence success or failure; according to VandeWalle, (1997, 2001) individuals who are high on learning goal orientation as defined by Dweck (1986) and Dweck and Leggett, (1988) seek personal development by adding to their skills and knowledge about a specific role, task or competence, and who support the view that ability is incremental and thus can be increased by greater effort and perseverance. There are many and various conceptualisations and operationalisations of constructs of motivation to achieve, of which Dweck's goal orientation is one, and Carstensen and her colleagues is another. Often the differences between these conceptualisations are great enough to require individual researchers to clarify the specific definition of the construct they are using (Vandewalle, Nerstad & Dysvik, 2019).

These include learning and performance goal orientation (Button, Mathieu & Zajac, 1996; Dweck, 1986), and task and ego orientation (Nicholls, 1984). Wandewalle's (1997) three-factor model utilises the terms learning, performance-prove and performance-avoid goal orientations, whereas Elliot & Church (1997), who also developed a three-factor model based on achievement goals, which they referred to as mastery-approach, performance-approach and performance-avoidance achievement goals. As Wandewalle et al (2019) point out, although scholars may treat the factors from these various models as equivalent, 'the asymmetry of the definitions and the assessment instruments used for various achievement motivation models, the empirical findings utilising each achievement motivation model can diverge' (p. 121).

When the conceptual and factor structure of Carstensen's developmental goal orientation is examined, it is clear that with its focus on social acceptance and autonomy, these are distinct factors which have no similarity to those previously operationalised in the goal orientation research arena and literature; social acceptance focuses on having close friendships and social inclusion, and autonomy focuses on being financially and emotionally independent, being well-educated and receiving social approval for one's work.

The effects of socioemotional selectivity can still be observed in studies which use a different conceptualisation of goal orientation, even though SST is not explicitly used in these as a framework. For example, De Lange, Van Yperen, Van der Heijden & Bal (2010) suggest that older people are more likely to embrace intrinsic, mastery-avoidance goals when compared with younger people, where 'mastery-avoidance' is defined as those goals which focus on 'avoidance of task-based and intra-personal standards of incompetence' (p. 119), and also on generativity which is a focus on the development or coaching of others. Furthermore, they found that when older workers did have a dominant learning-approach

goals, they scored highest in work engagement (a positive affective-motivational state of mind: De Lange et al., 2010. pp. 119-120), and the social and personal meaning of work (Mor-Barak, 1995), whereas those who scored highest on learning-avoidance goals scored lowest in these outcome variables. This is important in an organisational context because these have been linked to work performance and creativity, and have been demonstrated to be critical factors in the maintenance of well-being and productivity of workers (Bakker, 2008; De Lange, De Witte & Notelaers, 2008; Ng & Feldman, 2008). This avoidance orientation in older workers is linked to impedance of core task performance (Ng & Feldman, 2013a), to a lesser focus on future-orientated opportunities in the workplace (Zacher & Frese, 2011; Zacher, Heusner, Schmitz, Zwierzanska & Frese, 2011) and damages the reputation of older workers in the view of younger colleagues (Hassel & Perrewe, 1995). Of particular significance, and in accordance with socioemotional selectivity, older people reported a lower number of learning-approach goals, and indeed, in older people learning-avoidance goals was the highest incidence goal of all four classes (De Lange et al., 2010).

This study speaks to management scholars with an interest in the aging workforce, and also HRM practitioners, by extending what we know about the nature of goal orientation and how it can be influenced by external factors. It also extends our understanding of the features of SST, and how these features are related, and the nature of their relationship.

Socioemotional Selectivity Theory: The positivity effect

The second main effect of socioemotional selectivity is the positivity effect (PE). This is an age-related concept which postulates that older people typically display an enhanced cognitive acuity for emotionally positive information, relative to either negative or neutral information. This is another direct effect of age, according to SST, and is observed in many domains, including visual attention (Isaacowitz, Wadlinger, Goren & Wilson, 2006), decision-making (Löckenhoff & Carstensen, 2004; 2007), memory (Charles, Mather &

Carstensen, 2003; Mikels, Larkin, Rueuter-Lorenz & Carstensen, 2005), and social cognition (Carstensen & Frederickson, 1998; Fung, Carstensen & Lutz, 1999). Research has also identified that younger people display preferential attention and memory for negatively-charged emotional information, rather than positive or neutral material (Rozin & Royzman, 2001). In combination, therefore, this suggests that the priority attaching to information processing changes from being negatively-focused in younger people to being more positively focused with advancing age (Kan, Garrison, Drummey, Emmert Jr. & Rogers, 2018), although there have been some exceptions to this finding (for example, Gallo, Foster & Johnson, 2009; Grady, Hongwanishkul, Keightley, Lee & Hasher, 2007). This is in agreement with the central tenets of socioemotional selectivity theory (Carstensen, 1991), which posits that as we age, there is a greater urgency about regulating emotions to maintain emotional well-being rather than laying-in resource for the future, and to achieve this it is necessary to prioritise and show enhanced cognitive processing of positive stimuli, rather than negative ones, which gives rise to the positivity effect (Carstensen, 2006; Charles, Mather & Carstensen, 2003), which is characterised by older people having more, and more intense, positive emotional experiences.

In their 2000 study, Carstensen and her colleagues (Carstensen, Pasupathi, Mayr & Nesselroade, 2000) used a diary study method to record the experienced emotions of a multi-age sample of participants. They found that in accordance with the theoretical assertions of the positivity effect, negative emotional experiences reduced in number until approximately age 60, after which they stabilised. Moreover, in older people the highly positive emotional experiences endured, while the negative emotional experiences were more readily forgotten. This results in more positive than negative emotional experiences being remembered, and an overall more positive outlook for older people. Taken together, these findings show the age effect on positive emotional experience.

The positivity effect (Carstensen & Mikels, 2005; Carstensen & DeLiema, 2018; Mather & Carstensen, 2005), also means that for older people, greater value is placed on emotionally-meaningful goals (for example, Carstensen, Isaacowitz & Charles, 1999), and therefore less value is placed on developmental goals and they are less motivated to achieve these (Vroom, 1964). Therefore, greater resources - attention and memory – will be expended on trying to achieve goals which are congruent with the current life-stage of the individual (Reed, 2014). Logically, therefore, older people who are high in positivity are less likely to be motivated toward achieving developmentally-salient goals.

The next section introduces the individual-level outcomes, and explains how they vary in accordance with the tenets of socioemotional selectivity, thus completing the proposed conceptual model (p. 69).

In-role core task performance-related behaviours

Individual, and therefore organisational performance are central to human resource management and the development of organisationally-critical attitudes and competencies, such as those measured in this work; in-role performance behaviours, satisfaction with the learning opportunities provided by their employer, and employee mental well-being, may be pivotal in encouraging and supporting performance.

De Lange et al., (2010) demonstrated a positive relationship between learning goals and work engagement, and the social and personal meaning of work, while Heidemeier & Staudinger (2014) similarly found a positive relationship between learning-approach goals (Elliot, 1999; Elliot & McGregor, 2001; Elliot & Murayama, 2008) and intrinsic satisfaction with work tasks. Porath & Bateman (2006) observed that learning goal orientation predicted subsequent performance in sales personnel, with self-regulation as a mediating variable. Interestingly,

they also found emotional control which according to SST is more common in older workers was negatively related to sales performance (Porath & Batement, 2006), suggesting that younger salespeople are likely to be more successful than their older colleagues. Gardner, Diesen, Hogg & Huerta (2016) also found a positive relationship between learning goal orientation and performance improvement, while Chugtai & Buckley (2010) noted that learning goal orientation mediates the positive effects of organisational identification on in-role job performance, as well as error communication, which can be viewed as an organisational citizenship behaviour, and also feedback-seeking.

The importance of learning goal orientation in an organisational context was highlighted by Dragoni, Tesluk, Russell & Oh (2009), who examined the level of developmental challenge in management assignments, and how this interacted with a learning goal orientation to produce superior 'end state competencies' (p. 731). Runhaar, Sanders & Yang (2010) and Chugtai & Buckley (2010) found positive interrelationships between learning goal orientation, occupational self-efficacy and feedback-asking, while Pieterse, van Knippenberg & van Ginkel (2011) related member goal orientation to team functioning, and Chadwick & Raver (2015) to organisational learning.. Similarly, Setti, Dordoni, Piccoli, Bellotto & Argentero (2005) found support for their hypothesis that a learning goal orientation mediates the relationship between proactive personality and learning motivation, and Potosky & Ramakrishna (2002) found a positive association between a learning goal orientation and job performance.

The prediction of superior in-role performance behaviours by a developmental goal orientation is in harmony with socioemotional selectivity; those who are seeking developmental opportunities and mastery are also likely to have longer time horizons and are focused on personal advancement and excellence. This attitude, and the effort expended on

development is also likely to result in improvement in, and maintenance of, in-role job performance.

Satisfaction with learning opportunities (job training satisfaction)

Job training satisfaction is defined as,

> *'the extent to which people like or dislike the set of planned activities organised to develop the knowledge, skills, and attitudes required to effectively perform a given task or job'*
>
> (Schmidt, 2007, p. 483)

Like job satisfaction, it is made up of several constructs, and measures the overall perceptions of the employees about the formal learning and training opportunities provided by their employer, not simply their opinion about a single learning event or training course. This definition was derived by Schmidt (2007) synthesising Landy's (1985) definition of job training, and Spector's (1997) definition of job satisfaction. A survey of over 2500 US and Canadian employees revealed that 80% of respondents *cited the provision of training which improves and enhances their skills and abilities*, was a major element in employment decisions (What Drives Employee Satisfaction, 2001), and Blum & Kaplan (2000) found that the opportunity to learn new skills was the single most important element of job satisfaction. Similarly, Shields & Ward (2001) found that amongst nurses in the UK, dissatisfaction with training and promotion opportunities was a greater influencing factor than dissatisfaction with either pay or workload. Clearly, this is an important organisational consideration, given the importance placed on employee job satisfaction and that training may 'induce positive or negative impressions and attitudes [which] trainees carry with them into the workplace' (Tannenbaum, Mathieu, Salas & Cannon-Bowers, 1991, p. 767). As Ng & Feldman (2010) point out, when an individual develops a [more] positive attitude toward something, they also tend to show more favourable behaviours toward the subject, with the overall relationship between attitudes and all kinds of behaviours being strongly positive ($r=.41$, $p <.05$: Wallace, Paulson, Lord & Bond, 2005). One study which clearly supported

this view, that of Kooij & Zacher (2016) showed that generally those who have lower levels of learning goal orientation also have a less positive attitude to learning and development.

Considering the postulated effects of socioemotional selectivity, perceived time limitations and the effect of those on a developmental goal orientation, organisational FTP is an important construct in the context of the greying of the workforce (Henry, Zacher & Desmette, 2017). The way in which this affects preferences for learning and development, and the resultant satisfaction which may or may not follow; Rudolph, Kooij, Rauvola & Zacher (2018) found a developmental goal orientation, in association with high levels of open-ended FTP, has positive associations with job satisfaction, work continuation intentions, work engagement, achievement motivations, and task and contextual performance, and negative relationships with retirement intention and emotional exhaustion. However, organisational commitment was positively related only to a focus on opportunities (Rudolph et al., 2018). In their conceptual paper, Truxillo et al. (2012) postulated that in line with SOC and in agreement with Schleicher et al., (2004), the increased burden on the fluid abilities of older workers, in the form of increased job complexity, information-processing requirements, and problem-solving demands would lead to reduced satisfaction, engagement and performance in older workers while the opportunity to use these workplace characteristics provided younger workers with the opportunities to accumulate new job skills, thus increasing their job satisfaction and engagement. Conversely, these job characteristics also allow older workers to use their greater experiential knowledge (Vasconcelos, 2018), thus capitalising on their accumulated crystallised knowledge, which they suggest would lead to increased job satisfaction and engagement in older workers. However, as Truxillo et al. (*op cit*) state, the necessity for these areas to be explored empirically is clear, especially to better identify and understand the many and varied covariates which make the age –> job outcomes interactions so complex.

Although age is more usually positively related to job satisfaction overall, and bearing in mind that Schmidt (2009) found no significant relationship between age and satisfaction with job training, it is necessary to consider the individual elements which make up 'satisfaction', particularly those which relate to learning and development opportunities, and to examine these through the lenses of socioemotional selectivity, and in the context of organisational change. According to SST, as has been discussed, as people age they become increasingly less motivated toward developmental goals, and more toward those which provide emotional satisfaction. This is likely therefore to result in less attraction toward learning and training initiatives, and when employees are compelled to join training or organised learning activities, they are less likely to find them rewarding and useful as they do not generally contribute to achieving the dominant goal orientation for the life-stage of these older workers, that of emotional satisfaction and stability. Moreover, when a backdrop of organisational change is also considered, where previous work experience may have little or no relevance to the job role now being carried out, it can be seen that older workers who rely on their prior work experience to help them to adapt to novel work situations will find that the deleterious effects of cognitive aging, especially in their fluid ability (Jeske & Roßnagel, 2014; Schleicher et al, 2004; Truxillo et al., 2012), will outweigh the positive experiential effects found by Vasconcelos (2018). This effect is likely to be greatest when age is higher, and thus goal orientation is less likely to be developmentally-orientated.

Employee mental well-being

As previously defined, the World Health Organisation (WHO: 2018) state that,

> *'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. An important implication of this definition is that mental health is more than just the absence of mental disorders or disabilities. Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community.'*

> (World Health Organisation, 2018)

This holistic view of mental health and well-being is important; it encompasses dimensions of both positive affect, in feelings of interest, joy, alertness and enthusiasm, and those of negative affect, such as anxiety, worry, depression, and other symptoms of psychological distress (Peeters & van Emmerik, 2008), which, when the dimensions are measured longitudinally, appear to be relatively independent of each other (Watson & Tellegen, 1985). However, there appears to be contradictory empirical evidence and opinion relating to the relationships between age and both positive and negative affect (Peeters & van Emmerik, 2008), which they attribute to the influence and complexity of other socio-demographic, contextual, and personality variables and their interactions. The complexity of the antecedents of mental well-being need to be considered, therefore this section of the thesis examines the role of age, physical health, and perceived losses and gains in determining mental well-being, and also of goal orientation according to SST.

While there is overwhelming evidence of age-related decline in physical health, which has been discussed in some depth earlier in this review, the relationship between age and mental health appears less clear cut; physical and mental health have been demonstrated to co-vary (Gana et al., 2013) as aging occurs, but bi-directional causality appears to be possible; Awareness of negative Age-Related Change (AARC-Losses: Diehl & Wahl, 2010) and failing physical ability may lead to unhappiness, clinical or non-clinical depression and loss of self-esteem. Or the opposite effects may be observed if Awareness of positive Age-Related Change (AARC-Gains) is apparent (Wagner, Lüdtke, Jonkmann & Trautwein, 2013). Counter-directionally, declining mental health, manifesting as such conditions as anxiety may exacerbate physical health problems through stress-related conditions such as high blood pressure and loss of normal sleep patterns (Ng & Feldman, 2013a). Ng & Feldman's (2013b) work refutes any negative effect of age however, demonstrating small significant negative relationships between age and poorer mental health, more frequent

negative moods, fewer positive moods, depression, anger and irritation, and concluding that older workers have neither poorer mental health nor do they experience a greater incidence of psychosomatic symptoms (Ng & Feldman, 2013b).

As proposed by the selection, optimisation, and compensation model (SOC: Baltes & Baltes, 1990), functionality and performance may be preserved for a limited period as people age, by the careful selection of goals, followed by optimisation of resources and the use of compensatory strategies. This accommodative approach has been shown to help maintain performance levels and preserve self-perceived efficacy (Brandstädter & Rothermund, 2002), thus contributing to positive mental well-being. Although eventually the decline will outstrip the rate at which an individual can strategically employ SOC measures, this is unlikely to occur until old age (rather than just being an 'older adult', defined in this thesis as over the age of 50), and at least not before age 65 (Ng & Feldman, 2013a), so the negative effects of physical decline are unlikely to be apparent in older people of working age, unless they remain in work until very old age.

Moreover, socioemotional selectivity theory (SST: Carstensen 1991, 1992; Carstensen, Isaacowitz & Charles, 1999) suggests that the positivity effect will result in better mental well-being as people age. SST is characterised by the prioritisation and more comprehensive processing of positive emotional experiences and stimuli in older people, whilst reducing the duration and impact of negative emotional experiences which will result in an overall gain in positive effect, and greater positive feelings of happiness and contentment. This is in contrast to younger people, who tend to have a greater focus on negative stimuli. This negative focus 'fades with age' (Carstensen & DeLiema, 2018, p. 7), allowing the more positive experiences to predominate. This effect appears to be a natural part of aging, is reliable and consistent across studies (Reed et al, 2014), and is consistent across time, with the changing

effects being demonstrated in a longitudinal three-wave study (Carstensen, Turan, Scheibe, Ram, Ersner-Hershfield, Samanez-Larkin, Brooks & Nesselroade, 2011). In agreement with Wagner et al.'s (2013) assertion that a positive mindset has a consequential positive effect on physical well-being, Kalokerinos, von Hippel, Henry & Trivers (2014) found a positive relationship between the prevalence of positive emotions and effective immune system functioning. Following the same logic of bi-directional causality of negative effect, this improvement in physical health will also improve mental well-being. In conclusion, aging has been found to be associated with greater overall positive emotional and mental well-being, and with greater emotional stability and control, leading to higher levels of positive emotional experience.

With an increase in the pace and incidence of organisational change (Kozlowski et al., 2001), there is increased pressure on workers to learn. This exerts emotional pressure on the workers, who may struggle to cope with and adapt to their changed roles (Antonacopoulou & Gabriel, 2001). It follows that those who have a developmental goal orientation will experience less stress than those who are low on this dimension and who may be focused instead on emotional regulation and emotionally-rewarding goals. In other words, they will experience goal incongruence which may result in stress and anxiety, which will ultimately lead to a reduction in job satisfaction, and higher turnover (Hoffman & Woehr, 2006; Kristoff-Brown, Zimmerman & Johnson, 2005). Conversely, those who are high in development goal orientation during periods of organisational change are less likely to suffer adverse mental well-being effects (Caldwell, Herold & Fedor, 2004).

2.6. Hypotheses relating to the direct relationships between age, the elements of socioemotional selectivity theory (Carstensen 1993, 1995, 1998), and the outcome variables for Study 2

To avoid repetition, the evidence for the following hypotheses has not been repeated here, as it has already been presented in the previous section. However, the hypotheses for the direct relationships between age, the elements of socioemotional selectivity theory, and the dependent outcome variables – in-role performance behaviours, satisfaction with learning opportunities, and mental well-being are developed These may be seen diagrammatically on Fig 2.1 on page 69.

H1a: Employee age (AGE) is negatively related to an open-ended future time perspective (OEFTP);

H1b: Employee age (AGE) is positively related to a limited future time perspective (LIMFTP);

H1c: Employee age (AGE) is positively related to employee positive emotional experience (POS);

H1d: Employee age (AGE) is negatively related to employee developmental goal orientation (DEV GOAL);

H1e: Employee age (AGE) is positively related to employee in-role performance behaviours (IRB);

H1f: Employee age (AGE) is negatively related to employee satisfaction with learning opportunities (LJS);

H1g: Employee age (AGE) is positively related to employee mental well-being (WB).

2.7. The mediation effects

In this section the mediation effects in the conceptual model are hypothesised. Each step in the model is discussed separately, but should be contextualised using the previous section which presented the entire mediation model framed using Socioemotional selectivity s a supporting framework.

2.8. Socioemotional selectivity theory: age, future time perspective, the positivity effect, and goal orientation

The antecedents of goal orientation

The very evolution of human thought and cognition is likely to have been both driven, and guided, by the monitoring of time (Suddendorf & Corballis, 1997), and socioemotional selectivity theory (SST: Carstensen, 1991, 1992, 1993, 1995; Carstensen, Isaacawitz & Charles, 1999) encompasses the influencing role of time in making predictions about how people will prioritise goals and the social contacts they choose. Specifically, Carstensen et al. (1999) argue that the perception of time is 'inevitably linked to the selection and pursuit of goals' (p. 166), and that as chronological age increases so people become increasingly aware of the inextricable link between their increasing age and the reducing time left in life, and that it is this association, rather than age *per se*, which is instrumental in bringing about the apparently age-related changes in selection and prioritisation of social goals (Löckenhoff & Carstensen 2004). However, the link between age and perception of time is so strong that Carstensen (1991, 1992) suggests that age, being easier to measure than time perception, may be used as a proxy for time perception, and thus as a likely indicator of goal orientation, in accordance with SST.

SST is essentially a theory of social pursuits; in their 1999 paper, Carstensen, Isaacowitz & Charles (1999) argue that three core assumptions underlie the principles of the theory; first, a belief that survival depends on social interaction; second, a belief in the agentic nature of

humans, who will selectively engage in behaviours according to the anticipated achievement of goals; and third, that people can have many goals simultaneously, which may at time be conflicting, and that making a selection between the goal options available will then lead to action. Socioemotional selectivity theory holds that it is the perception of an individual of their future as either expansive, or limited, which influences the appraisal process by which they weigh their options, and which then leads to goal selection and ultimately, action to achieve those chosen goals, and that the perception an individual has about their future is normally linked to age, as well as other factors.

Carstensen et al., (1999) argue that a large proportion of social interaction is intended to support the pursuit and acquisition of information, 'geared to learning about the social and physical world' (p. 166), from asking for simple directions to somewhere, to observing somebody carrying out a task to be able to model their behaviour. On the other hand, the pursuit of emotional regulation is also linked to human interaction; learning about, and development of emotions in a social setting underpins human society (Bandura, 2001; Rothbart, 1994).

Unlike many theories of motivation which argue the absolute case, that it is human need which determines the goals which drive behaviour (e.g. Deci, Vallerand, Pelletier & Ryan, 1991; Maslow, 1943; Ryan & Deci, 2000), SST focuses on *how* and *why* these goals drive subsequent behaviour. According to the tenets of the theory, SST posits that all social goals can be classified as either aimed at knowledge acquisition, or at the regulation of emotion and it depends on one's time perspectives as to which of these goal orientations will predominate; it will depend on one's self-perceived future time expansiveness which leads to the ranking of goals, both those aimed at knowledge acquisition and at emotional regulation. Carstensen, Gross & Fung (1997) showed that after infancy and childhood, when knowledge

acquisition-based goals and emotion-based goals are both equally prioritised, the valence (and therefore the prioritisation and resources applied to their achievement) of longer-term developmental, knowledge-based goals gradually reduces, and that of short-term emotion-based goals correspondingly increases; from the point of middle age prioritisation of emotion-based goals increases and developmental-based goals are gradually given less focus. Of course, this age group includes many older workers, who will be remaining economically active for longer and therefore are still present in the workforce.

The theoretically- and empirically-observed differences in time perspective, and the changes in these which occur as people grow older can also be artificially produced in people of all ages, demonstrating that time perspective is plastic, and can be manipulated by introducing confounding externalities in the form of anticipated 'endings'. Examples of these include a study (Carstensen & Fredrickson, 1998) of men, all of whom were aged 37, but with three subgroups whose HIV status differed (HIV-negative, HIV-positive but asymptomatic, HIV-positive and symptomatic with AIDS-related symptoms). Thus each group was similarly aged but had different life expectancies. These differences created the same effects on the subjects' time perspective as age does in otherwise healthy adults, with typical age-related changes being observed in the different groups according to their life expectancy; the HIV-negative group responded typically for their age group, the asymptomatic HIV-positive subjects responded with more of a limited time perspective than the first group, and those subjects who were experiencing AIDS-related symptoms recorded profiles which much more closely resembled the very elderly. Similarly, graduation and the resultant breaking up of a familiar group of college students, and geographical relocation, both represent social 'endings' and introduce temporal constraints. The anticipation of these has also been shown (Fung & Carstensen, 2004) to induce feelings that time is running out, and consequently a similar pattern of goal preferences for emotionally-satisfying and meaningful (Fung &

Carstensen, 2004) goals prevail over developmentally-based goals as is typically found in older adults (Carstensen 1993, 1995; Carstensen et al., 1999). Similar results were obtained by Rabinovich et al. (2010) by experimentally manipulating time perspective to demonstrate the effect on savings intentions, by Kooij, Bal & Kanfer (2014) in their study of age, time perspective and promotion focus, and by Kooij & Zacher (2016) in their work on the relationship between age, FTP and work centrality.

Early research (e.g. Kastenbaum, 1961) into age-related changes in FTP during adulthood supports the earlier work of Lewin (1939, 1951) and the notion that in comparison with older people who are more focused on the past and present, younger people are more future-focused (Lomranz, Friedman, Gitter, Shmotkin & Medini, 1986), that an individual's time perspective may become increasingly limited as they age (Rakowski, 1979) and that the content of FTP changes with age (Bouffard, Baston & Lapierre, 1996). In keeping with this earlier work, and throughout their work on SST, Carstensen and her colleagues (e.g. Fung, Lai & Ng, 2001; Lang & Carstensen, 2002) have conceptualised future time perspective as a unidimensional, bi-polar continuum, with expansive future time perspective at one extreme, represented by the feeling that plenty of time remains to achieve what one wants, and limited time perspective at the opposite end, represented by a feeling that time is running out. More recent studies however, have questioned this structure, driven by studies of FTP during middle age; Cate & John (2007) showed that a two-factor model of FTP provided a better fit than the single factor model previously presented by Carstensen and her colleagues, and that these factors were independent of each other, rather than being bipolar opposites of the same construct. Moreover, these findings that FTP is a two-factor construct were consistent across age groups (Cate &John, 2007). In their study, Cate &John (2007) used just five of the 10 items from the Carstensen & Lang's (1996) FTP Scale (three which were judged to represent an expansive view of FTP, and two which indicate a limited future). They found these to be

a valid and reliable measure of the construct, with clear factor weightings onto the two distinct factors which they named Open-Ended FTP (OEFTP), and Limited FTP (LIMFTP). Open-ended FTP has its focus on perceived opportunities in the future, and Limited FTP on the perceived limitations which people faced. These findings were later replicated by other studies (Cozzolino et al. (2009); Kooij et al., 2013; Kooij & Van de Voorde, 2011; Zacher & Frese, 2009), thus supporting the concept of FTP as a two-factor structure, with one factor focusing on opportunities, and the other on limitations.

In younger people, the perception of time as expansive, with a future filled with opportunities therefore leads to the formulation and motivation to achieve longer-term, developmentally-orientated goals, to lay in resources to maximise the return on investment in those goals in the future. Conversely, as age increases the increasing perception of time as limited results in decreased growth motivations, and greater focus on emotionally-meaningful and satisfying goals.

Therefore I hypothesise:

H2a: Employee open-ended future time perspective (OEFTP) is positively related to employee developmental goal orientation (DEV GOAL), and mediates the negative relationship between employee age (AGE) and developmental goal orientation (DEV GOAL).

H2b: Employee limited future time perspective (LIMFTP) is negatively related to employee developmental goal orientation (DEV GOAL), and mediates the negative relationship between age (AGE) and developmental goal orientation (DEV GOAL).

The findings of studies exploring the relationships between age and emotional reactivity, based on experimental laboratory methods, are mixed, and therefore the inter-relationships

between age and emotional experience and regulation are blurred; Grühn & Scheibe (2008) using a self-report method showed that older people are generally more reactive to emotionally-charged information, regardless of whether it is carrying positive or negative messages, when compared with younger people, but with greater arousal being reported in response to negative images and information. A more objective approach was used by Smith, Hillman & Duley (2005), who measured peripheral and central nervous system responses to emotionally-charged images and found no age-related difference in response other than older people demonstrating a more marked eye-blink startle reflex in response to negative images. In contrast, in their 1991 study, Levenson, Carstensen, Friesen & Elkman (1991) observed lower levels of autonomous nervous system response to emotionally-charged information and images in older people, but in self-report measures of emotional memories the same sample showed no age-related differences. Tsai, Levenson & Carstensen, (2000) also achieved the same results for observation of emotional film clips vs. self-report measures, as did Gavazzeni, Wiens & Fischer (2008) in their study of photographs.

The age-related positivity effect which affects certain cognitive domains such as memory (e.g. Charles et al., 2003; Kennedy, Mather & Carstensen, 2004; Mather & Carstensen, 2003) and attention (e.g. Mather & Carstensen, 2003; Mather, Knight & McCaffrey, 2005) suggests that as people age, they process positive information more favourably compared to negative information, and that in seemingly neutral information, such as in facial expressions, older adults perceive more positive affect (Kellough & Knight, 2012).

In their study of lived-experience, Carstensen et al. (2000), used a sample of men and women aged between 18 and 94 who recorded both the frequency and intensity of their positive and negative emotional experiences over a period of one week. This demonstrated the positivity effect, in accordance with SST, and showed that older people experience

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positive emotions just as, or slightly more frequently than their younger counterparts, but that up until about the age of 60 they experience far fewer negative emotions, resulting in an overall positive affect. Their study also indicated that the temporal stability of emotion is consistent with other studies which have reported greater emotional regulation with increasing age, with this stability being observed more in positive emotions than negative (e.g. Carstensen et al., 2011). Thus memory for positive events and experiences will have a more long-lasting effect than for negative experience, further adding to the positivity effect (Carstensen et al., 2000; Carstensen et al., 2011).

This effect has its roots in socioemotional selectivity theory; the same influence which causes older people to strive for greater levels of emotional satisfaction over developmental objectives similarly causes a systematic preference for positive stimuli and information, in order to increase emotional and psychological well-being (for a review, see Charles & Carstensen, 2010). Reed et al. (2014) suggest that age-related psychological changes cause greater attention and memory to be focused toward goals which are congruent with the prevailing life-span stage. This means that in older people, emotionally-satisfying and meaningful goals which are congruent with the individual's life stage preferences will be more motivating and received greater effort, with less attention and memory being invested in goals which are incongruent to the life stage, i.e. those of developmental or information-seeking focus. This effect underlies the negative relationship between age and developmental goal preference.

Utilising SST as an explanatory framework, it can therefore be seen that the negative relationship between age and a developmental goal orientation is thus affected by the desire of older people to achieve emotional stability and fulfilment, with a resultant higher levels of employee positive emotional experience, and I therefore hypothesise:

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H2c: Employee positive emotional experience (POS) is negatively related to developmental goal orientation (DEV GOAL), and mediates the negative relationship between employee age (AGE) and developmental goal orientation (DEV GOAL).

Future time perspective and in-role performance behaviours

As discussed in the earlier sections, according to socioemotional selectivity theory, open-ended FTP (OEFTP) is positively related to developmental goal orientation, and limited FTP (LIMFTP) and employee positive emotional experience are both negatively related to developmental goal orientation. However, research into FTP has been 'disjointed and scattered, with different domains focusing on different aspects of the construct, using different measures, and assessing different antecedents and consequences' (Kooij et al., 2018, p. 1). In their meta-analytical study of studies ($k = 212$) which examined the relationships between FTP and principal classes of consequences relating to achievement, well-being, health and risk-taking behaviours, and retirement intentions, Kooiij et al., (op *cit*) concluded that the perception of the future held by an individual is significantly related to these consequences, and that FTP predicts the outcomes with greater accuracy than the big five personality traits (Goldberg, 1990). In particular, they found that FTP plays an important role in motivation and behaviour, and well-being. In their analysis, FTP was positively related to achievement and well-being, to behaviours linked to improvements in health, and financial knowledge to plan for retirement, and negatively related to behaviours which involve taking risks. They concluded that their study provided empirical support for the notion that an individual's time perspective and how they see their future is consistently related to motivation, certain behaviours, and well-being, and that these results were demonstrated across a range of domains (Kooij et al., 2018). Clearly, whether an individual is dominant in open-ended FTP or limited FTP will determine the direction of the relationship with developmental goal orientation. Rudolph et al. (2016) demonstrated a positive relationship between occupational FTP, when the focus is the individual's

perception of their future in work, and both task and contextual performance which they attribute to an expansive FTP. Similarly, Weikamp & Göritz (2016), and also Zacher et al. (2010) demonstrated that those with higher levels of FTP tend to exhibit correspondingly high levels of task-relevant behaviours, and also the behaviours identified by Ng & Feldman (2008) which lead to contextual performance. Vasconcelos (2018) also pointed out that older workers are often well-equipped to contribute to organisational performance, and their higher levels of generativity make them willing to share what he termed their significant levels of 'wisdom capital'.

In their various meta-analytical studies, and using SST as a theoretical framework, Ng & Feldman established there is a positive relationship between age and overall job performance (Ng & Feldman, 2008) using various indicators for performance, including higher levels of organisational citizenship behaviours (OCBs), safety performance, and creativity, and lower levels of counterproductive work behaviours (CWBs), workplace aggression, absenteeism and lateness, as well as through core task performance. In their 2010 study which explored the causes of this relationship, Ng & Feldman (2010) linked age to job attitudes, concluding that increases in age result in more favourable (or less unfavourable) work attitudes (task-based, people-based, and organisation-based), and that these attitudes drive behaviours (Kim & Hunter, 1993) which result in enhanced performance. They attribute these age-related changes in attitudes (and consequently, behaviours) to the effects of age-related motivational changes in older workers as a result of changed time perspectives. They argue that older workers are more likely than their younger colleagues to strive for emotional regulation by engaging in behaviours which have the objective of 'finding meaning in life, establishing intimacy with others, and developing a sense of belonging in the social environment' (Ng & Feldman, 2010, p. 685). Thus the probability of observing higher levels of socially-responsible behaviours, and fewer socially-damaging behaviours, is more likely in older

workers when compared with younger workers, and with these a resultant increase in performance. These socially-responsible and citizenship behaviours may compensate for losses in task-relevant behaviours and performance (Ng & Feldman, 2103a), resulting in sustained performance in older workers, even though their FTP may be increasingly limited and their goal focus increasingly on emotional regulation and satisfaction.

Developmental goal orientation and in-role performance behaviours

The role of goal orientation is central to any relationship with performance, given that it is the valence attributed to goals (Vroom, 1964) which determines how hard an individual will strive to achieve any given goal, and success in this depends on the level of relevant performance achieved. Moreover, achievement goal theory and empirical research suggest that employee goal orientation predicts both job performance and job satisfaction (e.g. Farr, Hoffmann & Ringenbach, 1993; Van Yperen & Janssen, 2002). This was also supported by the work of Gardner, Diesen, Hogg & Huerta (2016) who showed a positive relationship between learning goal orientation and performance, although this was dependent on whether the underlying environmental 'condition' waseither congruent or incongruent with the goals of an individual.

Elliot's (1999) 2 x 2 model distinguishes between approach and avoidance motivations, in which an individual appraises a potential event as either positive and desirable, or negative and undesirable and is accordingly motivated to either approach and embrace it, or avoid it. Mastery goals are those in which the individual strives to develop task-based and intrapersonal competence to develop their own sense of achievement, whereas performance goals are when an individual focuses more on interpersonal competence, to outwardly appear competent to others (Dweck, 1986). A mastery-approach goal, therefore, is one in which a person is motivated toward enhancing their own task and intrapersonal competence, and is the equivalent of the developmental goal orientation of SST. De Lange et al. (2010) found a

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positive relationship between individuals with a dominant mastery-approach orientation, and levels of work engagement, and the social and personal meaning of work. Similarly, Bell & Kozlowski (2002) found a positive relationship between learning [dominant mastery-approach, or developmental] orientation and performance, self-efficacy, and knowledge levels. As discussed in the previous section, although there are similarities between the mastery goals defined by Dweck (1986) and the developmental goal orientation defined in SST by Carstensen and her colleagues, these are not the same although the relationships between mastery goals and the dependent variables in this study follow the same patterns.

Moreover, Kooij, Bal & Kanfer (2014) used promotion focus as the outcome in their work, and identified that higher levels of developmental goal orientation were associated with stronger growth and promotion motivation, as well as a higher work continuation intentions (Kooij et al., 2014). Logically, any individual who is focused on job promotion and remaining with the organisation will be motivated toward performance excellence. A more complex relationship is described by Armstrong-Stassen & Schlosser (2007), who showed the positive linkages between a developmental orientation and affective commitment, (Meyer & Allen, 1991) which is known to positively influence performance, attendance and the use of OCBs (e.g. Meyer, Stanley, Herscovitch & Topolnytsky, 2002). Heidemeier & Staudinger (2015) were also able to identify a positive link between mastery-approach dominant goals (Elliot, 1999) affective commitment, and feedback-seeking behaviours (Chugtai & Buckley, 2008) although these effects did seem to be dependent on other factors such as job design (Truxillo et al., 2012), locus of control (Albert &Dahling, 2016), organisational identification, (Chugtai & Buckly, 2008), and relative subjective age (Kunze, Raes & Bruch, 2015). Medina (2017) found that learning goal orientation was positively related to a motivation toward learning and learning transfer, so that new knowledge, skills and abilities are more likely to be used to enhance performance. In their study of surgical

trainees, Gardner et al. (2016) found what they called 'a unique [positive] role of goal orientation for performance improvement' (p. 321). Similarly Klein, Noe & Wang (2006) noted that those with high learning goal orientation tend to seek out challenges, apply effort to the achievement of goals and are resilient when faced with adverse conditions. This leads to hypotheses:

H3a: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee in-role performance behaviours (IRB);

H3b: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the negative relationship between limited future time perspective (LIMFTP) and employee in-role performance behaviours (IRB).

Employee positive emotional experience, goal orientation and in-role performance behaviours

In the same way as time perspective influences in-role performance behaviours, so too does the positivity effect (Charles et al., 2003; Fung & Carstensen, 2003). Reasoning from SST, in their 2008 and 2010 studies, Ng & Feldman (2008, 2010) made positive links between age and a variety of performance indicators, including core task performance and a range of contextual performance indicators such as OCBs and safety performance, and negative links with undesirable workplace performance indicators such as CWBs, absenteeism, workplace aggression, and substance abuse.

The positivity effect suggests that older people experience more positive than negative emotions (Carstensen, 1992), and remember positive emotional experiences for longer and in greater detail than negative experiences (Carstensen et al., 2000; Carstensen & Deliema, 2018; Löckenhoff & Carstensen, 2007). This manifests as great optimism in an effort to regulate emotions, to negate the effects of negative experience (Chapman & Hayslip, 2006) and generally to minimise negative emotional experiences (Shallcross, Ford, Floerke & Mauss, 2013). As a result the levels of emotions which cause negative effects, such as anger, fear and sadness tend to reduce as people age (e.g. Charles, Reynolds & Gatz, 2001). The positivity effect means that older people tend to have better emotional control, stability, and emotional maturity (Gross, Carstensen, Tsai, Skorpen & Hsu, 1997), and thus be more agreeable (Warr, 2001) and conscientious (Ng & Feldman, 2013a). Conscientiousness has been identified in many studies as one of the most important predictors of core task performance (e.g. Barrick, Stewart & Piotrowski, 2002) and this effect is particularly strong in those who have long tenure and have therefore mastered the job skills necessary to excel (Thoresen, Bradley, Bliese & Thoresen, 2004). Overall, research suggests (e.g. Chiaburu & Harrison, 2008) that those who seek more positive socio-emotional experiences tend to increase their core task performance, through improved interpersonal trust (Lau & Cob, 2010), more balanced and considered decision-making (Staw & Barsade, 1993), and suffer less stress when faced with workplace challenges (Janssen, Lam & Huang, 2010) by expressing naturally-felt emotions (Carstensen & Mikels, 2005; Cheung & Tang, 2010). Thus it may be that those who have high levels of emotional control do well in jobs which involve customer-facing tasks, such as customer service roles.

The role of goal orientation in predicting in-role job behaviours is through mastery-approach (Elliot, 1999; Elliot & McGregor, 2001), learning goal orientation, or developmental goal orientation, in accordance with SST; those who are high in these dimensions are focused on

mastery and development, tend to have longer-term horizons and are striving for excellence. Heidemeier & Staudinger (2015) suggested that mastery-approach goals alone are the only ones which are unambiguously associated with organisationally-desirable outcomes, with positive associations with self-efficacy and learning motivation (e.g. Payne, Youngcourt & Beaubien, 2007), and job performance (Potosky & Ramakrishna, 2002). Conversely, workers with dominant mastery-avoidance goals are associated with negative work outcomes (De Lange et al., 2010). Therefore I hypothesise:

H3c: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee positive emotional experience (POS) and employee in-role performance behaviours (IRB)

Developmental goal orientation and satisfaction with learning opportunities

Additional to in-role performance behaviours, a second consequence of a developmental goal orientation is enhanced learning satisfaction; job satisfaction (Spector, 1997) and elements of job training (Landy, 1985) were synthesised by Schmidt (2007) into job training satisfaction. Job training satisfaction, like overall job satisfaction, is a multiple construct and explores how satisfied employees feel about the learning and training opportunities they receive as a whole, not simply one particular training course (Schmidt, 2007). Further, it examines satisfaction with the formal, planned workplace learning opportunities, rather than any informal, ad hoc learning which might happen. The importance of this concept, which is linked to enhanced organisational commitment and overall job satisfaction, should not be ignored, with calls for more research into these areas (e.g. Schmidt, 2010).

Given that socioemotional selectivity theory (Carstensen 1991, 1993; Carstensen, Isaacowitz & Charles, 1999) argues there is a strong positive relationship between an individual's future

time perception and their goal orientation, it is reasonable to view the level of developmental goal orientation in any individual as an indicator of their time perspective; a dominant developmental goal focus is suggestive of open-ended FTP, and a dominant emotional-satisfaction goal focus indicates a more limited FTP. The SST literature which deals with goal orientation suggests that those with higher levels of developmental goal orientation will be more motivated to engage in information-seeking behaviours and in novel, information-rich learning experiences (e.g. Carstensen, 1993; Carstensen et al., 1999; Lang & Carstensen, 2002), and conversely those who are less focused on developmental goals will be less likely to seek out these developmental experiences. It therefore follows that those who are developmentally-orientated, and who are more likely to be motivated to engage in learning and training (Medina, 2017) are more likely to enjoy, and find valuable, the learning and development opportunities afforded by their employer because these opportunities are congruent with their dominant goal orientation. Goal congruence in this sense is a function of Person-Environment fit (P-E fit), where this is defined as 'the degree of compatibility or match between the characteristics of an employee and the characteristics of his or her work environment (Zacher, Feldman & Schulz, 2014, p. 84). Following this train of logic, those who are less motivated by developmental opportunities, but who are expected nevertheless to engage in learning and training initiatives will experience a decrement in their P-E fit as this requirement results in goal incongruence (Zacher et al., 2014) and are consequently less likely to report favourably on their experience of the learning or training opportunities afforded them. This is particularly salient during periods of organisational change, when complex and rapid change makes high levels of demand on both individual and organisational ability to learn (Antonacopoulou & Gabriel, 2001).

Additionally, SST argues that those with a narrower perceived time frame consequently tend to experience higher and more intense positive outcomes and gratification from

engaging in socially-fulfilling activities than they do from engaging in knowledge-acquisitive activities; thus the combination of the effects of goal congruence (or incongruence) according to the lifespan stage of an individual, and the narrowing effect on time horizons as postulated by SST, lead to the hypotheses:

H4a: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee satisfaction with learning opportunities (LJS).

H4b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee satisfaction with learning opportunities offered (LJS).

According to SST, as a result of their efforts to increase and maintain their levels of emotional control, older workers are more likely than their younger colleagues to experience positive experiences more frequently and intensely than negative experiences (Carstensen, 1992), and better remember the positive experiences when compared with their memory of negative experiences (Carstensen et al., 2000; Carstensen & Deliema, 2018; Löckenhoff & Carstensen, 2007). This same group are less inclined to seek out novel, knowledge-building situations, and are logically therefore less likely to enjoy participation in such events, and find them satisfying. Therefore I hypothesise:

H4c: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative relationship between employee positive emotional experience (POS) and employee satisfaction with learning opportunities (LJS).

Developmental goal orientation and mental well-being

Mental well-being has been studied in conjunction with age through its relationship with future time perspective and focusing on a variety of outcome variables which indicate socioemotional health and appropriate psychological adjustment (Kooij, Kanfer, Betts & Rudolph, 2018). These include life satisfaction, happiness, subjective general health, depression and anxiety. De Volder & Lens (1982) postulate that people with higher levels of FTP, meaning those with a more expansive view of their future, also enjoy a more optimistic view of what the future holds for them, and have greater confidence in their ability to achieve goals in the future.

The working environment is increasingly dynamic (Kozlowski et al., 2001) and this places greater demands on cognitive skills as workers are faced with extreme information-processing and decision-making tasks. This places a premium on a worker's ability to generalise skills and knowledge, and to apply and adapt them to new problems and circumstances (Kozlowski, 1998). Socioemotional selectivity theory argues that as people age, they become increasing less focused on development and learning goals, instead becoming more motivated toward achieving goals which provide emotional satisfaction and meaningfulness. During periods of organisational change, it is necessary for workers to learn; organisational change, whether categorised as incremental or 'big bang', or designed to bring about transformation or realignment (Balogun & Hope-Hailey, 2004) always involves learning. The extent to which any individual finds this demand challenging may depend on whether they have a developmental goal orientation (and therefore are actively seeking out new knowledge and information), or an emotional-regulatory goal orientation. If the latter, the goal incongruence of being forced by organisational change into coping with large amounts of novel materials, processes, team structures and nomenclature will increase their work-related stresses and strains (Preston & Shipton, 2011) as they struggle to cope

with the new material and poorer understanding of their changed roles. As Antonacopoulou & Gabriel (2001) point out, change not only makes extreme demands on both the individual and the organisation as a whole as they try to learn and adapt to their changed roles, but also on the emotional stability of the workers. This will be particularly stressful and challenging for those who, rather than being developmentally-orientated are focused on emotional regulation and will likely result in negative effects on their mental well-being; during periods of organisational change, person-environment fit maybe negatively affected, and dependent upon individual differences and perceptions of both the process and the extent of the change (Caldwell, Herold & Fedor, 2004), their mental well-being may be impacted. Conversely, those who have high developmental goal orientation will experience less stress related to goal incongruence, and will therefore better maintain their levels of mental well-being. I therefore hypothesise:

H5a: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee mental well-being (WB).

H5b: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee mental well-being (WB).

Prior research has reported that older workers enjoy better psychological health (e.g. Gatz & Hurwicz, 1990) as well as greater levels of job satisfaction (e.g. Clark, Osward &Warr, 1996) and this may be attributed to a range of factors, including role transitions (Kalleberg &

Loscocco, 1983), more rewarding jobs (Kooij, Tims & Kanfer, 2015) and changes to work values and attitudes (Clark et al., 1996; Ng & Feldman, 2008).

The positivity effect affects mental well-being in that the increasing focus on and attention to positive emotional experience, as well as the effect on emotional memory results in a generally more positive outlook. In certain occupations such as service work which require high levels of customer contact e.g. retail, there is evidence of the greater use of positive and constructive approach to social interactions within older workers, including with customers, so they are generally less confrontational and tend to contribute less to developing conflict (Folkman, Lazarus, Pimely & Novacek, 1987). A requirement of service work is to maintain a positive emotional display, which encourages a positive response from customers (Zimmermann, Dormann & Dollard, 2011). Studies (e.g. Gross et al., 1997) have suggested that as adults grow older they are better at controlling their emotions and outwardly displaying positive emotion (Zapf, 2002) which consequently minimise negative emotional experience (Carstensen , 1986). This is in keeping with the concept of emotional labour (Hoschchild, 1991) which was demonstrated in a more recent study, (Cheung & Tang,2010). They used socioemotional selectivity as a framework to show how a changing time horizon affects human development across the lifespan. Their work was valuable as, supporting the earlier work of Fung and her colleagues (e.g. Fung, Lai & Ng, 2001; Fung & Carstensen, 2006) it also showed that the effects of SST are transferable across cultures. They proposed, and found, that time perspective determines the extent of use of antecedent-emotion focused regulation strategies (e.g. John & Gross, 2004), for example, cognitive appraisal, and fewer response-focused emotion regulation strategies, such as emotional suppression. Using the emotional labour (Hoschchild, 1991) construct, and applying the principles of SST, they demonstrated that older workers whose time horizons are limited are generally more likely to use deep-acting, an antecedent-focused regulation, than their younger colleagues, and that they expressed more naturally-felt emotions in the work context. In the younger group, who

had a more expansive time horizon, surface acting was more common. This has implications for the mental well-being of workers, because surface acting is positively related to increased work-based stress as this requires employees to fake outward expressions of emotions they do not really feel which, especially if sustained over a long period, is stressful. Conversely, those who demonstrated deep acting or naturally-felt emotions experienced the situations as less stressful because they had internalised (or genuinely felt) the organisationally-required emotion by modifying their inner feeling to reflect necessary outward emotional expression. However, the positivity effect is not just confined to those working in the service sector; rather, it is a generalised effect which may be observed in the population as a whole (e.g. Carstensen et al., 1999) and overall, these findings suggest that there is a positive relationship between an age-related increase in employee positive emotional experience and increased mental well-being.

The influence of goal development on mental well-being is expressed via the concept of goal congruence. Schmidt (2010) explored the effects of conflicts between personal goals and organisational goals which require individuals to exercise self-control efforts to a greater degree. He showed that goal incongruence, where there is a clear conflict between these two goal types resulted in higher levels of exhaustion, depersonalisation and the incidence of psychosomatic complaints such as poor sleep, digestive problems, and anxiety. These findings were objectively supported by the organisation's sickness and absence data. The underlying affective mechanism appears to be poor person-environment fit (P-E fit), which is common during periods of organisational change when the working environment changes, thus requiring a period of learning and adjustment for employees. In organisations which experience constant change, change fatigue or burnout are an identified hazard as adaptive reserves (Miller, Crabtree, Nutting, Stange & Jaen, 2010) are depleted and exhausted. In those whose life stage suggests they will be more focused on development, with a more

developmental goal orientation, the requirement to learn to support and implement organisational change is congruent with that goal, and will therefore result in less stress, and better mental well-being. Conversely, for those who are not developmentally-focused, the goal incongruence will result in higher levels of emotional stress, and correspondingly poorer mental well-being. This leads to the hypothesis:

H5c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee positive emotional experience (POS) and employee mental well-being (WB).

2.9. Perceptions of human resource management system strength (Bowen & Ostroff, 2004)

Human resource management system strength theory (HRMSS: Bowen & Ostroff, 2004) extends the earlier work of Mischel (1973), and integrates Kelley's (1967) covariation principle. It is essentially about communication; Bowen & Ostroff (2004) argue that when all three of the features (distinctiveness, consistency, and consensus) are present, then the system is strong. This is because the messages which the management in the organisation wish to convey to employees, about their expectations of those employees in terms of attitudes and behaviours, have been received and understood. Ostroff & Bowen (2015) defined a strong system as one which:

> 'contains process mechanisms that make the set of practices coherent, salient and distinctive, and visible and understandable, and the result of which builds consensus among employees about the practices and allows for shared perceptions of climate to emerge'

> (Ostroff & Bowen, 2015, p. 196)

The original conceptualisation of human resource management system strength (HRMSS: Bowen & Ostroff, 2004) was as a higher-order, organisational-level construct, which they intended as a contribution toward understanding *how* HRM systems affect firm performance; the 'black box' (Wright & Gardner, 2004) of the HRM to performance linkages. From the 1990s this was seen by the research community as of critical importance; since the

publication of a number of seminal works in this period, exploring the relationship between HRM and firm performance (e.g. Barney, 1991; Huselid, 1995; Ichniowski, Shaw & Prennushi, 1997) it became important to understand the potential mediators in the relationship and their effect on the motivation of employees and the development of human capital, and thus their ability to contribute to the efficient function of the organisation (Wright, McMahan & Williams, 1994). This has resulted in a number of studies into the roles of, for example, interpersonal relationships and work interdependence (Gittel, Seider & Wimbush, 2010), psychological contracts and employee attitudes (e.g. Guest & Conway, 2002), and organisational climate (e.g. Aryee, Walumbwa, Seidu & Otaye, 2102).

Bowen & Ostroff (2004) conceptualised HRMSS as incorporating nine features, grouped into three meta-features (distinctiveness, consistency, and consensus), all of which need to be present if the messages conveyed by the HR practices are to successfully communicate their intended effects and thus have an impact on organisational performance; when this is the case, the HRM system strength is said to be 'strong'. The nine features defined by Bowen & Ostroff, (2004) are grouped under distinctiveness (visibility, relevance of the practices to individual and strategic goals, understandability of the practices, and the legitimate authority of the HR function), under consistency (clear and consistent 'cause and effect' relationships, demonstrably valid HR practices, and consistency in the messages communicated by different employees), and under consensus (message-senders agree on content, and practices are fair and equitable). When these three meta-features are present, they work together to deliver a broad, unambiguous and holistic HR message which speaks of the values and priorities of the organisation, and the climate and culture which exist within it (Ostroff & Bowen, 2015). Conversely, when a strong HRM system is not present, there is a greater tendency for idiosyncratic perceptions to be held, leading to individualised responses which have a detrimental effect on the firm's ability to maximise their

performance as there are fewer shared perceptions of the messages that the practices communicate.

In their 2015 publication in which Ostroff & Bowen reflect on the ways in which the research community has applied the concept of HRMSS, they point out that the majority of papers have used the concept as a theoretical or explanatory framework rather than directly testing it. They also discuss the fact that as developments from their original conceptualisation, a number of different operationalisations of the concept have emerged, some of which are at odds with the way in which it was originally intended. These include some which have focused on the individuals' perceptions of the strength of the HRM system (PHRSS: e.g. Bednall, Sanders & Runhaar, 2014; Coelho, de Cunha, Gomes & Correia, 2012; Delmotte et al., 2012; Frenkel, Li & Restobog, 2012; Riberio, Coelho & Gomes, 2011), with some focusing on the quantitative incidence of each type of practice to have been implemented, with the notion that a greater number of practices will send stronger signals (e.g. White & Bryson, 2013), and some on the calculation of an aggregate score of individuals' ratings of content, with the rationale that a higher score will be indicative of a stronger HRM system (e.g. Stumpf, Doh & Tymon, 2010). Ostroff & Bowen (2015) acknowledge the value of these conceptualisations, but argue that they are indirect as they focus on the outcomes of a strong (or weak) system rather than directly on the three meta-features of a strong HRM system (distinctiveness, consistency and consensus).

As previously noted by Ostroff & Bowen (2015), the majority of studies have been carried out and the data analysed at the individual level, and findings have been consistent in showing that employees' perceptions of HRMSS have impact upon employee attitudes and responses (e.g. Bednall et al., 2014; Li, Frenkel & Sanders, 2011). Therefore this study is also aimed at this level, and is in accordance with the work of Delmotte el el., (2012), who

developed a scale to measure *perceptions of* HRSS rather than the higher-level contextual unit of analysis proposed by Bowen & Ostroff (2004). This study explores if and how perceptions of HRSS (PHRSS) as delivered by line managers impact on the relationships between the two types of future time perspective, and development goal orientation

The role of managers as delivery agents of the processes of HRM is pivotal: in their 2007 study of front line managers' roles in delivering effective HRM in an increasingly-devolved HRM environment, Purcell & Hutchinson (2007) found that perceptions of the quality of leadership behaviour, and satisfaction with HR practices both had a strong influence on the attitudes of employees, because it is the response of employees to the HR practices they experience which sits central to any HRM-performance model (Purcell & Kinnie, 2006). Logically, an organisation might have any number of excellent HRM practices, but if the processes by which those practices and policies are operationalised are perceived by the recipients as unsatisfactory, or the delivered practice is subsequently perceived as not relevant to the needs of an individual, or group of individuals (e.g. women, parents, older workers etc.) then the effect will at best be as if those practices did not exist, and at worst, perceived as evidence of the organisation not caring about that person or group of people.

2.10. Employee perceptions of human resource management system strength as a moderator of the relationship between employee time perspective and developmental goal orientation

Earlier in this review of the literature the changeability of time perspective was discussed, and that time perspective, while being naturally closely correlated to age, can also be changed by other perceived proximal endings, regardless of chronological age (for a review, see Löckenhoff &Carstensen, 2004). In other words, differences in goal orientation and social preferences may be induced by manipulating time perspective (reduced or extended) by the introduction of factors other than chronological age. For example, active AIDS

symptoms with life-limiting consequences were observed to reduce time horizons and cause similar emotional responses as are normally observed in old age (Carstensen & Fredrickson, 1998). Imminent relocation has also been shown to produce the same effects (Fredrickson & Carstensen, 1990; Fung et al., 1999), which disappear if the relocation is cancelled or after it has taken place. The opposite effect was observed when subjects were asked to imagine that medical science had discovered something which would extend their life expectancy by a considerable amount (Fung et al., 1999). Indeed, most people can replicate and recognise this response in themselves when they think about, for example, leaving a job to go to a new employer, retirement, or moving home from a neighbourhood in which they have been happy and then reflect on how they would like to spend the last few days or weeks prior to the ending; being aware that time is short, and precious, most people want to spend the remaining time with the social contacts one is about to leave behind in preference to meeting new people in the old setting.

So far as my searches have revealed, this ability to change or influence the effects of socioemotional selectivity has been demonstrated only by the introduction or removal of perceived endings (both naturally occurring and artificially-introduced) which induce change in time perspectives (e.g. Carstensen & Fredrickson, 1998; Fredrickson & Carstensen, 1990; Fung et al., 1999; Fung et al., 2001). This study extends this notion, that the relationships between features of SST can be changed, by proposing that the course of the natural age-related changes can be diverted by lived experience as well as anticipated events. More specifically, that it is possible to moderate the relationship between future time perspective and goal orientation, so that the expected changes to goal orientation as a result of increasing age, are modified. This is of particular interest because rather than the effect being caused by anticipation of an event in the future, it is the effect of perceptions of past experience which is the cause of the change. This is a novel synthesis of socioemotional

selectivity theory (Carstensen 1991, 1993, 1998; Carstensen, Isaacowitz, & Charles, 1999) and perceptions of human resource management system strength (Bowen & Ostroff, 2004)

The tenets of socioemotional selectivity theory suggest that the reduction in time horizon which occurs naturally with age results in a consequential shift in focus, from striving to achieve developmentally-orientated goals when time is perceived as limitless, to greater motivation toward achieving emotionally-satisfying and meaningful goals when time is perceived as limited. Therefore older people, who have a more limited view of their future, will be naturally less developmentally-orientated. This may have deleterious consequences for both their employing organisation and them personally as individuals, when they are required to learn, either for development reasons or as a result of organisational change. As proposed in previous sections of this review, I predict there will be positive relationships between a developmental goal orientation I employees , and a) employee in-role performance behaviours, b) employee satisfaction with the learning opportunities offered, and c) with employee mental well-being. According to SST, as worker age increases their time horizon reduces so they will have a lower level of open-ended FTP (OEFTP) and thus a lower level of developmental goal orientation. As previously discussed, this reducing effect on employee development goal orientation will result in fewer or less effective employee in-role performance behaviours (e.g. Gardner et al., 2016; Farr et al., 1993; Kooij et al., 2014; Van Yperen & Janssen, 2002), lower levels of satisfaction with the learning opportunities offered (e.g. Medina, 2017; Zacher et al., 2014), and poorer mental well-being (e.g. Kooij et al., 2018; Schmidt, 2010). I propose that although it is not realistically possible to prevent the change in time-horizons associated with increasing age (other than by temporarily or permanently changing the workers' view of their future by the introduction of external influencing factors, which is neither feasible as a long term proposition, nor ethical), it is however possible to reduce or eliminate the negative effect of their reduced time horizon on

employee goal orientation, thus maintaining their focus on developmental goals and activities for longer. This would then have the organisational benefit of maintaining, or slowing down the rate of decline in the levels of the outcomes, thus contributing to higher overall levels of in-role performance behaviours, learning satisfaction, and mental well-being.

Perceptions of human resource management system strength (Bowen & Ostroff, 2004) are driven by how workers view the support and implicit messages they receive from their line manager as a function of the HRM processes. This is, through the visibility and understandability of the HRM practices, and importantly, how they are relevant to the individual and organisational goals (distinctiveness), by them understanding the relationships between stimuli and outcomes within HRM practices, and feeling that the HRM practices, as delivered by their manager are both valid in this respect, and that the delivery processes demonstrate consistency in the message they deliver to all employees (consistency), and that their line manager is faithfully delivering the same HRM message as other agents in the firm, and that these practices are fair (consensus).

If an organisation wants to foster a learning climate to support organisational change, and the messages that employees receive from their line manager clearly define the expectations that the organisation has – they are distinctive, consistent, and have consensus – then the employees will perceive the HRSS as being high. This will lead them to better accept and embrace the organisation's aspirations, and develop more developmental attitudes and behaviours – their goal orientation will become more developmental. Thus the positive relationship between an open-ended future time perspective (OEFTP) and a developmental goal orientation will become more positive, and the negative relationship between a limited

future time perspective (LIMFTP) and a developmental goal orientation will become less negative / more positive.

I therefore propose that when older workers perceive that the HRM system is strong, and the processes by which their manager delivers HRM to them are distinctive, consistent, and there is consensus (Bowen & Ostroff, 2004, Ostroff & Bowen, 2015) that this will moderate the positive relationship between levels of open-ended FTP and goal orientation, and that they will become more positive:

H6a: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee in-role performance behaviours (IRB), and this is stronger when employee perceptions of HRM system strength (PHRSS)are high;

H6b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee satisfaction with learning opportunities (LJS), and this is stronger when employee perceptions of HRM system strength (PHRSS) are high;

H6c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee mental well-being (WB), and this is stronger when employee perceptions of HRM system strength (PHRSS) are high.

As outlined above, the negative relationship between limited FTP (LIMFTP) and employee developmental goal orientation will be similarly affected; limited FTP (LIMFTP) is positively associated with age, and generally leads to lower levels of developmental goal orientation as older people are more likely to transition to being focused on emotionally-satisfying goals. The moderating effects of perceived HRM system strength in this instance, while acting in the same way upon employees as outlined in the previous section which discussed the moderation effect on the relationship between open-ended FTP and developmental goal orientation, serve to reduce this negative relationship. I therefore hypothesise:

H7a: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee in-role performance behaviours (IRB), and this is weaker when employee perceptions of HRM system strength (PHRSS) are high;

H7b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee satisfaction with learning opportunities (LJS), and this is weaker when employee perceptions of HRM system strength (PHRSS) are high;

H7c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee mental well-being (WB

(WB), and this relationship is weaker when employee perceptions of HRM system strength (PHRSS) are high.

2.11. Chapter summary

This chapter has presented the literature surrounding the key concepts for this thesis, and led to the presentation of hypotheses about their inter-relationships. The following chapter discusses the general methodology for this research project, including outlining the philosophical roots for the method, data collection and analysis, and explaining the ethical considerations and practical actions undertaken to ensure compliance with the appropriate ethical guidelines and data protection legislation.

CHAPTER 3: GENERAL METHODOLOGY

3.1. Chapter introduction

In this chapter, the various prevailing paradigms in research in the social and behavioural sciences are introduced and discussed, along with the choice of approach for this thesis. This choice is based on the most prevalent approach and orientation in studies of the psychology and cognitive effects of human aging, and in particular on the resultant effects on organisationally-relevant outcomes. This leads logically into a discussion of quantitative methods as providing the best fit, methodologically, with this philosophy and provides justification for the use of such methods in the two studies which together make up this thesis. After this, the chapter moves into a description of the sampling techniques employed, followed by an explanation of the analysis strategy and methods, and finally outlines the data protection and ethical considerations which provided governance for the undertaking of this research.

3.2. The philosophical underpinnings of research

The discussion of paradigmatic beliefs is useful as a precursor to methodological matters, by giving form to questions of what knowledge is, the questions that can be asked about the world and how to best collect data with which to answer those questions (Lee & Lings, 2011). In other words, to understand how the researcher views, and what they believe about, the fundamental nature of reality. This is important as it is this which gives rise to methodological choices: their ontological position depends on the individual researcher's perceptions of where and how reality exists, and whether they adopt an objective viewpoint of reality, which suggests that reality exists independently of their personal perceptions, or whether it is constructed subjectively by the individual and therefore is based on their experience of that reality. The ontological position adopted is often dependent on one's professional background (Anderson, 2009); for example, economists and accountants tend

toward an objective ontology whereas care workers and social workers tend to be more comfortable with a view of reality which is constructed by the people in it.

This then defines what may be known and understood about reality and events which happen – epistemology. If one adopts an objective epistemological viewpoint it then follows that events which happen in this external reality may be generalizable and unbiased by personal opinion, whereas those who adopt a subjective epistemological viewpoint regard reality as phenomenologically specific. The epistemological viewpoint adopted will in turn determine the objectives of research, the axiology; are the aims to discover the extent of something, to explain or perhaps predict something, or are the aims to understand why or how something happens, or how people feel about it? (Lee & Lings, 2011). These questions, and their answers are important to define the approaches taken in this study.

Ontology

Ontology is a branch of metaphysics (Jankowicz, 2005), and defines the nature of existence. This is something which is inbuilt into all of us, and will determine which things and events we take notice of, and which we largely ignore as irrelevant. One's ontological position will depend on whether we ascribe to an objectivist or a constructivist ontological world view; if the former then we believe that reality and phenomena have independent and external existence to social actors, who have no control over them (Bryman, 2012), and if the latter we believe that reality is 'in a constant process of reformulation and reassessment' (Bryman, 2012, p. 6) by the social actors who live in it. An example of this is organisational culture; if one adopts an objectivist view, then the culture is determined by the written rules and processes of the organisation, which have independent existence. A constructivist viewpoint, on the other hand, would suggest that to determine organisational culture one would have to observe the behaviour of the members of the group, along with their values and attitudes and that the culture therefore is socially-constructed and in a constant state of flux and

development or reinforcement, that the reality of organisational culture is to be found in the people rather than in the rule book! As Jankowicz (2005) argues, for the purpose of a particular research project, one must decide whether reality and truth lies 'in people or in processes, in effectiveness or guiding principles, in actions or language communications, in rules or belief systems, or perhaps in motives or constraints, as it cannot be all of these' (p. 106).

Epistemology

Epistemology stems from ontology, and is defined as, 'the study of what we can know about reality, and is dependent in many ways on what you believe reality to be [your ontological position]' (Lee & Lings, 2011, p. 11, square brackets are my addition for clarification). The notion can be further sub-divided into three main domains which sit under the umbrella of epistemology; positivism, realism and interpretivism. Positivism is associated with an objectivist ontology, and has the core underpinning belief that research should broadly follow the same methods as the natural sciences, and in particular that only knowledge derived from sensory stimulation may be correctly termed as 'knowledge' (*phenomenalism*), that the role of theory in research is to allow the generation of theory-derived hypotheses which can then be tested (*deductivism*), and that theory is generated by the gathering and organisation of data, which provides the basis for new laws which explain the effects (*inductivism*). Postivism further dictates that science must be *objective*, and implied within this is that it is actually *possible* for it to be objective, or value-free, and finally that science observes the differences between scientific statements i.e. those which lie within the scientific domain, and normative statements which cannot be verified by sensory input (Bryman, 2012). However, more recently the notion that all knowledge must be supported by observable phenomena has been discredited (Lee & Lings, 2011), that observations are in fact theory-laden.

Realism, of which there are two recognised strands (*empirical (or direct / naïve) realism* and *critical realism*) share two features with positivism, and sit with it under the objectivist ontological position. The two shared features are first, that the social sciences are able to, and should, apply the same kinds of data collection approaches and explanation as the natural sciences, and second, they recognise and believe that there is an independent, external reality that is separate to our study or description of it and which can be directly observed (Bryman, 2012). The second type of realism, that of *critical realism*, seeks to understand the natural order that exists within the social world and all its discourses and events, reasoning that inferences about causal mechanisms in the social world are neither inductive nor deductive, but rely upon making judgements about which causal mechanisms are responsible for the regularities which are observed in the social world, are values-accepting and therefore recognise the individuality of values, and thus the causal mechanisms in force.

The third epistemological standpoint is *interpretivism*, which sits under a constructivist ontology and is therefore markedly different in its beliefs about the fundamental nature of reality and in the belief that the social sciences and natural sciences require a different approach to research, requiring the researcher to understand and embrace the inherent differences between people, and the objects of the natural world (Bryman, 2012). In other words, interpretivism seeks to understand rather than predict human behaviour. Lewin (1947) summarised this well, suggesting that sociology is a scientific approach to understanding social actions with the objective of identifying the causes and effects of human actions. The emphasis here is on the objective of interpretively explaining cause as an outcome of understanding social action, rather than the notion that external forces are meaningless to social actors (Bryman, 2012).

Axiology

After the discussion of the ontological and epistemological aspects, it is then necessary to address axiology, or values. Saunders et al (2009) suggest that our values - our personal axiology - underpin every aspect of our research from the topic we choose to investigate (presumably we feel it is worthy of investigation thus showing our values-driven decision), to the way in which we go about the research project and thus the method or data collection techniques we adopt. This idea is at odds to some extent with the positivist ontology, which embraces the notion that knowledge is values-free and the researcher can remain completely objective throughout the process and independent of the data.

Those who embrace a positivist or realist standpoint would seek to make predictions about the world, seeking to explain it, whereas those who lean toward an interpretivist view try to understand it; axiology is therefore rooted in the aims of any research project, and leads directly to the choice of method for data collection and analysis. To illustrate, positivists and realist are likely to use existing theory to make predictions and hypothesise about causal relationships, and to then use these to generalise their findings to a wider population or audience, thus a hypthetico-deductive approach is used, collecting and analysing quantitative data. The predominant method to achieve this is via validated measurement instruments or scales, although as Edmondson & McManus (2007) point out, this might also be achieved using fully-structured interviews or participant observations which have been designed and calibrated to lend themselves to quantitative analysis. Conversely, the objective of an interpretivist approach is not to explain or predict, but to better understand things by exploration. This viewpoint takes on board that phenomena are dynamic and highly context-bound, and cannot therefore be generalised beyond the historical context in which the data are collected and interpreted (Lee & Lings, 2011). In an inductive approach, the purpose of the data collection and analysis is therefore to identify patterns and thus to generate theory; they require no prior guiding theory. Examples of this approach are discourse analysis, focus

groups, and unstructured interviews, all of which share the characteristics of being 'free of boundaries' and require interpretation to derive meaning from them.

3.3. The dominant philosophy in research into age-related change, job attitudes and leadership

The increasing number of older workers in the workplace, and the predicted continuing rise in their number and proportion of the workforce, has led to a corresponding increase in interest in how this age group will function in organisations and workgroups, in particular, how potential age-related differences may set this group apart from their younger colleagues (for example, Posthuma & Campion, 2009).

The physical, psychological and cognitive changes that occur with normal aging are overtly evident (for example, Peeters & van Emmerik, 2008), which has led to negative stereotyping of older people (for example, Elias,Smith & Barney, 2012; Posthuma & Campion, 2009; Warr & Pennington, 1993) as poor performers who may be resistant to change and unable to learn or develop, who are costly to employ and unlikely to have long tenure (Elias et al., 2012). Physical, age-related changes have been the focus of biologists and the medical profession, but the psychological and cognitive changes associated with age have typically been studied not only by physicians, but increasingly also by psychologists and human resources / work psychology researchers, and this is reflected in those publications in which literature on these subjects has been published; highly relevant papers from the last eight or so years were found in a variety of psychology and work psychology publications (for example, Bal & Kooij, 2011; Coudin & Lima, 2011; Elias et al., 2012; Luchman, Kaplan & Dalal, 2012; Ng & Feldman, 2010; Peeters & Emmerik, 2008), in organisational behaviour publications (for example, Kooij, Jansen, Dikkers & de Lange, 2010), and in publications dealing with rehabilitative and assistive technology (for example, Evans et al., 2008; Fraser,

McKenna, Turpin, Allen & Liddle, 2009; Larsman et al., 2009). However, the predominance of interest is from psychology and work psychology. This is unsurprising; job attitudes are psychological constructs and clearly highly relevant in the worlds of work and organisational behaviour.

Within these domains, deductive studies underpinned by theoretical frameworks predominate, although there is some evidence of inductive work, both as stand-alone and as part of mixed-methods approaches and I found one purely conceptual paper (Peeters & van Emmerik, 2008). However, the majority of studies onto the relationships between age and attitudinal or organisational outcomes adopt a deductive approach; they are driven by theory and adopt a critical realist philosophical view, further evidenced by their methodologies which typically measure latent variables as indicators of the underlying reality and structure. An example of this is Luchman et al., (2012) who quantitatively employ the job descriptive index (Smith, Kendall & Hulin, 1969), which measures perceptions of, for example, co-workers and supervisors. Luchman and his colleagues then used this data to reveal age-related psychosomatic differences in information-processing which potentially amounts to age-related participant bias which could in turn threaten the construct validity of studies of age-related change.

A slightly different methodological approach is meta-analysis (see for example, Kooij et al., 2010; Ng & Feldman, 2010, Coudin & Lima, 2011). Although these studies rely on secondary data, they still nevertheless adopt a hypothetico-deductive approach and a critical realist philosophy by aggregating large amounts of quantitative measures of latent variables from their chosen sources, using these to test hypotheses; in philosophical terms, they do not vary from those studies which collect and analyse primary data.

However, the critical realist philosophical paradigm, leading to this approach is not the only one in evidence; three papers published in *Work*, which covers rehabilitation and assistive technology adopt interpretivist philosophical paradigms, seeking data and then making sense of it post hoc. This might be the norm for this publication, demonstrating how researchers and publications sometimes follow established patterns of publication style (Lee & Lings, 2011). Each of these papers frames its research question to indicate the exploratory nature of the research being undertaken. For example, Fraser et al., (2009, p. 263) state they 'used a qualitative methodology to understand the factors that influence …' and their research questions all begin with 'What qualities …?', 'Why do …?', and 'What are…?' rather than attempting to quantify the strength of any potential relationships or views. Similarly, Evans et al., (2008) employ a phenomenological approach and mixed-method research design to answer their research question which, like Fraser et al.'s (2009) are phrased in terms intended to develop understanding and explore concepts, such as 'Why do aging workers …?', and 'How aware …?'.

In their 2007 work, 'Methodological fit in Management Field Research', Edmondson & McManus quote Bouchard (1976) who says,

> *'the key to good research lies not in choosing the right method, but rather in asking the right question and picking the most powerful method for answering that particular question'*
>
> <div align="right">(Bouchard, 1976, p. 402)</div>

This really gets to the heart of the methodological debate; the methodological approach that 'fits' any given research depends on the question to be answered. However, what clearly emerges is that although there exist guidelines and traditions within disciplines (Lee & Lings, 2011) about research designs for certain types of research problems, and many academics have their preferred research methods (which are usually aligned to their

philosophical beliefs), the boundaries are blurred and there are many instances of 'non-traditional' research methods being used to address research questions.

Bryman (2012) also points out that the distinctions between quantitative and qualitative research methods are not straightforward. He warns of the risks of 'hammering a wedge between them (p. 36), pointing out that research methods can be more 'free-floating' (p.614) than is often thought; whilst operating within distinctly different paradigms, common methods may be employed. For example, structured interviews might be used to answer typical deductive questions such as 'who?', 'what?', 'where?', 'how much?, and 'how many?', but they can equally, with the use of open-questioning techniques, be used to answer inductive questions, such as 'why?', and 'how?'. Similarly, the analysis of case studies can be either quantitative or qualitative.

Therefore, the choice of research method will depend on the research objectives, themselves influenced by the researcher's personal paradigmatic view. Additionally, the resources available, including time and financial resources of both the researcher and the participants, and the extent of current knowledge (Saunders et al., 2009) along with the degree of maturity of the prevailing theory (Edmondson & McManus, 2007) will all affect the choice.

The methodologies chosen by authors of recent studies into age and job attitudes are effective for their paradigms and chosen research designs, with the realist researchers employing deductive methods, of quantitatively analysing data gathering by survey methods, either as primary data or as meta-data. One inductive study (Evans et al., 2008) used a mixed-methods approach of phenomenological interviews in parallel with a survey to determine older workers' experiences of work, and their future intentions regarding continuing employment or retirement. This combined research approach is both possible and

at times, advantageous (Saunders et al., 2009), despite the apparent philosophical incommensurability of such an approach, in that it is possible to mix qualitative and quantitative research methods, but this is not the same as mixing paradigms (Edmondson & McManus, 2007). Another inductive study by Fraser et al., (2009) utilises semi-structured interviews and focus groups with open-ended questions to allow participants to express in their own words their feelings about the benefits, barriers and facilitators to their employment. Demographic data were gathered by survey for categorical analysis purposes. Larsman et al., (2009) carried out a work-trial experiment in conjunction with a survey to investigate the possible relationship between perceptions of work-related stress and musculoskeletal disorders in women workers.

This discussion illustrates the view expressed by Saunders et al. (2009) that there is no universally 'better' approach to particular topics, but rather that the 'better' approach depends on the research question being asked, and whether the purpose of the research is to understand a situation within a given context, or to test hypothetical relationships between variables.

3.4. The research philosophy and design in this study.

This study examines the job attitudes and behaviours of older workers in the contemporary workforce, with a backdrop of high levels of change. It empirically tests the meta-analytical work of Ng & Feldman (2010) who examined the relationships between age and job-related outcomes and attitudes, and who hypothesised that Laura Carstensen's (1991) Socioemotional Selectivity Theory (SST) explained the variation they observed in the meta-data they examined. This work further examines the role of the line manager in enacting human resource management (HRM) processes, and explores whether perceptions of this act as a boundary condition in the relationship between future time perspective and a

developmental goal orientation; it offers an explanation of how at the individual level, perceptions about the suitability of the enacted HRM policies and practices influence the extent to which the natural changes associated with aging negatively affect individual developmental goal orientation, and the consequential effect of this on individual outcomes; in-role performance behaviours, satisfaction with the learning opportunities provided, and mental well-being.

My work for both studies adopts a deductive, critical realist philosophical approach; the variables being measured cannot be directly observed and measured, but rather the *effects* of these latent variables have to be measured and accepted as a representation of the underlying reality, and seeks to quantify how much, or indeed, if these change with age. It employs a quantitative research design, in line with the majority of earlier studies measuring attitudinal outcomes. Therefore I propose to gather quantitative data using survey methods and whenever possible, measures which have known and acceptable levels of reliability and validity, although some instrument development and adaptation is also required.

This makes sense on a number of planes; it fits with my personal philosophical view of the nature of knowledge, the theory is rigorous and some measures exist and have been validated although they will need to be adapted for survey use. Using a survey is a cost-effective way of gathering large amounts of data in a relatively short period of time.

As an alternative, it would have been possible to carry out structured interviews with all participants to gather the same data, with interviewers asking the questions and noting the answers instead of the participants filling in their own answers. This would probably result in a higher response rate as people would be more likely to complete the survey if it involves someone else. However, it could be argued that this pressure to participate and complete the

survey is a subtle form of coercion, however nicely or politely pressure is applied. Using structured interviews, however, would involve an immense time cost even if multiple interviewers could be afforded. This latter option also brings further complications in that it could negatively impact on the inter-rater reliability of the data, if the interviewers use any level of interpretation of the answers provided by participants. Moreover, some interviewers may be better than others at explaining what needs to be done, or reading the questions to optimise comprehension, so again this could affect responses and thus reduce inter-rater reliability.

The original research design was a longitudinal data gathering process, to measure the extent to which perceptions of change at work affected age-related changes in attitudes and other outcomes, such as in-role performance behaviours and mental well-being over a period of several months. Unfortunately, because of constraints of time and the likelihood that there would be high levels of participant mortality because of the high staff churn in the organisation (Saunders et al., 2009) it was not possible to conduct this planned longitudinal study and therefore a cross-sectional design was chosen instead, with a survey strategy as is common in cross-sectional studies (Easterby-Smith, Thorpe, Jackson & Lowe, 2008). The choice of survey methods are not without challenges, particularly when self-report measures are used (Podsakoff et al., 2003) which may introduce common method variance where the variance lies within the measurement method itself. To ameliorate this, the measure of in-role behaviours of participants was provided by participants' line managers, rather than by participants themselves. Similarly, it was critical that perceptions of HRM processes and practice enactments are recorded by the participants rather than their line managers who may have an over-inflated view of their own efficacy in this regard.

Other possible types of common method variance which may have influenced the responses are socially desirable responding, and priming of responses. To minimise these, comprehensive information about the independent and anonymous nature of the study was provided in the hope that this would reduce socially desirable responding. However, the information provided for participants included age as being of interest only as one of a list of independent variables which also included gender, and tenure to prevent semantic priming effects which may arise automatically as a by-product of participants having processed the 'prime', in this case that the study is about age (Posner & Snyder, 1975) and therefore people may consider what response is 'suitable' according to their own feelings about their age, or their stereotypical views of people of particular ages, both young and old. For example, when asked about their perceptions of what the future might hold using the FTP scale (Lang & Carstensen, 1996), people may become defensive about their age – 'I'm certainly not old, I am no different to younger people' or conversely may start to consider that their attitude is inappropriate for someone 'of their age', and adjust their response accordingly.

To conclude, the objective of this study was to develop knowledge about how the way in which line managers enact HRM processes may influence the relationship between the time perspective and goal orientation of older workers, and with that, their attitudes, behaviours and mental well-being. To do so, a critical realist philosophical approach was adopted which utilised survey methods to measure the observable effects of latent variables, thus providing evidence of validity for the conceptual model.

3.5. Sampling, data collection and analysis strategy

Sampling method

According to the philosophical paradigm adopted in this work, that of critical realism, the ultimate objective is to develop knowledge which may be generalised to the population,

which explains and predicts the effects of age on perceptions of how expansive one's future is, how positively older workers may view their experiences, their predominant goal orientation, and how these factors affect their in-role performance behaviours, their satisfaction with the learning opportunities they have been afforded, and their mental well-being, within a context of constant change in the work environment. Additionally, the effect of a boundary condition, that of perceptions of the strength of the HRM system is introduced, to provide knowledge of 'the line manager effect' and how the way in which line managers enact HRM processes may change the expected path of age-related change. In order for this to be effected, it is necessary to select a sample of participants who collectively represent the population as closely as possible.

Although is it considered to be the 'Gold Standard' in sampling technique (Lee & Lings, 2011), probability or representative sampling is extremely difficult to attain in reality and as a result the majority of social science research projects do not use probability sampling even though the statistical analysis which follows depends on it (Lee & Lings, 2011). This may be because the sampling frame - the list of potential subjects – is commonly flawed or incomplete, or some subjects may simply decline to take part in the research. As a result of this, it then becomes technically impossible to generalise any findings to the overall population.

A necessary alternative to probability sampling is non-probability sampling, wherein subjects are often recruited on a convenience basis and so this becomes the most common form of sampling (Lee & Lings, 2011). Although convenience sampling could be said to have a 'bad reputation' (Lee & Lings, 2011, p. 270) it should also be noted that as they are so commonly used then the use of them does not necessarily mean that the research itself is also bad; so long as researchers recognise and acknowledge the flaws and limitations of convenience sampling, this may be the only acceptable way to carry out research in the

social sciences. For example, convenience sampling can be acceptable provided that the sample provides meaningful data – so if you are interested in leadership styles, is your sample made up of leaders, or direct reports of leaders? Another way of approaching this is to check whether or not the sample contains any characteristics which might bias the outcomes, relative to the research question you are exploring – is the sample systematically different from the general population? An example of this might be if you are interested in how nursery nurses feel about the ethics of a particular government childcare policy, one should recognise that the sample of nursery nurses will be predominantly female, and acknowledge that this gender imbalance could potentially influence the outcomes of the investigation because men may not be equally represented in the sample.

To minimise sampling error in the two studies for this thesis, every effort was made to match the sample as closely as possible to the population of interest; for Study 1, the requirement was that the sample should comprise adult workers of various ages from 18 years upwards. It was impossible to obtain a probability sample as it was impossible to create a list of this nature to then select from it. The best approach was to try to engage as many and as diverse a sample as possible from the employees in that organisation. To achieve this, the study was widely publicised to all members of staff, and all people present in the area on the days assigned for data collection were approached and personally invited to take part. For Study 2, a stratified convenience sample was obtained, by offering the Colleague survey only to warehouse colleagues (rather than managerial or supervisory staff, or administrative officers). However, these approaches are defensible in that each sample provided data which was clearly relevant to the research objectives, and neither sample had any characteristics or traits which would introduce systematic sampling error by biasing the outcomes.

The final sample sizes were 301 participants for Study 1, and for Study 2, 151 'paired' sets of Colleague plus Line Manager questionnaires were obtained. This paired approach in Study 2, necessary to combat problems arising from common method variance, meant that not all questionnaires completed were used, only those where both Colleague and their line manager had completed their respective questionnaire were analysed.

The sample size for Study 1 was considered 'good' for factor analysis as at 301, was larger than the recommended minimum of 200 (Tabachnick & Fidell, 2014; Wilson van Voorhis & Morgan, 2007). Relying on the guidelines of Wilson van Voorhis & Morgan (2007) it may be determined that the sample size for Study 2 ($N = 151$) meets the minimum number; Wilson van Voorhis & Morgan (2007) state that to calculate the minimum sample size for regression equations utilising six or more variables, a minimum of 10 participants per variable is necessary, although of course larger samples do develop more power. The conceptual model for Study 2 contains nine variables: age (AGE), Open-ended FTP (OEFTP), Limited FTP (LIMFTP), positive emotional experience (POS), developmental goal orientation (DEV GOAL), in-role performance behaviours (IRB), satisfaction with learning opportunities (LJS), mental well-being (MCS), and HRM System Strength (HRMSS). The required number of participants for Study 2 therefore exceeds this minimum of 90. As the sample for Study 2 contains no anomalous characteristics, it may be argued that the findings are therefore generalisable to wider populations of workers of various ages.

Analysis strategy

For Study 1, the objective was to determine whether or not the non-survey methods previously used by Lang & Carstensen (1996) and Carstensen et al., (2000) to measure, respectively, goal orientation and the positivity effect, could be successfully adapted for survey administration. Therefore, the analysis of the results was designed to show a) whether

the factor structure of the adapted measures was comparable to that of the original methods, and b) to establish the internal and external validity of the adapted measures.

For Study 2, the objective was to explore the effects of age on developmental goal orientation via future time perspective, and positivity, and the consequential effect of this on organisationally-important outcomes (in-role performance, satisfaction with learning opportunities, and mental well-being). The influence of the line manager in enacting HRM processes, as a boundary condition, was also explored.

To confirm the factor structure in the Study 1 data, IBM SPSS v. 23 was used, along with IBM Amos v. 23 in which structural equation modelling was carried out, to confirm the fit of the data to the hypothesised model. In Study 2, IBM SPSS v. 23 and IBM Amos v.23 were used, but additionally the PROCESS Macro (Hayes, 2012-18) was also used to examine the mediation and moderation effects.

3.6. Ethical considerations made in this thesis, and protection of data

Ethics refers to 'the appropriateness of your behaviour in relation to the rights of those who become the subject of your work, or are affected by it' (Saunders et al., 2009, pp. 183-184) and in practical terms, means that research has to be methodologically sound and morally defensible.

In business and management research there are two predominant philosophical viewpoints, of deontology and teleology. The first of these, the deontological view is that unethical research can never be defended no matter how critical or morally-defensible the outcome. In other words, the end *does not* automatically justify the means. The second view, that of teleology, adopts the opposite arguments, that if the ends served by the research are important enough, then unethical research may be permissible. However, in deciding

whether or not a research proposal is morally and ethically sound is never as simple as weighing the cost to one group of people against the cost to another group (Saunders et al., 2009), and ethical issues must be carefully considered at every stage in the research process.

In keeping with many research projects, the research for this thesis has been guided and governed by both professional and educational codes of ethics. The project was designed and implemented in accordance with the American Psychological Association's 2010 Ethical Principles and Code of Conduct (APA, 2010), and was approved by the Aston Business School Research Ethics Committee.

Participants in both studies completed a paper-based questionnaire. However, in Study 2 as well as warehouse colleagues completing the questionnaire, their line managers were also asked to rate the direct reports' in-role performance behaviours. To enable the two questionnaires to be linked, a list of employees with a randomly-assigned survey number was circulated. Colleague participants were asked to note their survey number, and that of their line manager on their completed questionnaire, and line managers were similarly asked to note their own and the survey number of their direct reports on their behavioural assessments.

Prior to collecting any data, potential participants in both studies were provided with fulsome information about the purpose of the research, and the way in which their data would be handled, stored and used, and the overall benefits of the research in both the wider academic sense and to them as individuals. In particular, the voluntary nature of their involvement was stressed, and their right to withdraw their data explained. For participants in Study 1, because no personally identifying data was collected, it was impossible to identify any individual's data after submission. For participants in Study 2 although it was

explained that they could withdraw their data from the study if they should change their mind about participation using their unique survey number, after the data had been processed and analysed, withdrawal would become impossible as the survey number was removed from the dataset after the colleague and line manager questionnaires had been linked. It was also stressed to all participants that participation, or indeed later withdrawal, was a matter of personal choice and participation would not be communicated to anyone in the employing organisations.

Participants were not offered any reward or compensation, although all who completed the questionnaire for Study 2 were entered into a draw to win shopping vouchers.

The questionnaires for both studies did not collect any personally-identifying data, and this was highlighted to participants as a way of protecting their confidentiality and the anonymity of their responses.

The data collected will be securely stored for 10 years and will be destroyed at the end of this period, or other time period if this requirement should change (UK Research Council, 2009) in the interim.

For Study 2, it must be noted that access to participants was via the site Operations Manager, who may therefore be perceived as a gatekeeper, and that to the employees, the granting of such access might be considered to signal a desire on the part of their manager for them to take part, thus introducing an element of perceived coercion. To prevent this, the entirely voluntary nature of participation was stressed, and all participants were given the opportunity to ask questions about the purpose and aims of the studies, so they understood

that they were under no pressure to take part but also, importantly, whether or not they eventually chose to participate would not be communicated to anyone.

3.7. Chapter summary

In this chapter, the underlying philosophical frameworks for research were discussed, and the approach taken in this thesis was outlined, along with the most common approaches by researchers in the discipline. The sampling method, data collection protocol and data analysis strategy were introduced and discussed. Finally, the ethical and data protection issues which have been taken into account in the execution of this work were explained.

CHAPTER 4: STUDY 1 – INSTRUMENT ADAPTATION AND VALIDATION

In this chapter I explain the method used to develop survey-based instruments, broadly based on existing non-survey techniques previously used to measure participant goal orientation and positivity. In this study, the factor structure of future time perspective was also explored and confirmed. The results from the validation study (Study 1) are reported, followed by a discussion of their significance for the main model testing study (Study 2).

4.1. Introduction to Study 1: Instrument development / adaptation

Before the theoretical relationships between age, and goal orientation and positivity, can be examined and used in study 2 or more widely in other organisational studies, reliable, valid and equally-importantly, user-friendly measures are needed to be able to provide empirical evidence demonstrating the conceptual causal links made for the effects of SST; Thus far, socioemotional goal orientation and positivity have only been measured using card sort and / or diary study methods which are neither practicable nor feasible for use in large-sample organisational studies. Therefore, in order to carry out Study 2, which is a survey-based study to test the principal hypotheses in this thesis, it is necessary to develop such measures.

Study 1 takes the form of a quantitative survey in which the adapted measures of positivity and goal orientation are offered to enable their structure and construct validity to be assessed. To enable the structure of future time perspective to be assessed this also formed part of the questionnaire, along with participant age. Collecting data on age allowed us to preliminarily test relationships between age and our newly adapted measures (see Fig. 4.1).

The objectives of Study 1

In summary, therefore, the aim of Study 1 is to fill a methodological gap by adapting the non-survey methods previously used, to produce reliable and valid survey instruments to measure the extent to which individuals are developmentally-orientated and / or emotionally-orientated, and also the presence and magnitude of the positivity effect. Additionally, it seeks to confirm the factor structure of FTP. To this end, the objectives of this study are:

1. To assess the reliability, and factor structure of the adapted measurement instruments to measure goal orientation and positive emotional expereince, and to assess their validity in accordance with socioemotional selectivity theory. (Fig 1)

2. To investigate and confirm the factor structure of FTP.
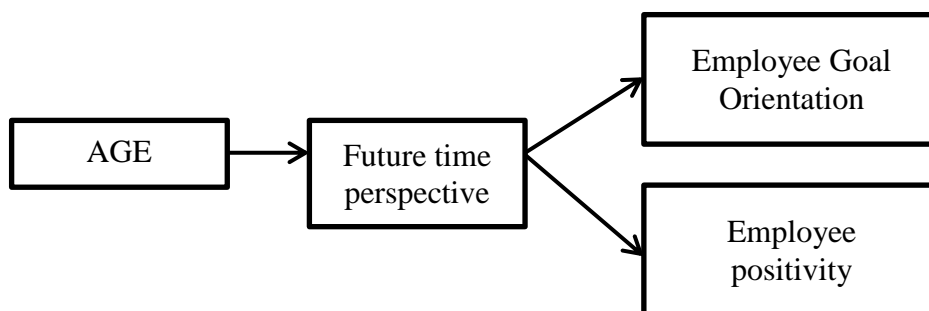
Fig 4.1: The conceptual framework for Study 1, validation of measures

4.2. Sample and design

General method

It is common when developing new scales to use the Hinkin (1998) 6-step scale

development process (Item generation; Questionnaire administration; Initial item reduction;

Confirmatory Factor Analysis; Convergent / Discriminant Validity; Replication), which is a

guide to the development of measures 'from scratch'. It is not possible to determine how the

original items we generated by Lang & Carstensen (2002), or whether or not they followed

Hinkin's (1998) recommended process. They do not mention Hinkin (1998), and given that

they were carrying out their research prior to 2000, when Hinkin was relatively

unacknowledged, it is highly unlikely that they followed his guidelines especially given that

they were not aiming to develop a survey method. However, they confirmed the factor

structure in the data they gathered, using structural equation modelling, they obtained clear

loading patterns with confirmatory factor analysis, and found that factor loadings were

invariant of age cohort (they used a sample of adults with ages which ranged from 20 years

to 90years). These steps reasonably replicate the CFA and validity steps in Hinkin's (1998)

guidelines, and this work has been cited in excess of 1100 times with its published measure,

so it seems reasonable to use this study as the basis for my own work, although for this

adaptation of existing non-survey measures, not all the stages in Hinkin's (1998) process are

necessary. In particular, the first step, 'item generation' is not necessary as the items already

exist within the non-survey methods. As this step is not necessary, neither are the second and

third steps, which serve to refine the initial items generated, with the aim of reducing the

number of items and removing any which clearly have poor content validity or appear

theoretically inconsistent, and thus to produce a 'long list' of items to be further assessed via

confirmatory factor analysis (CFA).

Therefore, only steps four and five are required; CFA and tests of validity are described in

this chapter. The final step, replication, is intended to increase the generalisability of a

completely new measure. However, as these are adapted measures it is necessary to simply show comparability between the original method of data collection and the survey-based version.

Participants: The purpose of Study 1 is to demonstrate the validity and reliability of the adapted measures in an organisational setting. The sample profile therefore requires that the sample is as representative of the general working population as possible in terms of age, gender, and educational attainment. Physical and mental health are relevant as poor health will affect a participant's overall outlook. Other diversity characteristics of the sample for example, sexual orientation or faith, are less likely to affect age-related psychological changes, so are considered relatively unimportant, and were therefore not taken into account when identifying the sample.

Access was negotiated to administer a survey to all willing employees of a large public sector organisation in the midlands of England, and this was carried out during January 2014. Prior to the survey being offered, employees were made aware of the survey with posters which were placed strategically around their building, and also by a general email which was circulated to all organisational email addresses. The posters explained the purpose of the study, and advertised when participation was possible. All employees were eligible – and invited – to take part, and the final sample was those who volunteered to complete the survey. The poster and the text provided for circulation by email may be viewed in Appendix C.

Procedure: Data was gathered over four days, by direct approach to employees in the main concourse (known within the organisation as The Street) of their corporate HQ. All employees pass through this area on their way to and from their office or work area, and also

frequently during the day to access restaurants, meeting areas, smoking areas, toilets, and other facilities. I approached employees as they were in the area en-route to other parts of the building, or while they were taking breaks, to request completion of the questionnaire. No employee was put under any pressure to participate and if they declined they were not approached further. Some participants chose to complete the questionnaire while they were taking a break from work; others took it away for completion and returned it later, by returning it to myself either the same day or on my next visit. A small number of questionnaires were returned by post in the week after completion of on-site visits. Over four days, and with the later postal submissions a total of 301 questionnaires were completed and returned, making the sample size acceptable for factor analysis (Tabachnick & Fidell, 2013).

4.3. Measures

Developing a survey-based instrument to measure positivity, based on Carstensen et al.'s (2000) diary study

Socioemotional selectivity theory (SST) posits that older people focus on perceived time left rather than on past experience, and this suggests that as people age they strive more for emotional satisfaction. The effect of this when overlaid with the notion that there is reduced time left to enjoy emotional experiences, is to make these emotionally-satisfying experiences more precious. The purpose of Carstensen, Pasupathi, Mayr & Nesselroade's (2000) study was to assess the frequency and intensity of emotional experience in everyday life across the adult lifespan, including both positive and negative emotions. They hypothesised that increased age would result in older people experiencing negative emotions less frequently than younger people, but that they would experience positive emotions as frequently as their younger participants, thus leading to an overall happier and more contented outlook than is generally found in younger people. They additionally hypothesised that the intensity of the emotions would be the same for older and younger people, and that as a result of better emotional control, older adults' positive emotional states are maintained for longer (and

negative states terminated more quickly) than in young people. Again, the combined effect of these emotional states means that older people tend to be happier and more positive than younger people.

The original Carstensen, Pasupathi, Mayr & Nesselroade's (2000) diary study method

To test these hypotheses, Carstensen et al. (2000) recruited a sample of 184 African American (31%) and European American (69%) participants living in the San Francisco Bay area, with an age range of 18 to 94 years. The mean age was 55, and the sample was diverse in terms of white-or blue-collar workers, gender and race. Diversity was evenly distributed across the age range.

Each participant was provided with an 'Emotional Sampling Booklet' which contained 35 sheets, each of which listed 19 possible emotions which the participant could be feeling, as well as an 'other' option, where participants could add their own additional emotion if their feelings were not accurately covered by the proffered options. These included negative and positive emotions. Full details of the 19 emotions surveyed in this study may be found in Appendix B. Each participant was also provided with an electronic pager which was used to page participants five times each day over a period of one week, at random times between 09.00 and 21.00. When the pager was activated, participants acknowledged receipt of the signal, and then completed one page in their booklet to indicate the emotions they were feeling at the time the pager had been activated. Their responses were on a 7-point scale, where 1 = *I am not feeling that emotion at all* and 7 = *I am feeling that emotion extremely.* Thus, over the week each participant recorded their feeling across the 19 emotions on 35 separate occasions, resulting in 665 individual experience reports for each participant. These were then analysed to show, for each subject, the mean number of occurrences for each emotion, and the mean intensity of the experiences in order to test the hypotheses.

Study 1: Measuring positivity - method

To replicate Carstensen et al.'s (2000) study using a survey-based method, the same 19 emotions were listed (see Appendix B) and participants asked to consider how much they had felt each emotion during the previous 7 days. Response choices were 1 = *Have not felt this at all* to 7 = *Have felt this extremely.*

It was felt necessary to adapt the original Carstensen et al (2000) items for survey use, rather than use the Positive and Negative Affect Schedule (PANAS: Watson et al, 1988) or the short form of the PANAS (Kercher, 1992) firstly to replicate the original instrument as closely as possible (the PANAS scales and Carstensen et al.'s (2000) emotions sampled have only six out of 20 emotions in common – *interest/interested, excitement/excited, guilt/guilty, fear / scared, pride / proud,* and *shame/ashamed*). Additionally, several of the positive effects in the PANAS scale (PA) items are not in truth emotions or emotional states (for example, active, alert, strong), and some of the most obvious emotions are missing – happiness, sadness, anger (Jovanovic, 2015). Moreover, research (Carp & Carp, 1983; Lawton, Kleban & Dean, 1993) suggests that many of the existing scales of positive and negative effect, including Watson et al.'s (1988) PANAS scale are not consistent and stable across age groups, indicating that their use to measure age-related changes in emotional experience would be inadvisable.

Moreover there is a difference, conceptually, between emotion and affect. Affect describes broadly-felt feelings, perhaps more akin to moods which will potentially drive and govern our actions, whereas emotions are specific human relational reactions to stimuli e.g. anger, happiness, and therefore also have a cognitive element to their development. (Anderson & Harrison, 2006) .Clearly there is some overlap e.g. it is possible to be generally happy, as well as experiencing happiness as a result of a stimulus. However, with these definitions it is

possible to see how the PANAS scale is measuring affect with such items as strength and alertness, whereas the Carstensen et al. (2000) items show how we are responding to external stimuli.

The limitations of this method when compared with Carstensen et al.'s (2000) study are that it relies on the accuracy of people remembering how they had been feeling during the previous week, rather than asking them to focus on a single point in time while it was actually happening, which is likely to more accurate. This is likely to be influenced by the recency effect (Murdock, 1962), with more recent emotional memories being better remembered. Moreover, the current mood at the time of taking the survey (Clore & Huntsinger, 2007) will affect the memory of the emotional episode, either negatively or positively. However, it is neither cost-effective nor practical to use the diary study method to integrate with large-scale survey-based data collection methods because of the cost of the pagers and managing the distribution and later collection of the sampling booklets, therefore the use of a short-term memory-based method is justified.

Developing a survey-based measure of goal orientation based on Lang & Carstensen's (2002) card sorting method

Socioemotional Selectivity Theory (SST: Carstensen, 1992, 1993, 1995; Carstensen & Charles, 1998; Carstensen, Isaacowitz & Charles, 1999) posits that as people grow older, or perceive they are approaching an ending to some aspect of their life, they experience a gradual change from being motivated towards achieving developmental goals and social networking experiences toward achieving more emotionally-satisfying goals and social events relative to that anticipated event. This phenomenon is commonly observed in the normal aging process, as well as when individuals face non age-related endings, such as leaving a job, or moving to a new location. Although this concept has been used extensively

as a theoretical and conceptual explanation for changes in various dependent variables in studies of the effects of aging (see section 2.3 in the Literature Review in Chapter 2, for a more detailed account), a survey-based measurement instrument to measure the goal orientation constructs of SST has not thus far been developed. This is an important necessary step toward being able to operationalise SST and to assess the magnitude of the effects of age-related change on goal orientation, in empirical settings.

The original Lang & Carstensen (2002) card sorting exercise

In 2002, Frieder Lang and Laura Carstensen used a card sort task to measure goal orientation as defined within SST. Their sample was comprised of German citizens (N = 480), recruited by stratified probability sampling using the Berlin registration office to identify potential subjects. For each birth year, four men and four women were recruited, thus developing a gender-balanced sample of three age-categorised cohorts: young adults, aged between 20 and 40 years of age (n = 160), middle-aged adults aged between 45 and 65 years of age (n = 160), and finally a group of old adults aged between 70 and 90 years (n = 160).

In Lang & Carstensen's (2002) study, after a practice test to be sure they had understood the task, participants were presented with 20 cards printed with goal statements, and were asked to sort the goals by prioritising them according to how important the goal was to them at that point in time. Participants could create as many piles of goal cards as they liked, and goals with higher priority were placed to one side of the table, while those with lower priority goals were put to the other side. Participants could move cards or reassign them to different piles as many times as they wished. The greatest number of piles created by any individual was ten, and the fewest was two. Cards could also be discarded if the participant felt they did not apply to them. The purpose of this exercise was to identify those goals which were given higher priority, and which had lower priority for individuals at that point in their life.

When the card sorting was complete, the piles of goal cards were scored; those on the highest priority pile (regardless of how many piles had been created, or how many cards were in the pile) were awarded a score of 3 = *most prioritised goals*. Those on the lowest priority pile were scored as 1 = *least prioritised goals*, again regardless of the number of piles or cards in the pile. All other cards were scored as 2 = *indefinite priority*. Scores were than analysed using exploratory factor analysis with orthogonal factor rotation, revealing a four-factor structure in the data, with domains of social acceptance, autonomy, generativity, and emotion regulation. Future time perspective was also measured in Lang & Carstensen's (2002) study. The prioritisation of social acceptance and autonomy as being important was found to be associated with people whose future time perspective was perceived as more open-ended, and those of generativity and emotion regulation were generally prioritised as of higher importance by those with a perception of the future as limited. In their study Lang & Carstensen (2002) considered FTP to be a single bi-polar construct with values from open-ended to limited, with the mid-point area being classified as 'indefinite'.

The card sort exercise was conducted during face to face meetings, with a guide who introduced and supervised the task and later scored the prioritised cards and debriefed the participants. This is clearly an extremely time-consuming undertaking, and would be very expensive to replicate.It is therefore impractical to use in larger scale, survey based research. The purpose of Study 1 therefore was the development of a valid, survey-based instrument, based as closely as possible on the work of Lang & Carstensen (2002) which could easily and cost-effectively be used in organisational and academic research.

Study 1: Measuring goal orientation - method

The same 20 statements as used on the cards by Lang & Carstensen (2002) were presented to participants as survey items. This is to replicate the work of Lang & Carstensen (2002) as

closely as possible, to enable meaningful comparisons to be made between the two studies. Participants were asked to indicate how important each goal was to them, at that point in time, on a nine-point scale where 1 = *least important to me at this time*, and 9 = *most important to me at this time*. As the original method had elicited up to 10 response 'piles' of cards, nine was chosen as the best possible response scale option as this allowed respondents a similar degree of freedom to express degrees of priority in this survey method as in the original card sort task, while still allowing a neutral mid-point. Details of the items may be found in Appendix B.

This approach, while replicating the goal statements offered in the original study and asking participants to prioritise these, does have certain limitations. First, unlike in the card sort exercise, it is not easy to 'recalibrate' earlier decisions. For example, during the card sort exercise, if a participant wishes create an extra pile between two existing ones because they feel that the priority of a particular goal lies between two others, which they have already classified, it is quick and simple to do this by simply creating a new pile in the array. With the survey method, although it is theoretically possible to do this, in reality it is highly unlikely that a participant will revisit, and adjust, all their earlier scores to accommodate a new, interim priority which they wish to assign to later goals. This means that the element of each statement being accurately rated against the others is not available, and the survey therefore relies instead on an absolute score of priority. Second, by offering a fixed number of priority scores, participants may have been influenced to use scores which they would not naturally have done, had they been carrying out the card sort exercise. A final limitation is that unlike in the card sort exercise, where the person administering the task was available to clarify any goal which the participant did not understand, if a participant did not fully understand the statement in the survey they had no one to guide them, to facilitate an accurate prioritisation choice.

Study 1: Other variables

Age

I used age as a continuous variable rather than splitting the sample into 'older' and 'younger' respondents, because as advised by MacCallum, Zhang, Preacher & Rucker (2002: p.38), 'dichotomisation of quantitative variables has substantial negative consequences in most circumstances in which it is used. These consequences include loss of information about individual differences; loss of effect size and power in the cae of bivariate relationships; loss of effect size and power, or spurious statistical significance and overestimation of effect size in the case of analyses with two independent variables; the potential to overlooknon-linear relationships ; and, ... loss of measurement reliability. These consequences can easily be avoided by application of standard methods of regression and correlational analysis to original (undichotomised) measures'.

Future time perspective

In keeping with the Lang & Carstensen (2002) study described above, future time perspective (FTP) was also measured using the Carstensen & Lang (1996) 10-item scale, to facilitate testing for convergent construct validity. For details of the items for that scale, see Appendix B.

However, since the development of the Lang & Carstensen (1996) scale which was used in these earlier studies by Lang & Carstensen (2002) and Carstensen et al. (2000), others (e.g.,Cate & John, 2007; Kooij et al., 2013; Zacher & Frese, 2009) have argued that FTP, rather than being a single bi-polar construct is a 2-factor construct; a *focus on limitations* (**Limited FTP**), and a *focus on opportunities* (**Open-ended FTP**). This proposal allows for independence of reactivity to age; an individual may be simultaneously high on both factors

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– aware of their limitations, but nevertheless still feeling that life offers many opportunities. Study 1 therefore provides an opportunity to explore and confirm the factor structure of FTP.

Mental and Physical Health

Additionally, and in keeping with the Carstensen et al. (2000) study, participants' mental and physical health was assessed using the QualityMetric® SF-12v2[2] Health Survey. This was chosen rather than the measure used in Carstensen et al.'s (2000) study which used the Cornell Medical Index Health Questionnaire (CMI: Brodman, Erdmann & Wolff, 1949) which comprises 195 items. This choice was made on grounds of brevity and equivalence; to ask a participant to answer such a large number of questions was not reasonable, and the SF-12v2 Health Survey, like the CMI, produces both a physical and a mental health index score using just 12 questions. Health, and in particular mental health may affect a person's outlook and how positively they view the future (Carstensen et al., 2000), so a measure of health is important for use as a control variable. Full details of the QualityMetric® SF-12v2 Health Survey may be found in Appendix A.

Other Variables

In the same questionnaire participants' age, gender, and highest educational attainment was gathered, to demonstrate that the sample was normally-distributed with regard to these variables, and representative of the population at large. As the primary purpose of Study 1 was to validate the survey instruments rather than to assess the consequential effects of the constructs, no further data was gathered other than this demographic data.

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[2] The SF-12v2® Health Survey is copyrighted by QualityMetric Incorporated. The SF-12® and SF-12v2® are trademarks of the Medical Outcomes Trust and are used under license.

4.4. Analysis Strategy

Data Preparation

Data were initially checked for errors and large amounts of missing data; any with substantial amounts of missing data were referred back to the participant for clarification if they were present, or withdrawn if the participant no longer wished to complete the survey. Just one respondent declined to answer any questions about their health, and this choice was respected. Items measuring the various elements of physical and mental health for the SF-12v2® Health Survey was initially processed using the software provided by the developer to create scores for each item, and also indices of physical (PCS) and mental (MCS) health, which were then transferred into the main data file for use in the main analysis. The physical component score – PCS, and mental component score – MCS, are T-scores and are calculated against 2009 United States population norms, thus a score of 50 on these component indicates the score is equal to the mean population score, and + or − 10 from 50 indicates 1 *SD* from the mean, + or − 20 from 50 indicates 2 *SDs* from the mean. UK population norms were not available, but research (Wycherley, Lavender, Holttum, Crawford & Mocklet, 2005) suggests that USA norms may be safely used with the UK population with just two exceptions within the sub-sets tested by Wycherley et al., (2005), block design and picture arrangement, which did not affect this study.

Kolmogorov-Smirnov tests (D) were carried out to check the normality of the distribution of the demographic data. Age, gender, and highest educational qualification were all highly significant, indicating non-normal distributions (Table 4.1). However, for factor analysis it is desirable but not absolutely necessary for data to be normally distributed (Tabachnick & Fidell, 2014), and with a sample of this nature the deviations from normality merely reflect the variations within the sample; there is no assumption that for these demographic variables that the distribution would be normal.

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Table 4.1: Kolmogorov-Smirnov test results for the demographic variables in Study 1

	Kolmogorov-Smirnov		
	Statistic	df	Sig.
Gender	.388	299	.000
Age	.100	299	.000
Highest Ed Qual	.183	299	.000

Note: Lilliefors Significance Correction

Reliability was checked for all scales, and an inter-item correlation matrix calculated to check the factorability of the data (Tabachnick & Fidell, 2014); with a sample size N>300, reasonable results may be expected (MacCallum, Widaman, Zhang & Hong, 1999). The Kaiser-Meyer-Olkin (Kaiser 1970, 1974) score, and the Bartlett's test for sphericity (Bartlett, 1954) were also calculated for all scales.

For FTP it was appropriate to carry out exploratory factor analysis (EFA) initially, followed by confirmatory factor analysis (CFA) because although the items have been previously used in other data-gathering methods, and their factor structure defined within those studies, the purpose of Study 1 was to explore the factor structure of FTP within this dataset to determine the optimum approach for the use of FTP in future studies, including Study 2.

For the goal orientation and positivity scales, Confirmatory Factor Analysis (CFA) was the analysis method of choice, as the purpose was to compare the structure of the data in Study 1 with that defined by other methods in their respective studies; this study is to assess the extent to which the original constructs and structure has been replicated by this method of data gathering, and whether or not the data fits the hypothesised structural organisation of the data (Nunnally & Bernstein, 1994; Pedhazur & Schmelkin, 1991). Factor analysis was carried out using IBM SPSS v. 21, followed by Structural Equation Modelling (SEM) using IBM AMOS v.21as the method of testing for model fit against hypothesised models.

Finally, partial correlations for the factors of positivity, FTP and age were then calculated after controlling for mental health, in order to identify other relationships which may be present in the data, and to indicate whether or not the relationships between the variables fit with the overall tenets of socioemotional selectivity theory, thus assessing the construct validity.

4.5. Results

Descriptive statistics

Of the 301 participants, 123 (40.9%) were male and 178 (59.1%) were female. Ages ranged from 17 years to 66 years, and the mean age was 44.08 years ($SD = 10.508$ years). All levels of educational attainment were represented within the sample, with more than two-thirds (69.9%) having achieved some level of higher or further education.

Exploration of the structure of future time perspective (FTP)

The inter-item correlation matrix for the variables was calculated to confirm suitability for factor analysis. The item means, standard deviations, and inter-item correlations are presented in table 4.2. Items were scored on a 7-point scale, where 1 = *very UNTRUE* and 7 = *very TRUE*. The means for the items ranged from 3.72 (Item 5: *My future seems infinite to me*) to 4.89 (Item 3: *My future is filled with possibilities*). Analysis of the correlation matrix shows that all items correlated $\geq .30$ with at least four other items in the matrix (range $4 - 9$). Of the 10 items, eight (80%) had seven or more shared correlations which exceeded $\geq .30$. Item 1 (*Many opportunities await me in the future*) has inter-item correlations with Item 2 (*I expect I will set many new goals in the future*) and Item 3 (*My future is filled with possibilities*) $\geq .70$, indicating potential multicollinearity between these items. Advice on the acceptable level of correlations varies; Pallant (2010) suggests that correlations $\geq .70$ may indicate multicollinearity, whereas Field (2012, p. 224) advocates that correlations 'of above .80 or .90' are likely to be problematic. To explore this possibility, the variation inflation factors (VIF) for all items was calculated, and none exceeded the recommended threshold of

10 (Myers, 1990), ranging from 1.78 (Item 8: *I have the sense that time is running out*) to 3.125 for Item 3 (*My future is filled with possibilities*).

The Kaiser-Meyer-Olkin (KMO: Kaiser, 1970, 1974) measure of sampling adequacy was .879, which is greater than the recommended value of .6 necessary for good factorability (Tabachnick & Fidell, 2014). Although Bartlett's test of sphericity (Bartlett, 1954) was significant ($X^2 = 1667.736$, *p= .000*) this cannot be relied upon because of its sensitivity to sample size, and is only recommended where there are circa five cases per variable (Tabachnick & Fidell, 2014), although it indicates the matrix is not an identity matrix and does lend support to the factorability of the correlations matrix. On the basis of the above results, factor analysis was undertaken.

Table 4.2: Future time perspective: Means, standard deviations, and inter-item correlations

	Variables	M	SD	N	1		2		3		4		5		6		7		8		9		10
1	Opportunities in the future	4.72	1.673	301	1																		
2	New Goals	4.74	1.582	300	.746	**	1																
3	Future filled with possibilities	4.89	1.591	301	.734	**	.744	**	1														
4	Most of my life lies ahead	4.42	1.612	299	.515	**	.620	**	.612	**	1												
5	Future is infinite	3.72	1.72	300	.465	**	.518	**	.441	**	.550	**	1										
6	Can do anything I want	4.29	1.725	300	.493	**	.528	**	.580	**	.614	**	.589	**	1								
7	Time for new plans	4.77	1.628	301	.431	**	.505	**	.556	**	.611	**	.483	**	.603	**	1						
8	Time is running out (R)	4.64	1.771	301	.226	**	.295	**	.300	**	.270	**	.198	**	.317	**	.436	**	1				
9	Only limited possibilities (R)	4.72	1.773	301	.437	**	.465	**	.474	**	.440	**	.350	**	.530	**	.531	**	.537	**	1		
10	Experience time as limited (R)	4.06	1.817	301	.272	**	.296	**	.292	**	.206	**	.330	**	.286	**	.318	**	.574	**	.549	**	1

Note: * Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed) R = reverse coded

Cronback's *α* for the FTP Scale was .897 when using all 10 of the original items from the Carstensen & Lang (1996) measure. However, if replicating the work of Cate & John (2007) and Kooij et al. (2103) as discussed in the literature review in the previous chapter, and using just items 1, 4, 5, 8 and 10, the Cronbach's α for the scale is .740, which is within acceptable limits.

To explore the factor structure of FTP, in the first instance exploratory factor analysis (EFA) was carried out. The initial analysis used all 10 items from the Lang & Carstensen (1996) scale, and Oblique Direct Oblimin rotation (Jennrich & Sampson, 1966) because the correlation matrix indicates that the factors are correlated and because future time perspective is a psychosocial behavioural phenomena (Pedhazur & Schmelkin, 1991). Where such behavioural phenomena are being investigated, it is recommended that Oblique Direct Oblimin rotation is used (Pedhazur & Schmelkin, *op cit*).

Relying on the Kaiser-Guttman rule (Guttman, 1954; Kaiser, 1960, 1974), the results indicate that, consistent with the Cate & John (2007) and Kooij et al. (2013) studies, two factors were present in the data, with eigenvalues >1, and which explain 66.367% of the total cumulative variance (Table 4.3).

Table 4.3: FTP: Total Variance Explained

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation sums of Squared Loadings
	Total	% of Variance	Cumu-lative %	Total	% of variance	Cumu-lative %	Total
1	5.251	52.512	52.512	5.251	52.512	52.512	4.977
2	1.385	13.855	66.367	1.385	13.855	66.367	3.072
3	.799	7.991	74.3358				
4	.635	6.352	80.710				
5	.453	4.535	85.245				
6	.363	3.627	88.872				
7	.350	3.495	92.367				
8	.314	3.137	95.504				
9	.232	2.319	97.823				
10	.218	2.177	100.000				

Note.   Extraction Method: Principal Component Analysis

The pattern matrix (Table 4.4) which displays the standardised partial beta weights indicates that all item loadings onto the factors are 'very good' (>.63) or 'excellent' (>.71), with the exception of Item 7 (*There is plenty of time left in my life to make new plans)* which with a value of .604 is considered 'good' (Comrey & Lee, 1992). Item 9 (*There are only limited possibilities in my future*) loads onto both factors although its weighting against Factor 1 (.308) is only just above the suggested loading of .3 in defining a factor, and it is 'very good' at defining Factor 2 (Comrey & Lee, 1992). The structure matrix (Table 4.5) similarly indicates that the correlations between the items and the factors revealed the same pattern of factor loadings. The correlation between the two factors was .437.

Table 4.4: FTP factor analysis pattern matrix

	Component	
	1	2
New Goals	.870	
Filled with poss	.861	
Opps in future	.847	
Life lies ahead	.836	
Anything I want	.730	.117
Infinite future	.702	
Time for new plans	.604	.277
Time running out		.885
Exp time as limited		.865
Only limited possibilities	.308	.645

Note.
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation

Table 4.5: FTP factor analysis structure matrix

	Component	
	1	2
New Goals	.853	.340
Filled with poss	.852	.356
Life lies ahead	.815	.317
Opps in future	.808	.279
Anything I want	.781	.436
Time for new plans	.725	.541
Infinite future	.709	.321
Time running out	.334	.862
Exp time as limited	.332	.845
Only limited possibilities	.590	.780

Note.
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation

What can be clearly seen in the way in which the items load onto the factors is that the interpretation made by Cate & John (2007) that the two factors identified could be interpreted as *a focus on opportunities*, measured by Items 1-7, and *a focus on limitations*, measured by Items 8 − 10, can also be identified within the data for Study 1. Kooij et al. (2013) also made the same broad interpretation of the two factors, calling them respectively *Open-ended FTP* (OEFTP) and *Limited FTP* (LIMFTP). These latter factor labels will be used within the remainder of Study 1 and throughout Study 2.

To assess model fit, confirmatory factor analysis (CFA) was carried out using structural equation modelling (SEM) in Amos v. 21. Four models were tested: Model 1 included all 10 items from the Lang & Carstensen (1996) scale as a single factor; Model 2 which also included all 10 of the Lang & Carstensen (1996) items, but modelled a 2-factor solution; Model 3 used just Items 1,4,5, 8 and 10 as a single factor solution, as discussed in the literature review; Model 4 used the same 5 Items, but modelled a 2-factor solution.

As can be seen in Table 4.6, both Model 1 and Model 3, which fit the data to a single-factor solution return relatively poor fit statistics (Model 1: TLI = .722, CFI = .823, RMSEA = 0.168; Model 3: TLI = .283, CFI = .761, RMSEA = 0.248). Model 2, which uses all 10 Items and fits them to a two-factor solution shows improved fit (TLI = .835, CFI = .898, RMSEA = 0.130) but the model which fits the data best is Model 4 which uses just Items 1, 4, 5, 8, and 10 and fits them to a two-factor solution (TLI = .930, CFI = .981, RMSEA = 0.078). These model fit parameters are within the acceptable levels defined by Schumacker & Lomax (2016) who suggest that a TLI and CFI greater than .90 indicates 'good fit' and a RMSEA of between .05 and .08 indicates 'close fit' (p. 112).

Table 4.6: FTP: Comparison of Model Fit between Four Models

Items Included	Dimensions	α	X$_2$	df	TLI	CFI	RMSEA
All 10 Items (Model 1)	FTP as a single factor	0.897	301.221	35	.722	.823	0.168
All 10 Items (Model 2)	Open-Ended FTP Limited FTP	0.897	187.961	34	.835	.898	0.130
1,4,5,8,10 (Model 3)	FTP as a single factor	0.740	87.885	5	.283	.761	0.248
1,4,5,8,10 (Model 4)	Open-Ended FTP Limited FTP	0.740	10.487	4	.930	.981	0.078

In conclusion, the findings of Study 1 are in accord with the work of Cate & John (2007), and Kooij et al. (2013), that FTP has a two-factor structure with one factor focussing on the opportunities which remain in life, and a second factor which focuses on the limitations in the future. Moreover, using just items 1, 4, 5, 8 and 10 from the Lang & Carstensen (1996) scale provided the best fit model. Therefore this will be the approach taken in Study 2.

4.6. The positivity effect: results

Participants were asked to indicate the extent to which they had felt each of 19 named emotions within the week immediately prior to completing the questionnaire. Responses were from 1 = *Have not felt [this emotion] at all* to 7 = *Have felt [this emotion] extremely*. The inter-item correlation matrix for all the individual variables was calculated to examine factorability. The item means, standard deviations and inter-item correlations are presented in Table 4.7.

Means calculated from a 7-point scale ranged from 1.39 (Item 10: *Frustration*) to 5.31 (Item 12: *Happiness*), with the higher means being for the positive emotions indicating that in general people felt greater positive emotions than negative. The matrix clearly shows the division between inter-item correlations amongst negative emotions in the upper left-hand corner of the matrix, and those between positive emotions in the lower right-hand corner. It is reasonable to expect the strongest inter-item correlations to be between negative items, or positive items, therefore analysis of the correlations will be expressed in terms of these two groups.

Analysis of the correlation matrix shows that all negative items ($n = 11$), with the exception of Item 11: *Boredom*, correlated $\geq$.3 with at least 2 other negative items in the matrix (excluding Item 11, the range was 2 – 8). Of the 11 negative items, four (36%) had six or more shared correlations which exceeded $\geq$.3. Incidence of inter-item correlations was higher amongst positive items, with all (100%) of the positive items ($n = 8$) correlating with all other positive items at $\geq$ .3 or higher. There is less consistency in the inter-item correlations within the negative items ($n = 11$), with a range in the number of inter-item correlations from 2 (18%) for (Item 4: *Disgust*), to correlating with 8 (73%) others (Item 8: *Anxiety*).

Items 12 (*Happiness*) and Item 13 (*Joy*) have inter-item correlations > .7, as do Item 9 (*Irritation*) and Item 10 (*Frustration*). To explore the possibility of multicollinearity for these highly-correlated items, variation inflation factors (VIF) were calculated for all items. However, none exceeded the suggested threshold value of 10 (Myers, 1990), with values ranging from 1.281 (Item 11: *Boredom*) to 4.513 (Item12: *Joy*).

The Kaiser-Meyer-Olkin (Kaiser, 1970, 1974) measure of sampling adequacy was .843, which is greater than the recommended minimum of .6 which is necessary for good factor

analysis. Bartlett's test of sphericity (Bartlett, 1954) was significant ($X^2 = 2615.188$, $p = .000$), indicating the matrix is not an identity matrix (Tabachnick & Fidell, 2014), but the sample size ($N = $ circa 300) is too large to rely on this method of assessing factorability as this test is particularly sensitive to large samples. On the basis of the large number of inter-item correlations and the KMO value, the data suggest that successful factor analysis is appropriate and possible.

Reliability analysis for the scale was satisfactory (Cronbach's $\alpha = .762$), and no item indicated any significant adverse effect on the reliability of the scale.

Table 4.7: Inter-item correlations for the positivity scale

	Variables	M	SD	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Anger	3.80	1.915	298	1																		
2	Sadness	3.97	1.968	299	.411**	1																	
3	Fear	2.65	1.700	300	.324**	.440**	1																
4	Disgust	3.02	1.979	300	.415**	.220**	.265**	1															
5	Guilt	2.58	1.835	298	.323**	.344**	.422**	.191**	1														
6	Embarr-assment	2.21	1.567	300	.278**	.216**	.414**	.168**	.409**	1													
7	Shame	1.82	1.407	298	.159**	.194**	.430**	.126*	.520**	.592**	1												
8	Anxiety	3.55	1.949	300	.305**	.391**	.480**	.133*	.383**	.380**	.355**	1											
9	Irritation	4.30	1.777	299	.499**	.250**	.292**	.379**	.295**	.243**	.163**	.552**	1										
10	Frustration	1.39	1.768	299	.397**	.261**	.229**	.260**	.231**	.237**	.130*	.481**	.705**	1									
11	Boredom	3.18	2.047	296	.280**	.193**	.287**	.191**	.231**	.273**	.258**	.164**	.230**	.189**	1								
12	Happiness	5.31	1.454	300	-.065	-.158**	-.025	.128*	-.104	-.039	-.004	-.142*	.000	-.091	-.054	1							
13	Joy	4.91	1.708	300	-.120*	-.152**	-.027	.122*	-.079	-.043	.011	-.157**	-.038	-.110	-.069	.854**	1						
14	Content-ment	4.80	1.709	300	-.224**	-.317**	-.193**	-.044	-.205**	-.128*	-.125*	-.109**	-.109	-.189**	-.192**	.551**	.560**	1					
15	Excitement	4.57	1.793	298	-.013	-.155**	.003	.056	-.016	.030	.055**	-.117**	-.117*	-.137*	-.043	.572**	.622**	.512**	1				
16	Pride	4.72	1.824	298	-.030	-.142*	-.021	.082	-.013	-.038	-.016	-.130*	-.048	-.057	-.113	.495**	.565**	.498**	.577**	1			
17	Accomplish-ment	4.75	1.685	299	-.123*	-.195**	-.104	.012	-.131*	-.054	-.075	-.180**	-.127*	-.150**	-.247**	.495**	.515**	.541**	.557**	.686**	1		
18	Interest	5.04	1.548	299	-.197**	-.200**	-.134*	-.078	-.111	-.079	-.050	-.182**	-.112	-.125*	-.202**	.445**	.492**	.459**	.564**	.515**	.612**	1	
19	Amusement	5.27	1.504	300	-.018	-.097	-.086	.101*	-.115*	-.074	-.015	-.102	.059	-.015	-.039	.508**	.518**	.446**	.491**	.458**	.447**	.586**	1

Note
* Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed)

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As there is strong evidence from the inter-item correlations matrix of inter-factor correlation, Oblique Direct Oblimin rotation was used (Jennrich & Sampson, 1966) to carry out factor analysis on the data. Relying on the Kaiser-Guttmen rule (Guttman, 1954; Kaiser, 1960, 1974), the results show that there are four factors present in the data which have eigenvalues >1, and which together explain 61.859% of the total cumulative variance (Table 4.8).

Table 4.8: Positivity Scale – Total Variance Explained

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	5.414	28.493	28.493	5.414	28.493	28.493	5.001
2	3.706	19.503	47.996	3.706	19.503	47.996	3.358
3	1.548	8.150	56.146	1.548	8.150	56.146	2.968
4	1.086	5.714	61.859	1.086	5.714	61.859	2.195
5	.940	4.946	66.806				
6	.781	4.110	70.916				
7	.762	4.008	74.924				
8	.630	3.313	78.237				
9	.597	3.142	81.378				
10	.552	2.907	84.285				
11	.469	2.467	86.752				
12	.460	2.420	89.172				
13	.409	2.154	91.326				
14	.369	1.944	93.271				
15	.352	1.851	95.121				
16	.321	1.688	96.809				
17	.255	1.342	98.151				
18	.219	1.151	99.302				
19	.133	.698	100.000				

Note   Extraction Method: Principal Component Analysis

The screeplot (Fig 4.2) shows a break after the fourth component, although the fourth component is very close to the line of slope of the components with lower

eigenvalues and as Pett, Lackey & Sullivan (2003) point out, judging the exact point of discontinuity of the eigenvalues is highly subjective. Relying on Catell's (1966) scree test, it was decided to retain four components. This four-component solution explained a total of 61.859% of the variance, with Component 1 contributing 28.493%, Component 2 contributing 19.503%, Component 3 contributed 8.150%, and Component 4 contributed 5.714%. Moreover, this interpretation is consistent with the original research (Carstensen et al., 2000) and makes intuitive sense.

Fig 4.2: Scree Plot of positivity items, showing four factors above the scree line
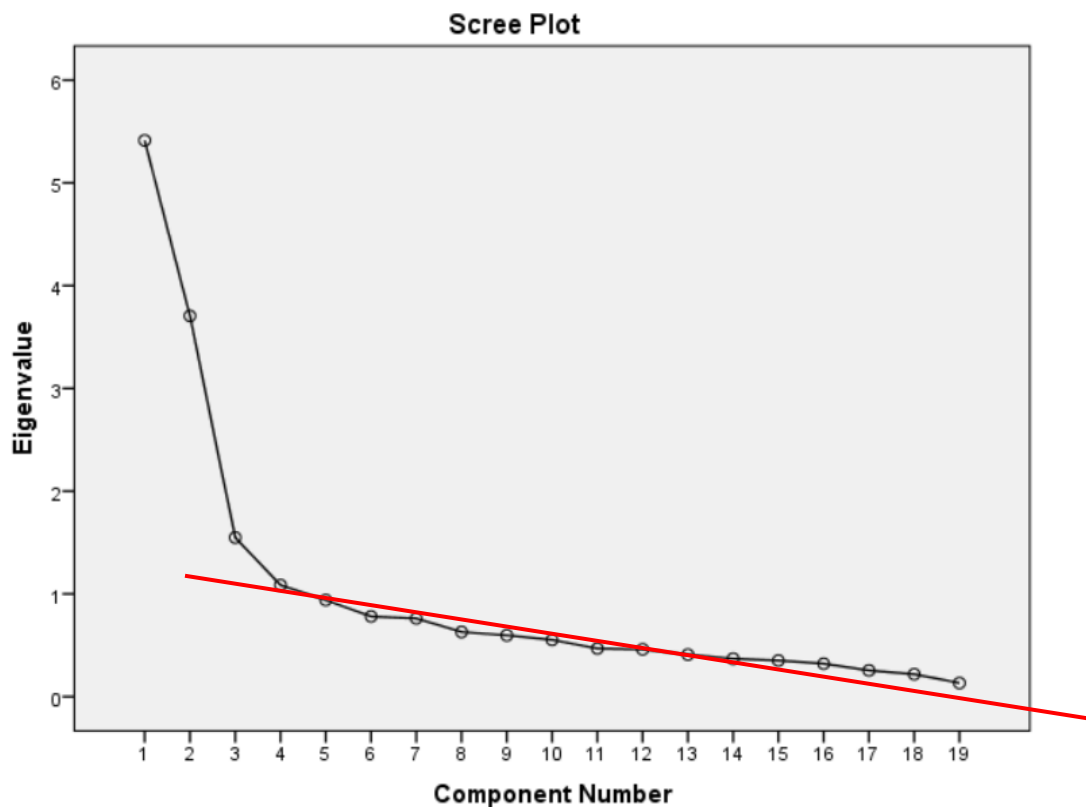
positive items loading strongly on Component 1, and the negative items loading strongly on Components 2, 3 and 4, suggesting that there are sub-factors within the general construct of negativity (Table 4.9). There were weak negative correlations between component 1 and components 2 ($r = -.131$), component 3 ($r = -.118$), and component 4 ($r = -.064$). Therefore the results of this analysis

clearly demonstrate the division between loadings of the positive items on to a

single component, and the loadings on the negative emotions onto three other

distinct components.

Table 4.9: Pattern and Structure Matrices for PCA with Oblimin Rotation of Four Factor Solution of positivity Scale Items

		Pattern Coefficients Component				Structure Coefficients Component			
		1	2	3	4	1	2	3	4
1	Anger	-.037	.058	.398	**.537**	-.126	.315	.550	**.652**
2	Sadness	-.173	.278	.219	.280	-.253	**.436**	.387	**.417**
3	Fear	.007	**.624**	.095	.203	-.099	**.703**	.320	.390
4	Disgust	.150	-.070	.214	**.702**	.090	.154	.348	**.727**
5	Guilt	-.025	**.692**	.087	.043	-.129	**.731**	.295	.247
6	Embarrassment	.039	**.776**	.028	-.022	-.064	**.773**	.236	.185
7	Shame	.066	**.890**	-.121	-.060	-.032	**.831**	.106	.138
8	Anxiety	-.104	**.447**	.613	-.198	-.222	**.582**	**.703**	.077
9	Irritation	.045	-.002	**.849**	.155	-.065	.272	**.882**	.360
10	Frustration	-.032	-.020	**.856**	.019	-.132	.230	**.858**	.226
11	Boredom	-.121	.248	-.152	.597	-.174	.377	.078	**.632**
12	Happiness	**.804**	-.023	-.061	.226	**.800**	-.086	-.107	.154
13	Joy	**.837**	.020	-.092	.187	**.833**	-.067	-.139	.116
14	Contentment	**.706**	-.119	-.063	-.081	**.734**	-.250	-.200	-.173
15	Excitement	**.797**	.154	-.148	.089	**.789**	.032	-.176	.043
16	Pride	**.787**	.061	.051	-.034	**.775**	-.036	-.033	-.056
17	Accomplishment	**.779**	.020	.036	-.193	**.785**	-.123	-.098	-.229
18	Interest	**.743**	.037	.056	-.278	**.749**	-.117	-.089	-.302
19	Amusement	**.723**	-.085	.150	.058	**.713**	-.122	.055	.026

Note.   Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation. Major loadings for each item are in **bold**

Confirmatory factor analysis was then carried out, forcing a two-factor solution.

As can be seen from the pattern and structure matrices (Table 4.10) this provides

a clear indication that the data fit a two-factor structure, thus supporting the

construct validity of the survey-based instrument to measure positive and

negative experience.

Table 4.10: Pattern and Structure Matrices for PCA with Oblimin Rotation of Two Factor Solution of positivity Scale Items

| | | Pattern Coefficients | | Structure Coefficients | |
| | | Component | | Component | |
		1	2	1	2
1	Anger	-.021	**.650**	-.117	**.653**
2	Sadness	-.165	**.549**	-.244	**.574**
3	Fear	.021	**.691**	-.082	**.688**
4	Disgust	.176	**.509**	.101	**.483**
5	Guilt	-.018	**.646**	-.113	**.649**
6	Embarrassment	.046	**.632**	-.048	**.625**
7	Shame	.076	**.593**	-.012	**.582**
8	Anxiety	-.120	**.686**	-.222	**.703**
9	Irritation	.034	**.699**	-.070	**.694**
10	Frustration	-.050	**.609**	-.140	**.616**
11	Boredom	-.088	**.445**	-.154	**.458**
12	Happiness	**.813**	.059	**.805**	-.061
13	Joy	**.845**	.048	**.838**	-.078
14	Contentment	**.701**	-.200	**.730**	-.304
15	Excitement	**.804**	.059	**.795**	-.060
16	Pride	**.783**	.054	**.775**	-.062
17	Accomplishment	**.768**	-.085	**.780**	-.198
18	Interest	**.727**	-.105	**.743**	-.213
19	Amusement	**.719**	.062	**.710**	-.045

Note.   Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalisation. Major loadings for each item are in **bold**

The analysis of the factor structure of the survey-based items indicates a two-factor structure in the data, positive and negative emotions. There are indications that there may be some sub-categories within the negative emotions. This requires further analysis and interpretation to identify what these might be, but they are clearly negative rather than positive, and so do not materially change the outcome of the investigation.

4.7. Goal orientation: results

Participants were asked to consider the same 20 statements used by Lang & Carstensen (2002), to prioritise how important they were at that point in time, placing them on a 9-point scale where 1 = *Least important to me at this time* and 9 = *Most important to me at this time*. Details of the 20 items may be found in Appendix C.

The inter-item correlation matrix for all the individual items was calculated to explore the factorability of the data. The item means, standard deviations, and inter-item correlations are presented in Table 4.11. Means ranged from 5.31 (Item 12: *To leave my mark on the world*) to 7.85 (Item 20: *To be financially independent*). The values of the means in themselves indicate that all items were afforded quite a high level of priority.

Analysis of the inter-item correlations table shows that many of the correlations are significantly correlated at $\geq .3$ in the table. The fewest number of correlations with other items at $\geq .3$ is 2 (10%) for item 1: *Discernment*, and the greatest number is 16 (80%) for item 19: *To have control over my feelings*. Of the 20 items, 11 (55%) had 10 or more inter-item correlations $\geq .3$. There was a very high level of correlation (.829) between Item 6 (*To have good friends who accept me as I am)* and item 8 (*To have close friends who trust me*) and also (.732) between item 8 (as above) and item 9 (*To be able to confide in a close friend at any time*). Analysis of the variation inflation factors (VIF) scores for these items shows that for the items in the scale, none was greater than Myers' (1990) threshold of 10; the highest was item 8 (*To have close friends who trust me*) which showed a collinearity score of 4.182, so is within tolerance.

Table 4.11: Inter-item Correlations for Goal Orientation Items

	Variables	M	SD	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Discernment	6.35	1.990	297	1																			
2	Not depend on someone's feelings	5.88	2.088	296	.315 **	1																		
3	Determine own future	6.46	2.094	299	.211 **	.424 **	1																	
4	Autonomous in feelings	6.21	2.045	295	.354 **	.466 **	.584 **	1																
5	Receive approval for work	6.30	2.025	300	.214 **	.154 **	.149 *	.257 **	1															
6	Good friends accept me as I am	7.54	1.669	300	.257 **	.252 **	.266 **	.294 **	.380 **	1														
7	Be with people who value my opinion	6.23	2.038	300	.253 **	.239 **	.197 **	.205 **	.392 **	.500 **	1													
8	Have close friends who trust me	7.71	1.651	296	.236 **	.246 **	.191 **	.243 **	.333 **	.825 **	.460 **	1												
9	Able to confide in close friends any time	7.29	1.962	300	.183 **	.231 **	.162 **	.201 **	.325 **	.663 **	.430 **	.732 **	1											
10	To receive good advice on important decisions	7.24	1.695	298	.144 **	.183 **	.122	.172 **	.332 **	.405 **	.391 **	.477 **	.621 **	1										
11	Not to feel lonely	6.56	2.356	299	.120 *	.194 **	.062	.191 **	.259 **	.354 **	.234 **	.332 **	.449 **	.459 **	1									
12	To leave my mark on the world	5.31	2.483	298	.229 **	.139 *	.089	.103	.192 **	.172 **	.364 **	.146 *	.237 **	.258 **	.291 **	1								
13	Be available to comfort others	7.05	1.760	299	.265 **	.258 **	.180 **	.209 **	.372 **	.393 **	.311 **	.384 **	.387 **	.427 **	.351 **	.312 **	1							
14	Able to pass on my knowledge / experience	6.85	1.794	300	.289 **	.191 **	.186 **	.163 **	.311 **	.357 **	.374 **	.333 **	.358 **	.424 **	.214 **	.433 **	.649 **	1						
15	To help others find their purpose in life	6.05	2.072	300	.273 **	.294 **	.194 **	.184 **	.226 **	.265 **	.336 **	.258 **	.247 **	.322 **	.245 **	.434 **	.541 **	.627 **	1					
16	Have a large experience of life	6.88	1.976	298	.212 **	.286 **	.260 **	.203 **	.200 **	.320 **	.319 **	.355 **	.314 **	.316 **	.200 **	.435 **	.383 **	.416 **	.556 **	1				
17	Know self and own feelings well	7.04	1.940	299	.284 **	.332 **	.295 **	.331 **	.254 **	.416 **	365 **	.441 **	.458 **	.375 **	.252 **	.299 **	.448 **	.453 **	.384 **	.460 **	1			
18	Be well-educated & knowledgeable	6.75	1.903	300	.261 **	.238 **	.230 **	.302 **	.249 **	.306 **	.345 **	.293 **	.254 **	.272 **	.245 **	.306 **	.247 **	.306 **	.278 **	.517 **	.430 **	1		
19	To have control over own feelings	7.29	1.672	297	.188 **	.329 **	.344 **	.361 **	.233 **	.388 **	.346 **	.374 **	.375 **	.397 **	.437 **	.157 **	.382 **	.335 **	.330 **	.375 **	.533 **	.533 **	1	
20	To be financially independent	7.85	1.538	300	.214 **	.329 **	.328 **	.302 **	.223 **	.399 **	.276 **	.435 **	.374 **	.382 **	.268 **	.202 **	.387 **	.312 **	.200 **	.383	.407 **	.417 **	.555 **	1

Note   * Correlation is significant at the 0.05 level (2-tailed),   ** Correlation is significant at the 0.01 level (2-tailed)

The Kaiser-Meyer-Olkin (Kaiser, 1970, 1974) measure of sampling adequacy for the goal orientation items was .870, so greater than the minimum recommended measure of .6 . Bartlett's test of sphericity (Bartlett, 1954) was significant ($X^2 = 2293.902$, $p = .000$), thus supporting the factorability of the correlations matrix and ruling out that the matrix is an identity matrix (Tabachnick & Fidell, 2014). However, as previously mentioned, the sensitivity which is a result of the large sample size means this test cannot be relied upon to indicate factorability in this study. However, the KMO score and the number of significant inter-item correlations indicate the data are suitable for factor analysis.

Reliability analysis for the scale was satisfactory (Cronbach's α = .897). No item indicated any significant negative effect on the reliability of the scale.

The original study by Lang & Carstensen (2002) identified four components within the data:

Items measuring social acceptance

6 – Have good friends who accept me the way I am

8 – Have close friends who trust me

9 – Be able to confide in a close friend at any time

10 – Receive good advice on important decisions

11 – Not feel lonely

Items measuring autonomy

3 – Determine my own future by myself

5 – Receive approval for my work

1 – Have a strong power of discernment

20 – Be financially independent

18 – Be well educated and knowledgeable

Items measuring generativity

13 – Be available to others who need to be comforted

12 – Leave my mark on this world

14 – To pass my knowledge / experience on to others

15 – Help others find their purpose in life

16 – Have a large experience of life

7 – Be with people who set a high value on my opinion

Items measuring emotion regulation

4 – To be autonomous in my feelings

17 – Know myself and my feelings very well

19 – To have control over my feelings

2 – Not depend on someone else's feelings

The purpose of this study is to determine whether the survey-based instrument developed from Lang & Carstensen's (2002) goal cards exercise provides a valid alternative way of measuring goal orientation. Confirmatory factor analysis (CFA) was carried out, initially using SPSS v. 21, and secondly using structural equation modelling in Amos v. 21.

EFA of the data was carried out, using Direct Oblimin rotation (Jennrich & Sampson, 1966) because it is expected that the factors will be correlated. As can be seen from Table 4.12, there are four components with an eigenvalue >1, and which together explain 58.834% of the total cumulative variance, with component 1 contributing 38.045% of the variance, component 2 contributing 8.897%, component 3, 8.239% and component 4 contributing 5.653%.

Table 4.12: Goal orientation total variance explained for Study 1

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	7.209	36.045	36.045	7.209	36.045	36.045	5.435
2	1.779	8.897	44.942	1.779	8.897	44.942	3.534
3	1.648	8.239	53.181	1.648	8.239	53.181	4.673
4	1.131	5.653	58.834	1.131	5.653	58.834	2.880
5	.951	4.756	63.590				
6	.901	4.504	68.094				
7	.805	4.023	71.117				
8	.754	3.772	75.890				
9	.605	3.024	78.913				
10	.592	2.962	81.875				
11	.590	2.950	84.825				
12	.548	2.739	87.564				
13	.514	2.570	90.134				
14	.400	2.002	92.136				
15	.354	1.768	93.904				
16	.334	1.672	95.577				
17	.260	1.299	96.875				
18	.240	1.199	98.074				
19	.335	1.176	99.250				
20	.150	.750	100.000				

Note	Extraction Method: Principal Component Analysis

Examination of the scree plot (Cattell, 1966) suggests that just three components should be retained. (Fig 4.3), although the fourth component is so close to the line it is impossible to say with certainty which side of the scree line it falls. As Lang & Carstensen's (2002) conceptualisation of goal orientation suggests a four-factor structure, it is sensible to extract four factors to examine the fourth factor in greater detail.

Fig 4.3: Scree plot of data suggesting three factors should be extracted
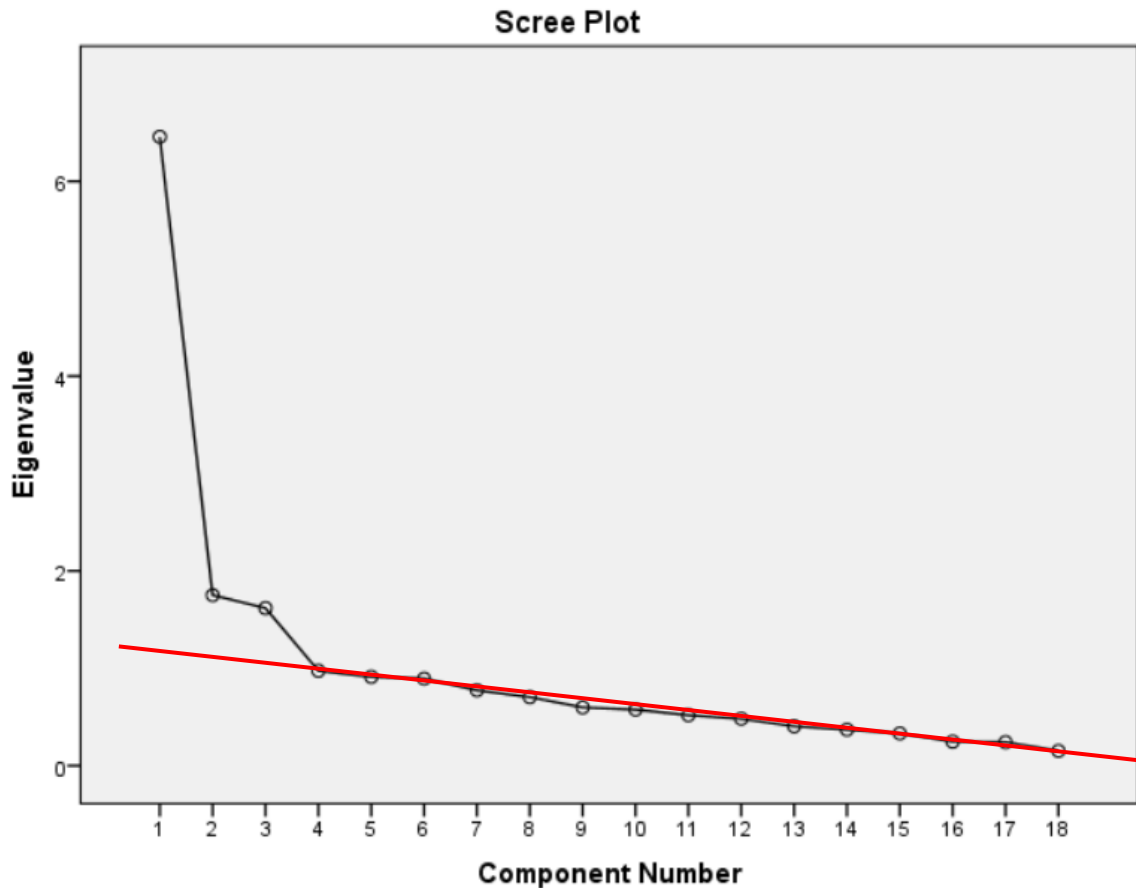
To replicate the factor structure of the Lang & Carstensen (2002) study, four factors were extracted, arranged by the items within their conceptual domain groups. It can clearly be seen from the pattern and structure matrices (Table 4.13) that this four-factor structure found by Lang & Carstensen (2002) is not present in the Study 1 data. The items conceptualised as measuring social acceptance are clearly mapping onto component 1, and those measuring generativity, with the exception of item 7 (*Be with people who set a high value on my opinion*) clearly map onto component 3.

However, the items conceptualised as measuring autonomy show weightings spread across three components although the strongest weightings are for component 2. Items 18 (*Be well educated and knowledgeable*) and 20 (*Be financially independent*) both fail to achieve .3 for any component, which is the minimum level to define a factor (Comrey & Lee, 1992).

Similarly, those items purporting to measure emotion regulation also show strongest weightings for component 2, again with two items (Item 17: *To know myself and my feelings very well* and Item19: *To have control over my feelings*) failing to achieve .3 loading for any component. None of the items principally loaded onto component 4. This is in harmony with the scree plot test (Cattell, 1966) which possibly indicates the presence of just three components, as the fourth is so close to the scree line.

Table 4.13: Pattern and structure matrices for goal orientation measure items in Study 1

Item #	Pattern Coefficients Component				Structure Coefficients Component			
	1	2	3	4	1	2	3	4
Items measuring Social Acceptance								
6	**.853**	.151	-.092	.024	**.852**	.373	.304	-.221
8	**.888**	.064	-.111	-.035	**.870**	.302	.288	-.270
9	**.874**	-.070	-.042	-.089	**.860**	.193	.324	-.312
10	**.615**	-.174	-.175	-.203	**.694**	.095	.428	-.384
11	**.460**	-.152	.071	-.324	**.535**	.063	.293	-.442
Items measuring Autonomy								
3	-.056	**.789**	-.080	-.144	.186	**.776**	.157	-.251
5	**.499**	.146	.175	.233	**.550**	.303	.374	.028
1	.072	**.517**	.294	.263	.275	**.576**	.414	.085
20	.244	.229	.002	-.544	**.466**	.399	.293	-.654
18	-.025	.179	.256	-.591	.301	.350	**.430**	-.673
Items measuring Generativity								
13	.281	.027	**.579**	.003	.531	.277	**.704**	-.211
12	-.064	-.097	**.748**	-.056	.237	.110	**.706**	-.189
14	.153	-.007	**.766**	.056	.456	.250	**.816**	-.158
15	-.059	.063	**.836**	.002	.309	.286	**.828**	-.181
16	-.059	.085	**.578**	-.388	.317	.303	**.664**	-.516
7	**.491**	.104	.264	.074	**.612**	.313	.484	-.142
Items measuring Emotion Regulation								
4	.056	**.826**	-.109	-.074	.276	**.824**	.169	-.212
17	.219	.220	.294	-.330	**.500**	.428	.523	-.497
19	.187	.215	.055	-.669	**.461**	.405	.346	-.772
2	.010	**.670**	.051	-.101	.259	**.705**	.271	-.234

Extraction Method: Principal Component Analysis. Rotation
Method: Oblimin with Kaiser Normalisation. Major loadings for
each item are in **bold.**

To further explore the structure of goal orientation, CFA was carried out in Amos v.21,

applying the conceptual model of the Lang & Carstensen (2002) study to the data collected.

Using the model derived from the Lang & Carstensen (2002) study and the Study 1 data, there is clearly a significant difference between the hypothesised structure and the data as shown by the model fit statistics (X^2 = 637.577, df = 164, X^2/df = 3.88, p = .000, CFI = .795, TLI = .762, RMSEA = .106). Therefore the survey method developed in Study 1 does not measure the constructs in goal orientation as defined by the Lang & Carstensen (2002) model, and cannot be used in Study 2. No further analysis based on these results will be attempted in the current study

In conclusion, the development of a valid measure of goal orientation based on the work of Lang & Carstensen (2002) has not been successful, although two of the four components are well-defined. Additional work is needed to investigate why the remaining items failed to weigh against their expected components. However, this is outside of the scope of this study, and as a result an alternative measure of goal orientation was sourced which measures growth goal motivation (Kooij, de Lange, Jansen & Dikkers, 2013). This offers similarities to the Lang & Carstensen (2002) card sort exercise, but is not directly comparable, which was the objective of Study 1. The main differences between the two measures lie in the factors; the original Lang & Carstensen (2002) scale revealed four factors – social acceptance and autonomy, which were associated with younger people who have a longer time perspective, and generativity and emotion regulation which are normally associated with older people who are more likely to have a limited time perspective. The Kooij et al., (2013) scale also offers four factors which they derived from other previously developed scales (Mor-Barak, 1995; Porter, 1961; Ronen, 1994; Warr, Cook & Wall, 1979). The factors in Kooij et al.'s (2013) scale were growth motivations and security motivations, which they postulate will be associated with open-ended FTP, and esteem motivations and generativity motivations, which they suggest will be

related to limited FTP. As Study 2 focuses on developmental goal orientation, it was therefore possible to use just the three items in the Kooij et al., (2013) scale, which were based on Warr et al.'s (1979) scale, and which focus solely on growth motivations, as providing an appropriate measure of equivalence between the constructs.

The largely inconclusive results of this study might be due to one or more contributory factors; the inflexibility of the method, when compared with the card sort exercise in the original study has already been mentioned, but additionally some of the items were vague and easily confused. For example, according to Lang & Carstensen (2002), one item worded *'to be autonomous in my feelings'* loads onto the emotional regulation factor despite the wording which logically suggest autonomy as it actually contains the word autonomous. Moreover, some of the wording used is quite sophisticated and therefore difficult to understand, and this may have led to less accurate responses. Additional work is therefore necessary to develop a robust, directly-comparable survey-based measure of goal orientation as it is conceptualised within socioemotional selectivity theory.

4.8. Tests of validity

The data collected using the adapted scales was analysed to investigate construct validity. In their original diary study, Carstensen and her colleagues (Carstensen et al., 2000) first calculated a score for each subject to show the total number of times during the data collection period that any negative emotion was experienced, and also another separate score for the frequency any positive emotion had been experienced. They also calculated the mean intensity of the negative emotions reported, and a separate mean score for the intensity of positive emotions.

To replicate the data preparation carried out by Carstensen et al. (2000) in their study of positivity, for each subject in this study a score was calculated for the total number of reports

(frequency) of experiencing any negative emotion (NEGFRSC) and any positive emotion (POSFRSC) over the data collection period, and the mean of the reported intensity of negative (MNNEGINT) emotional experiences and positive (MNPOSINT) experiences were calculated. Thus four additional calculated variables were produced for each subject, and these were used to test the relationships between age, the facets of FTP, and the frequency of negative and positive emotional experiences, and the intensity of both negative and positive emotional experiences. In keeping with Carstensen et al.'s (2000) original conceptualisation of FTP, a single factor, bi-polar model for FTP was used, as presented in Fig 4.4.

The adapted measure for goal orientation was not included in this validation because the earlier investigation had not demonstrated a robust factor structure which was comparable with Lang & Carstensen's (2002) study.

Given that the structure of FTP has been demonstrated both in this study and in previous research (Cate & John, 2007; Kooij et al, 2012) to have two distinct factors, Open-ended FTP (OEFTP), and Limited FTP (LIMFTP), the relationships between these and other variables was calculated separately after and in addition to the single factor calculations (Fig 4.4). This required these aggregated variables to be calculated for each subject, using only items 1, 4 and 5 (Open-ended FTP indicators) and 8 and 10 (Limited FTP Indicators). As these are separate factors of FTP, items 8 and 10 were not reverse-coded as they had previously been when treating all items as contributing to a single bi-polar factor.

Partial Pearson product-moment correlation coefficients for all variables were calculated, whilst controlling for mental health
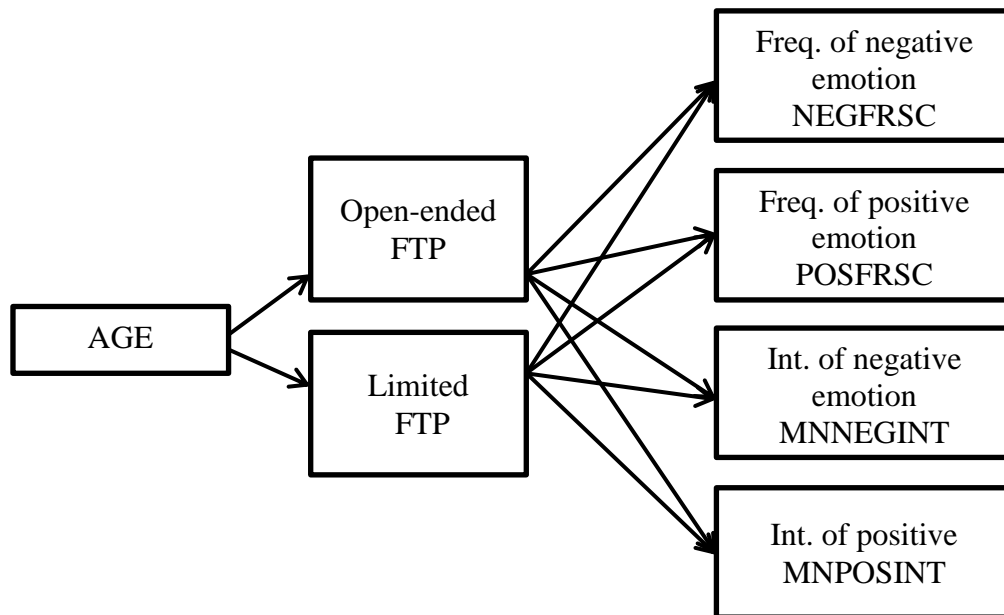
Fig 4.4: revised conceptual model for the validation of adapted measurement items in Study 1 with FTP as a two-factor construct

Results

For the original conceptual model, with FTP as a single bi-polar construct and controlling for mental health, the relationship between age and the mean score for FTP, calculated using all 10 items with items 8 – 10 reverse coded, was investigated using Pearson product-moment correlation coefficient, and revealed a medium, negative ($r = -.388$, $p < .001$) correlation between the two variables. The between-factors correlation between OEFTP and LIMFTP was positive and of medium strength ($r = .303$, $p < .001$). None of the direct relationships between age and the elements of emotional experience were significant

The relationships between combined FTP and the four aspects of emotional experience are all significant and in the direction predicted by socioemotional selectivity theory: the relationship between FTP and both frequency and intensity of negative emotional experience is negative (for frequency and intensity respectively, $r = -.184$, $p < .01$; $r = -.149$, $p < .05$) and

for positive emotional experience is positive (for frequency and intensity respectively, $r=$ .168, $p<.01$; $r=$ .366, $p<.001$). Table 4.14 below shows these results.

Table 4.14: Correlation matrix showing the Pearson product-moment correlation coefficients between age, future time perspective, and frequency and intensity of negative and emotional experiences

	M	*SD*	Age		FTP		Freq. of negative emotions		Freq. of positive emotions		Mean negative intensity	Mean positive intensity
Age	43.908	10.407	1.000									
FTP	4.453	1.24	-.388	***	1.000							
Freq. of neg emotions	7.8	2.66	-.043		-.184	**	1.000					
Freq. of pos emotions	7.662	.930	-.027		.168	**	.138	*	1.000			
Mean neg intensity	2.254	1.100	-.054		-.149	*	.721	***	.000		1.000	
Mean pos intensity	3.865	1.260	-.081		.366	***	-.080		.488	***	-.040	1.000

Note: $N = 301$, * $p<.05$, **$p.01$, *** $p.001$ Control variable: Mental Health

However, when the relationship between age and the two separate factors of FTP is investigated it is apparent that while there is a medium, negative relationship ($r = -.379$, $p<.001$) between age and open-ended FTP (OEFTP), the relationship between age and limited FTP (LIMFTP) is not significant. Moreover, concurrent with the FTP single factor model, the data do not indicate any direct correlations between age and any of the other dependent variables, except for the abovementioned correlation with OEFTP, suggesting that it is the perception of future opportunities which is the important factor in determining emotional experience, rather than the more negative perception of limitation, or indeed age itself per se. The correlations are presented in Table 4.15.

Table 4.15: Correlation matrix showing the Pearson product-moment correlation coefficients between age, open-ended and limited future time perspective, and frequency and intensity of negative and positive emotional experiences.

	M	*SD*	Age		OEFTP		LIMFTP		Freq. of negative emotions		Freq. of positive emotions		Mean negative intensity	Mean positive intensity
Age	44.083	10.508	1											
OEFTP	4.290	1.370	-.379	***	1									
LIMFTP	4.351	1.591	-.085		.303	***	1							
Freq. of negative emotions	7.747	2.689	-.044		-.105		-.179	**	1					
Freq. of positive emotions	7.647	.948	-.020		.175	**	.036		.154	***	1			
Mean negative intensity	2.223	1.106	-.058		-.079		-.195	***	.712	***	.018		1	
Mean positive intensity	3.923	1.280	-.050		.328	***	.142	*	-.036		.481	***	.016	1

Note: *N* = 301, * *p*<.05, ** *p*<.01, *** *p*<.001

There was a positive relationship between OEFTP and both aspects of positive emotional experience; for frequency of positive emotional experience (POSFRSC), this was a small, positive correlation ($r = .175$, $p<.01$), and for intensity of positive emotional experience (MNPOSINT) this was a medium, positive correlation ($r = .328$, $p <.001$). The relationships between OEFTP and both aspects of negative emotional experience, both frequency and intensity, were non- significant.

The relationship between limited FTP (LIMFTP) and the aspects of emotional experience indicate small negative relationships with both elements of negative emotional experience; with frequency of negative emotional experience (NEGFRSC) $r = -.176$, $p<.01$, and with negative emotional intensity (MNNEGINT), $r = -.195$, $p<.001$. There was a small, positive correlation ($r= .142$, $p<.05$) between LIMFTP and intensity of positive emotional experience (MNPOSINT). These relationships are presented diagrammatically in Figures 4.5 and 4.6
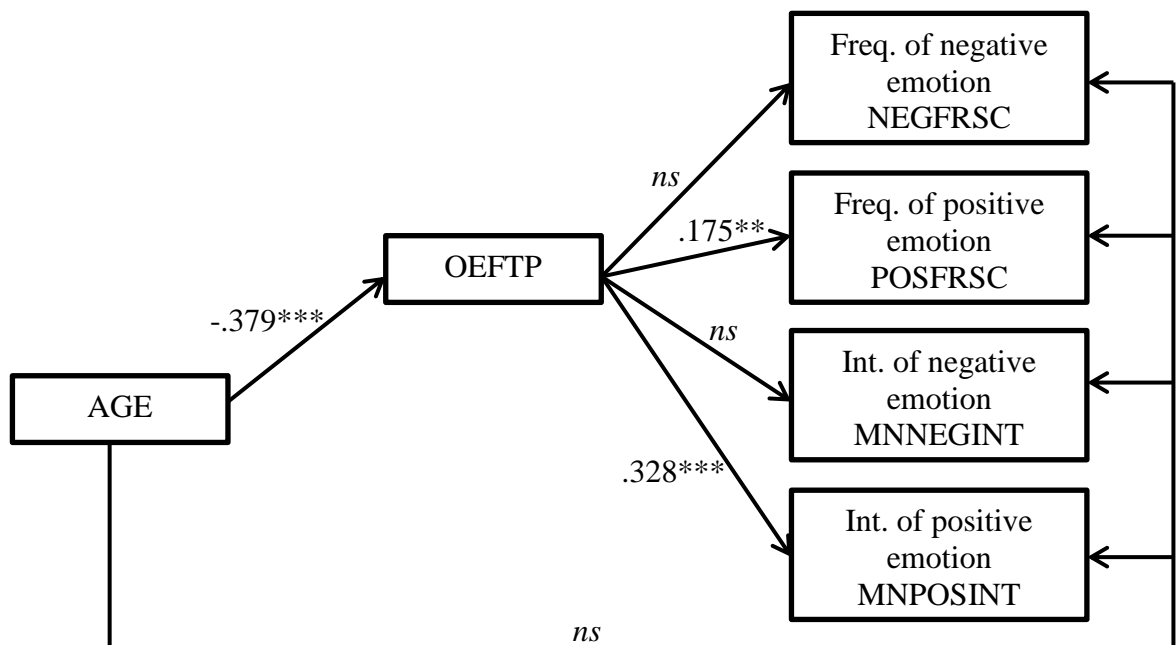
Fig 4.6: Partial correlations between age, open-ended FTP, and positivity elements, whilst controlling for mental health
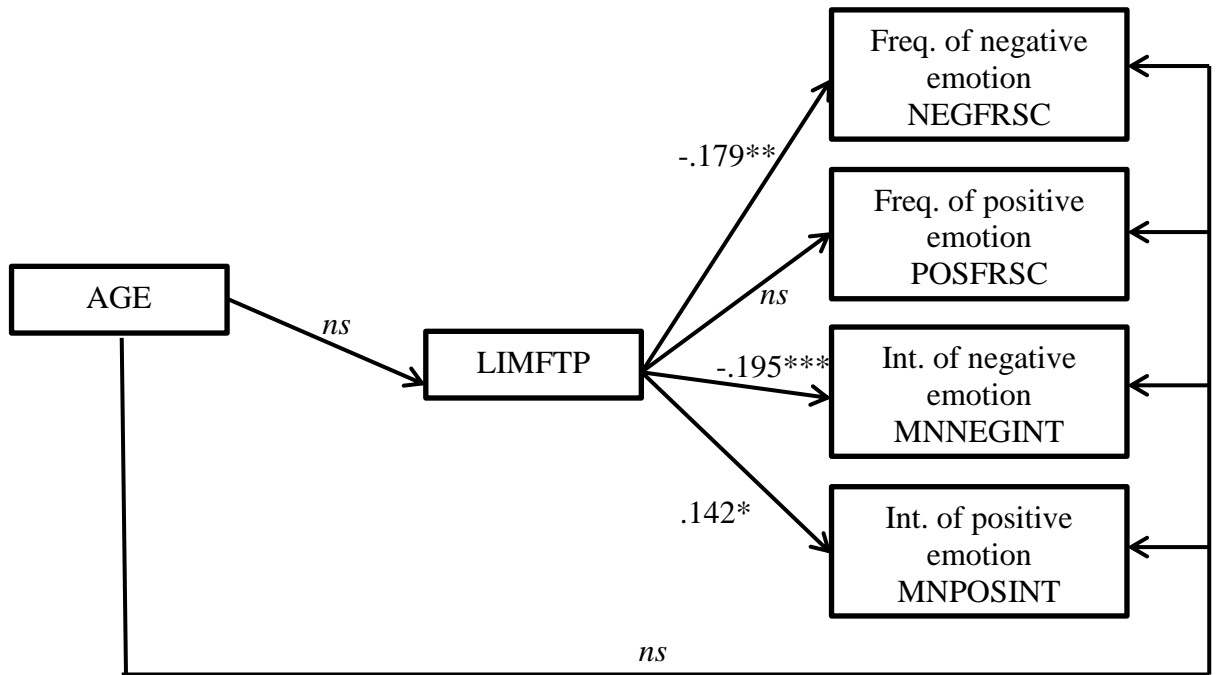
Fig 4.7: Partial correlations between age, limited FTP, and positivity elements, whilst controlling for mental health

The construct validity of the adapted instruments is demonstrated by indicating that values for the latent variables vary as predicted by theoretical models (Tabachnick & Fidell, 2014). To assess the construct validity of the adapted measure of positivity, the correlations and effects were compared with those reported for the hypotheses in the original study (Carstensen et al, 2000) relating to the general effects of socioemotional selectivity theory, and although found to support those findings regarding these, they were different in that no significant direct effect of age on any aspect of positivity could be detected, and the only indirect effect was through open-ended FTP. However, when using a single factor model of FTP, as in Carstensen et al.'s (2000) study, the relationship between age and combined FTP is negative, indicating that as people age, their overall FTP becomes limited, and they become more focused on the reduced and reducing time left to them.

4.9. Discussion

The aims of this study were to fill a methodological gap by adapting the methods previously used to measure positive and negative emotional experience, and goal orientation. The purpose of this was to develop reliable and valid survey instruments which allow measurement of the extent to which individuals are emotionally-orientated and / or developmentally-orientated, and also to identify and measure the positivity effect. A further aim was to explore and confirm the factor structure of future time perspective, as well as its relationship with age.

The initial exploration of the factor structure of future time perspective confirmed the principal relationship as predicted by socioemotional selectivity theory; age is significantly negatively related to future time perspective indicating that as postulated by Carstensen and her colleagues, with increasing age people become gradually more aware of and focused on the reduced (and reducing) time left to them. These findings support the earlier work in this field (e.g. Carstensen 1993, 1995; Lang & Carstensen, 2002). However, this single factor structure to FTP has been questioned, and indeed, the data in this study, in accord with other more recent studies (e.g. Cate & John, 2007; Cozzolino et al., 2009; Kooij et al., 2013), indicate a two factor structure with independent factors of open-ended FTP (OEFTP), which is a focus on future opportunities, and limited FTP (LIMFTP), which focuses on the limitations in the future. Confirmatory factor analysis was unequivocal in demonstrating that a two-factor model was a better fit than a single factor, bi-polar model, and the best fit overall was when the short form of the scale, as developed by Cate & John (2007) and which used just five items from the full scale, was used. As predicted, there was a highly significant, negative relationship between age and OEFTP, but surprisingly the relationship between age and LIMFTP was non-significant, signifying that any age effect is through OEFTP only. In the two-factor structure, the negative relationship between age and OEFTP

is stronger ($r = -.379$, $p < .001$) than the negative relationship between age and FTP when FTP is treated as a single factor construct ($r = -.388$, $p < .001$), which suggests that when FTP is treated as a single bi-polar factor, the non-significant relationship between age and the limited FTP items is reducing the size of the effect, and is therefore masking the independent age patterns of the two discrete FTP factors. When measured as separate constructs, this can be clearly seen. It is possible that the non-significant relationship between age and LIMFTP could be because of the age distribution of the sample; Cate & John (2007), for example, found that negative changes in LIMFTP only started to occur in subjects whose age was greater than 40 but continued into old age, whereas the decline in OEFTP becomes apparent at a much younger age, from about age 20 onwards. As this sample's highest age was 66 years, it may be the case that the age effect on LIMFTP is principally on those who are older than this, thus it was not clearly observed in this study. Moreover, the gender split in the sample is biased 60:40 towards women. Women may decrease more in opportunity focus because of childrearing and other domestic responsibilities acting as constraints on career or developmental aspirations (Cate & John, 2007). This will be observed in the rate of decline in OEFTP relative to age, with a faster and / or earlier decline in relatively younger women than men. A possible area for future investigation would be to repeat the study but with a wider age range, to capture the responses of people in to their 70s or perhaps even older, and which is gender balanced. It should also be acknowledged that because of the survivor effect (Arrighi & Hertz-Picciotto, 1994) the sample may not include a representative number of worker who are more subject to illness and disabilities, as this group may have self-deselected from the workforce, leaving behind a healthier-than-normal cohort of 'survivors'.

The confirmed two-factor structure of FTP is significant in that the two factors can vary independently of each other, so it is feasible for an individual to score high (or low) on both

factors simultaneously, or indeed be high on one and low on the other factor. This is of particular importance during middle age, when someone may be aware of the time passing and that consequently some options are no longer open to them, but nevertheless may still be looking forward to many worthwhile opportunities in their future. This is particularly pertinent given that socioemotional selectivity theory explains the psychological changes present right into very old age, whereas the oldest participant in the sample for this study was 66 years, so the effects which do not become apparent until very old age are unlikely to be observed in this sample. This finding is also important as it highlights the possibility that either of the factors may independently influence attitudes or behaviours, or be influenced by externalities. This should be considered when assessing the effects of FTP and its association with goal orientation, and thus outcome variables such as, for example, job attitudes (Ng & Feldman, 2008, 2010), work continuation intentions (Kooij et al., 2014), and organisational commitment (Armstrong-Stassen & Schlosser, 2007). In conclusion, therefore, when the two factors of FTP are combined, the relationship between age and FTP is negative; as people age, their FTP becomes more limited and they are more focused on the reduced and diminishing time left to them. This is concurrent with the general principles outlined by Lewin (1939) and is the central tenet to Carstensen and her various colleagues' work. When FTP is treated as two separate factors, (OEFTP and LIMFTP) however, age is more strongly negatively correlated to OEFTP than when FTP is treated as a single factor, but the relationship between age and LIMFTP is non-significant. Therefore, as only OEFTP has a significant relationship with age, any effect of FTP must be a result of the influence of age on this factor only.

In exploratory factor analysis of the adapted survey-based positivity scale items a four factor structure for the positivity scale emerged. Confirmatory factor analysis confirmed a four-factor structure, but indicated the negative emotions load onto three factors rather than just

one as in Carstensen et al.'s (2000) work, representing sub-factors of the main structure. However, this does not detract from the underlying positive and negative structure, and there was a clear and unequivocal loading of all positive items onto one single factor, and all negative items onto factors 2, 3 and 4. The three negative sub-factors provide an opportunity for further research to identify these, and to explore their relationship with other variables. However, on the basis of the findings of Study 1 the adapted measure appears to be a reliable ($\alpha = .762$) and valid adaptation of Carstensen et al.'s (2000) method, thereby providing a usable survey instrument to empirically measure the frequency and intensity of positive and negative emotional experience, the positivity effect, in any future survey-based research including Study 2 of this thesis.`

The adaptation of the Lang & Carstensen (2002) card-sort exercise to measure goal orientation was not successful; initial investigation using a scree plot suggested three factors, but as the original hypothesised model contained four factors, this number was used for CFA. Confirmatory factor analysis showed that two of the four factors extracted (social acceptance and generativity) were well defined. Only two of the five items measuring autonomy, and two of the items measuring emotion regulation loaded onto any factor at > .3, indicating unsatisfactory definition of the factors (Comrey & Lee, 1992). The items which did load at >.3 did not do so in any coherent way. No items loaded onto the fourth factor at > .3, indicating that the scree plot's suggestion that just three factors exist within the data was correct. This was confirmed by CFA, which indicated the structure in the data was significantly different to the hypothesised model. These findings were disappointing, but could be attributed to the fact that the survey method does not easily allow for relative reprioritisation of the items, if the respondent wished to appraise one goal as being between two others in terms of valence unless they had left space between them; it is very unlikely that somebody will go back to the beginning of the survey to reassign every goal to make

room for one which 'fits' between them. Moreover, some of the items were unclear in their meaning, or used quite complex or advanced vocabulary, and it is possible these have been misinterpreted. This does leave open the opportunity in the future to develop and test this measure further, with the objective of better defining all four of the factors. However, on the basis of the results of Study 1, the adapted survey-based measure of goal orientation will not be used in Study 2.

To support the claim for the validity of the scales developed in Study 1, the relationships between age and FTP both as a single- and as a two-factor model, and the measures of positive and negative emotional experience were explored. According to the positivity effect of socioemotional selectivity theory, the relationship between age and negative emotional experience should be positive, with older people who typically have reduced FTP experiencing fewer and less intense negative emotions, and those who are younger (and with more expansive FTP) experiencing more negativity (e.g. Charles et al., 2003; Pruzan & Isaacowitz, 2006; van Reekum, Schaefer, Lapate, Norris, Greischar & Davidson, 2011). The Study 1 data generally support this pattern for combined FTP, and also when FTP is analysed as two separate factors; older people tend to have lower perceptions of OEFTP, and have more frequent and more intense positive emotional experiences. Moreover, in harmony with the expectations of SST, those with higher self-reported limited FTP (LIMFTP) also tended to report less frequent, and less intense, negative emotional experiences. However, in this study LIMFTP was not significantly related to age although according to SST it is theoretically positively associated with higher age (e.g. Carstensen, 1991; Mather & Carstensen, 2005) through the prioritisation of positive stimuli over negative and the more effective cognitive processing of, and memory relating to, positive emotional inputs. More intensely positive experiences are also associated with higher LIMFTP. These relationships, according to SST are the result of age-related changes in time perspective, and this informed

the theoretical model for Study 1. Another school of thought which has emerged more recently is that the positivity effect is a direct result of increasing age, rather than as a consequence of change in time perspective (e.g. Bohn, Kwong, See & Fung, 2016; Kan, Garrison, Drummey, Emmert Jr. & Rogers, 2018), and this is an area for further investigation, especially given that in this study no significant direct relationships between age and any feature of positive or negative experience were found.

Limitations and avenues for future research

Of course, this study has limitations; firstly, the sample was drawn from just one organisation which reduces its external validity (Shrout & Bolger, 2002). Future research in other organisations to replicate the findings is therefore recommended. Secondly, the sample characteristics may have influenced the outcomes of the analysis (Podsakoff et al., 2003); as can be seen from the descriptive distribution statistics, the sample was not gender balanced, and because the data was collected in a Head Office setting, this may have resulted in an older and better educated profile, as older people with higher qualifications are more likely to occupy the sort of job roles found in this setting. To overcome this, additional confirmatory research across a wider cross-section of the general population is desirable. Moreover, the oldest in the age range in the sample was 66 years, so any effects specific to the very old will not have been found, or were detected but were small. Thirdly, participants were aware from the pre-participation information that the focus of the study was age, and therefore it is possible that an element of response-priming (Posner & Snyder, 1975) may have biased the responses to the FTP, positivity, and goal orientation questions, and also to the questions asking about general, physical, and mental health; people may have become defensive and denied their real situation and attitudes. It is difficult to overcome this whilst observing the necessary ethical guidelines, but in future research I will provide a list of all the demographic characteristics of interest, including age, but will not specifically draw attention to it as the primary area of focus. This remains within the ethical guidelines of the

American Psychological Association (2010). Finally, the unsuccessful attempted adaptation of the Lang & Carstensen (2002) card-sorting exercise to develop a robust and reliable survey-based alternative measure provides a rich opportunity for future work; there is still no reliable and valid, directly-comparable measure of this construct and this is an area which could be usefully explored.

Theoretical implications

The key theoretical implication of this study lies in the confirmation of the relationships between age, the two factors of FTP, and the elements of positive and negative emotional experience. This study adds to the evidence that time perspective is not a bi-polar continuum, with younger people's results found at one end and older people at the other, but rather that aging is more complex and involves foci on both opportunities and on emotional meaningfulness, which can and do vary independently of each other especially during middle age.

Methodological implications

The key methodological contribution of this work lies in the development of a robust, reliable and valid survey-based scale to measure positivity. It extends the work of Carstensen et al. (2000) and operationalises the construct of positivity in such a way as its measurement is now quickly and cost-effectively available for survey-based research.

4.10. Conclusion

In this chapter, the factor structure of future time perspective was explored using the Study 1 data, and in harmony with previous research (Cate & John, 2007; Kooij et al, 2013) was found to have a two-factor structure, with one component focused on perceived opportunities still available in the future (OEFTP), and the second factor focused on the reducing useful time left (LIMFTP).

The development of a survey-based measure of positivity, based on the previous work of Carstensen et al (2000) was successful; using the items from Carstensen and her colleagues work, a robust positive and negative two-factor structure was developed in the data, indicating that the items may be used in an organisational survey to measure emotional experience. Moreover, the data collected using this measure displays the expected theoretically-defined associations with and between other variables thus supporting its construct validity. However it is clear that the association between a two-factor structure of FTP and age is less well defined, with each factor behaving differently and there being no direct association between limited FTP and age, rather any age-related effects observed must be through the association between age and open-ended FTP.

Conversely, the development of a survey-based measure of goal orientation, in line with the work of Lang & Carstensen (2002) was not successful, with only limited comparability between the factor structure in the Study 1 data and that in their original study. Additional work is needed if this is to be developed, particularly around the wording of the items which load onto autonomy and emotion regulation. This should follow the recommended method (Hinkin, 1998), and start from item generation, as it is possible the items used by Lang & Carstensen (2002) were contributing factors in why the survey-based instrument did not achieve the hoped-for robustness.

CHAPTER 5: STUDY 2 RESULTS AND HYPOTHESIS TESTING

5.1. Chapter introduction

This chapter focuses on the results of Study 2, to test the principal hypotheses of the thesis. A brief review of the theoretical foundation for the hypotheses is provided, and a detailed methodology including the adaptation of Delmotte, de Winne & Sels' (2012) scale to measure perceived HRM system strength to suit the needs of this audience.

The data preparation process is then explained, followed by the results of the statistical analyses; descriptive statistics, confirmatory factor analyses (CFA), correlations and the mediation and moderation effects are reported.

5.2. Hypotheses

The hypotheses for Study 2 are as follows. They are arranged to follow the conceptual model for the study. The first ones relate to the known relationships between age, the factors of future time perspective, positivity, and developmental goal orientation, and also the relationships between age and, respectively, employee in-role performance behaviours, employee satisfaction with learning opportunities, and employee mental well-being. Following those are hypotheses relating to the mediation effects between the variables. Finally, the moderating effect of perceived HRM system strength is hypothesised.

The Study 1 results for the correlations between the two factors of FTP and the elements of emotional experience were not in accordance with the patterns suggested by socioemotional selectivity theory, although the anomalies could be explained by the characteristics of the sample (Podsakoff et al., 2003). To remove any possibility of this confounding the results of Study 2, and in accordance with, for example, Bohn et al., (2016) and Kan, et al., (2018) who argue that positivity is directly related to age rather than being mediated by FTP, in the

conceptual model for Study 2 (Fig 5.1), frequency of positive emotional experience has been hypothesised as being directly predicted by age, rather than through FTP. The conceptual diagram for Study 2 is presented in Fig. 5.1

Socioemotional selectivity theory

H1a: Employee age (AGE) is negatively related to an open-ended future time perspective (OEFTP).

H1b: Employee age (AGE) is positively related to a limited future time perspective (LIMFTP).

H1c: Employee age (AGE) is positively related to employee positive emotional experience (POS).

H1d: Employee age (AGE) is negatively related to employee developmental goal orientation (DEV GOAL).

H1e: Employee age (AGE)is positively related to employee in-role performance behaviours (IRB).

H1f: Employee age (AGE) is negatively related to employee satisfaction with learning opportunities (LJS).

H1g: Employee age (AGE) is positively related to employee mental well-being (WB).

Mediation

H2a: Employee open-ended future time perspective (OEFTP) is positively related to employee developmental goal orientation (DEV GOAL), and mediates the negative relationship between employee age (AGE) and developmental goal orientation (DEV GOAL).

H2b: Employee limited future time perspective (LIMFTP) is negatively related to employee developmental goal orientation (DEV GOAL), and mediates the negative relationship between age (AGE) and developmental goal orientation (DEV GOAL).

H2c: Employee positive emotional experience (POS) is negatively related to developmental goal orientation (DEV GOAL), and mediates the negative relationship between employee age (AGE) and developmental goal orientation (DEV GOAL).

H3a: Employee developmental goal orientation (DEV GOAL)is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee in-role performance behaviours (IRB);

H3b: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the negative relationship between limited future time perspective (LIMFTP) and employee in-role performance behaviours (IRB).

H3c: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee positive emotional experience (POS) and employee in-role performance behaviours (IRB).

H4a: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee satisfaction with learning opportunities (LJS).

H4b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative

relationship between employee limited future time perspective (LIMFTP)and employee satisfaction with learning opportunities offered (LJS).

H4c: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative relationship between employee positive emotional experience (POS) and employee satisfaction with learning opportunities (LJS).

H5a: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee mental well-being (WB).

H5b: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee mental well-being (WB).

H5c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee positive emotional experience (POS) and employee mental well-being (WB).

Moderation

H6a: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee in-role performance behaviours (IRB), and this is stronger when employee perceptions of HRM system strength (PHRSS) are high;

H6b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee satisfaction with learning opportunities (LJS), and this is stronger when employee perceptions of HRM system strength (PHRSS) are high;

H6c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the positive relationship between employee open-ended future time perspective (OEFTP) and employee mental well-being (WB), and this is stronger when employee perceptions of HRM system strength (PHRSS) are high.

H7a: Employee developmental goal orientation (DEV GOAL) is positively related to employee in-role performance behaviours (IRB), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee in-role performance behaviours (IRB) and this is weaker when employee perceptions of HRM system strength (PHRSS) are high;

H7b: Employee developmental goal orientation (DEV GOAL) is positively related to employee satisfaction with learning opportunities (LJS), and mediates the negative relationship between employee limited future time perspective (LIMFTP) and employee satisfaction with learning opportunities LJS), and this is weaker when employee perceptions of HRM system strength (PHRSS) are high;

H7c: Employee developmental goal orientation (DEV GOAL) is positively related to employee mental well-being (WB), and mediates the negative relationship between employee limited future time perspective (LIMFTP|) and employee mental well-being (WB), and this relationship is weaker when employee perceptions of HRM system strength (PHRSS) are high.

Fig 5.1: Conceptual Diagram for Study 2

Key:
AGE = Chronological age, in years
OEFTP = Open-ended future time perspective
LIMFTP = Limited future time perspective
POS = Positive emotional experience
DEV GOAL = Developmental goal orientation
IRB = In-role performance behaviours
LJS = Satisfaction with learning opportunities
WB = Mental well-being
PHRSS = Perceptions of HR system strength
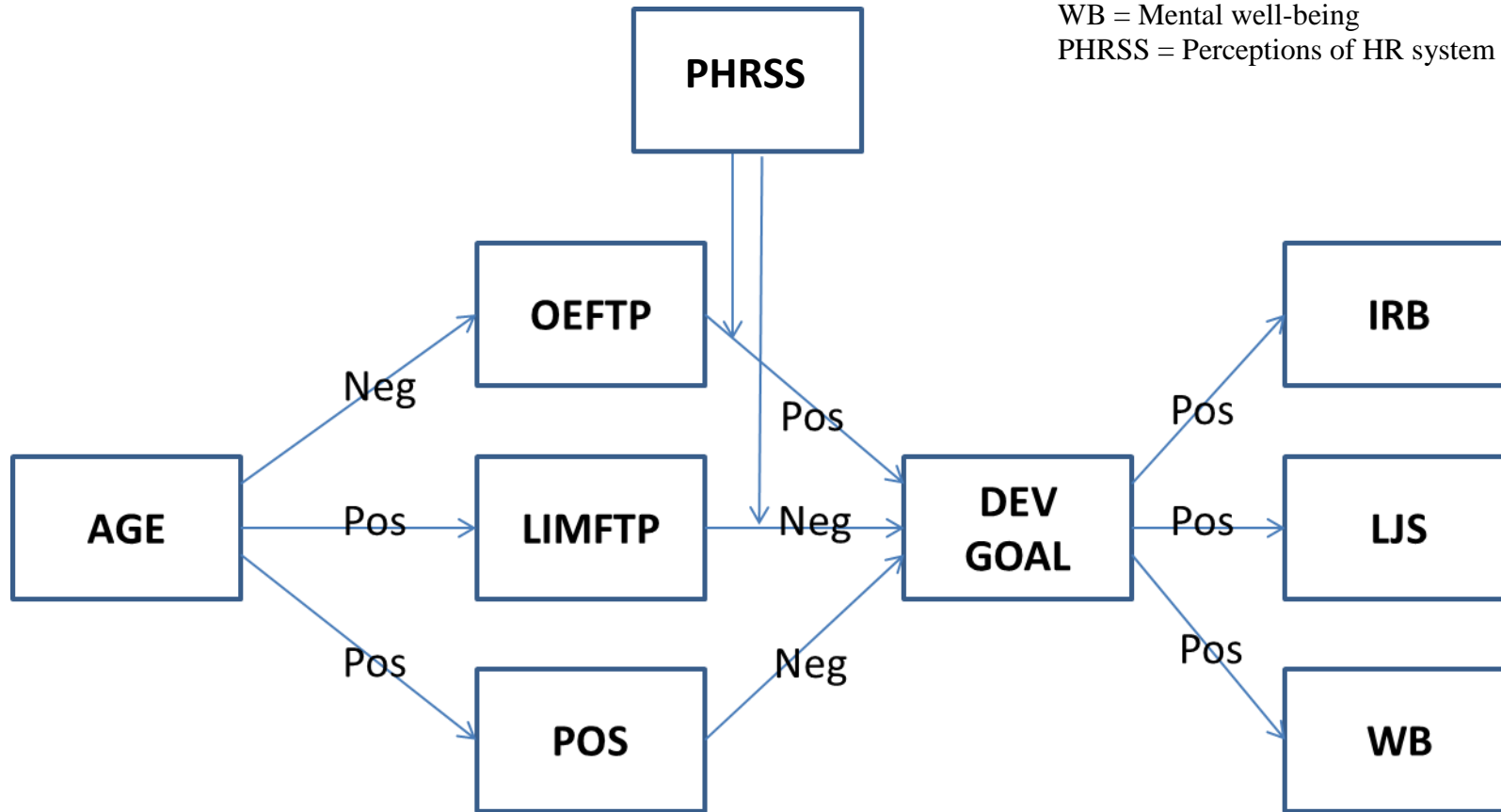
5.3. Method

The case organisation

The case organisation for this study was a multi-outlet warehousing and distribution company with ten sites across the UK. Their core business operations involve receiving, unloading, and storing stock, which is the property of their clients, and then picking, packing and despatching the goods via carriers in response to online sales. The service level agreements they have with clients set out the time limits for goods to be received by customers, so it is critical that the organisation is responsive and agile, and as the number of orders received on any day determines the number of employees required to fulfil them the following day, staffing numbers can fluctuate by quite a large margin. The type of things which cause order levels to fluctuate are the weather (typically, fewer orders are received during good weather), sporting or other popular events on TV (customers are not shopping on line so fewer orders are received), and client advertising campaigns which increase order quantities, to mention just some of the possibilities. Of course, huge seasonal fluctuations to cope with the Christmas peak, and during the new year, summer and other sales promotions present major resourcing challenges.

Their total permanent labour force is currently around 1000, although it was approximately 750 at the time of the study. This is boosted by agency warehouse staff, who add up to 200% to that number of permanent heads during peak times such as during the run up to Christmas and when the online retailers served by the organisation hold promotions and sales, adding an additional 1500 temporary staff who must be trained and managed by the permanent supervisory teams. This total takes into account that many of the temporary staff do not remain with the organisation for the entire period of increased demand, adding to the burden of training and managing these people in constantly changing work groups and teams. In

total, they have over 1.5 million square feet of warehousing space across the ten sites (there were 11 sites at the time of starting this study; one closed soon after access was negotiated). Approximately 75% (562) of the total 750 employees were permanent warehouse colleagues, with the remaining 25% (188) being managerial and occupying administrative / support roles. Of the 10 sites, five opted to take part in the survey.

Each site has their own dedicated client base, holding stock for those organisations only, and with idiosyncratic service level agreements. The volatile demand from the organisation's clients' online sales means that fluctuations in operational headcount are frequent – often daily and sometimes even between morning and afternoon shifts on the same day. Most of the temporary employees are employed via agencies, on zero hours contracts and therefore have little loyalty to either the agency who employ them, or the case organisation (Ball, Hampton, Kamerade & Richardson, 2017) and will leave if more secure or permanent work is offered elsewhere. Therefore, staff turnover is high, and there is constant change in team make-up and dynamics with which the permanent colleagues and team leaders have to deal in order to deliver their contractual obligations to their clients. This results in a huge amount of change being experienced regularly, several times a year. This constant change is an important factor in the choice or organisation; the frequent changes to team structure and personnel mean that there is also a constant need for Team Leaders and members to adjust to the levels of skills and personalities of new staff, and learn how best to manage the work of this changing workforce.

The organisation actively encourages permanent team members to undertake learning and development, and provides support for numeracy and literacy qualifications for those who have not achieved level 2 in these key skills. Additionally, teams are encouraged to work toward vocational qualifications in quality management and process improvement.

Moreover, there is a well-managed inclusive career progression process which encourages every permanent employee to consider how they might develop within the organisation, and which offers opportunities to try out more advanced roles through secondments and temporary placements; overall, the culture in the organisation is one of performance improvement and employee commitment enhancement, achieved through encouraging learning, and professional and personal development (Ababneh, 2013).

Negotiations to work with the organisation began in late 2015, and access was agreed in March 2016. Initial contact with the organisation was via the Human Resources Business Partner, a personal acquaintance of mine. Research authority was granted by their Director of People. Over the following six months, data was collected at each of five of the ten operating sites. An eleventh site closed soon after access to the organisation was negotiated. This closure is a normal part of the client lifecycle; client contracts are negotiated as fixed-term agreements. If at the end of the fixed term the client decides not to renew for a further period, and that site is subsequently unable to secure a replacement client, the site closes. This happened at one of the original eleven sites, leaving ten potential data collection locations.

Sites vary in the number of employees based at that location. The largest employs over 280, and the smallest around 40 (all types and grades).

Sample and site access negotiation

The Site Operations Manager at each of the ten remaining possible sites were contacted via email by the HR Business Partner to introduce the study and myself. I then followed that up with an introductory email and phone call; the purpose of the research was briefly explained, and a meeting request made to explain the study and the potential benefits to the organisation in greater detail to the site management team, whose support and cooperation was crucial in

encouraging responses. Site Managers were under no obligation to involve their location and staff, and this was made clear to them from the outset. As such, site managers became gatekeepers for access to those employees working at their site.

Five of the ten Site Operations Managers decided to engage with the study after these meetings, three did not respond to the initial email and follow-up, and two felt that at the time of asking they were unable, for operational reasons, to participate.

After agreeing access, a series of visits were made to each participating site, to attend the regular, monthly all-staff briefings for each shift (including night shifts if these were operating) when time was allotted to enable staff to listen to a short presentation given by me outlining the purpose of the study, explaining what would be involved and covering the arrangements in place to protect their identity, their right to withdraw and the voluntary nature of participation. This was particularly useful as it served to clearly show to employees that the purpose of the study was purely academic, and although access had generously been granted by the organisation, it was neither sponsoring the research nor would have access to any data which could identify any respondent. It also gave all employees the chance to ask questions, and to understand how the data they gave would be made anonymous, and the use to which it would be put.

Following the attendance at the all-staff briefing, a series of visits was made to each site in turn when employees were invited to complete the questionnaire. They had the option of completing the questionnaire at that time, or if preferred questionnaires could be taken home, completed, and returned to a sealed collection post box, to which only I had access and personally emptied on a regular basis. All permanently employed warehouse colleagues formed the colleague sampling frame, and were invited to take part, but were put under no

pressure to do so. Managerial, supervisory and other roles were excluded from the colleague

sampling frame because their involvement in the delivery of HR policy and practice via

devolved HRM means their views are likely to be biased. Agency staff were also excluded

as their performance management and many HRM practices are undertaken by their agency

employer, rather than the case organisation's Line Managers. Within the colleague sampling

frame a large level of diversity in terms of age, tenure and educational attainment were

observed as this is the sort of work which might be carried out as a career by some, and as a

temporary means of survival by others while they look for work more suited to their

qualifications.

The supervisor sampling frame for each site included all permanently-employed staff that

had direct operational and devolved HRM responsibility for a team or teams of warehouse

colleagues.

Data Collection Process and Method

Warehouse employees (colleagues) were asked to complete the paper-based survey, and

supervisors asked to provide an independent performance rating for their colleague direct

reports, again in a paper-based format. For details of the measures used in each

questionnaire, see section 5.4. It was not possible to use an electronic means of delivering

the survey as colleagues do not have company email addresses, and it would be extremely

difficult to locate and match data from colleagues with that from their supervisors.

To facilitate the linking of the warehouse colleague's and their supervisor's questionnaires,

each site provided a list of colleagues and supervisors prior to data collection. Each person

on the list was assigned a random, unique 'survey' number. All staff had access to these lists,

and colleagues and supervisors were asked to record their own survey number, and that of

their supervisor or direct report when they completed the questionnaires. Thus, records were linked for analysis purposes.

To protect and maintain anonymity and confidentiality, colleagues were unaware if their own supervisor had participated, and similarly supervisors did not know which of their direct reports had participated; supervisors were asked to complete questionnaires relating to all their direct reports. Although this represents a degree of wasted time and effort as not all completed questionnaires could be used because they could not be linked to the hierarchical questionnaire, it was felt this was ethically preferable to revealing which people had contributed to the study and which had declined because this knowledge could have affected perceptions of commitment in employees. In the final analysis, there were 151 completed colleague questionnaires with linked supervisor's assessment of in-role performance behaviours, such as core task performance, organisational citizenship behaviours directed at both the organisation and colleagues, attendance, and willingness to communicate. There were a further 57 'orphaned' colleague questionnaires, for which no supervisor performance data was available, and 238 'childless' supervisor ratings of subordinate performance for which there was no corresponding warehouse colleague questionnaire. This represented an overall response rate of 37% for warehouse colleagues, and 69% for supervisors' responses.

My personal attendance on sites, and engagement with the workforce was useful in encouraging participation, and therefore in overcoming the common problems of poor response rate. Baruch (1999) suggested there is a wide range of response rates in social science research; the presence of the researcher on site, on several occasions (including night shifts), served to remind employees and encouraged participation, certainly helping to boost responses. This was in keeping with Brennan and Charbonneau's (2009) findings, and was within my acceptable time and cost-benefit limits. The repeated attendance on site also

increased the likelihood of meeting and speaking with the maximum number of employees to encourage participation, given shift patterns, leave and other absences, and thus increased the chance that the resultant sample would be representative of all employees.

Another method of encouraging participation was the offering of a prize draw for participants, with prizes of £50, £30, and £20 for the first three survey numbers drawn at random from those returned. Winners were identified by their survey number which was the same number that had been randomly assigned for the purpose of linking colleague questionnaires with the response from their supervisor. Records of which survey number belonged to whom were permanently destroyed after the questionnaire data had been linked and the draw had been made, and no record of the survey number assigned to each subject was made in the final data file. Employees were also offered small items of confectionery to enjoy while filling in the questionnaire as a 'thank you' for their time.

All warehouse colleagues and supervisors were invited to participate, although of course, not all did so. The resultant sample therefore represents a non-probability stratified convenience sample as it is a 'slice' through the organisation (Reeves & Harper, 1981). Such samples are more common than probability samples in organisation studies (Bryman, 1989) for reasons of cost and time availability, and are also commonly found in social research (Bryman, 2012). While they carry potential problems with generalisation of findings as researchers are unable to say for certain that the sample is representative of the population, they are often the only way to proceed, even with their limitations and they do often provide a basis for future research avenues to be identified, or for links to be made with other studies in the area (Bryman, 2012).

5.4. Measurement instruments

Colleague Questionnaire

Independent Variables

Age: Participants' chronological age was recorded in years; this is the most common format, and is objective, simple to record and understand, and universally recognised. As for study 1, age was defined and analysed as a continuous variable, rather than splitting the sample into two (younger and older) sub-sets because the 'older' subset, defined as those aged 50 and over contains only 39 subjects, which is too few to develop an acceptable level of statistical power.

Dependent Variables

Mental and Physical Health and Well-being: The QualityMetric® SF-12v2 Health Survey was used to measure general physical and mental health in Study 2. This is the same measure as used in Study 1.

Future time perspective (FTP): FTP was measured using the Cate & John (2007) 5-item scale to measure FTP, as also used by Kooij et al. (2013). This is a two-factor model based on the 10-item FTP Scale (Carstensen & Lang, 1996), and measures open-ended future time perspective (OEFTP) using three items, and limited future time perspective (LIMFTP) using two items. This is a 7-point scale where 1 = *Very True* and 7 = *Very Untrue* (Cronbach's α = 0.745). Illustrative items are, 'Most of my life lies ahead of me' (OEFTP) and 'I have the sense that time is running out' (LIMFTP). The item details may be found in Appendix A.

Positivity / Negativity: Positivity and its converse, negativity were measured using the survey instrument developed in Study 1. This is an adaptation of the diary study previously used by Carstensen, Pasupathi, Mayr & Nesselroade (2000). Full details of the development of this instrument are included in Chapter 4: Study 1 – instrument development.

Developmental goal orientation: Developmental goal motivation was measured using three items from the Kooij, de Lange, Jansen & Dikkers (2013) instrument. The three items, '*Being able to fully use my skills and abilities*', '*challenging work*', and '*the opportunity for personal growth and development*' were considered by respondents according to how important they were to them at that point in time. Response options were based on a 7-point scale, and ranged from 1 = *totally not important* to 7 = *very important.* For these items, Cronbach's α = 0.776.

Employee in-role performance behaviours: Employee perception of their own in-role performance behaviour was measured using seven items from the Williams & Anderson's (1991) scale. This was gathered to allow (if necessary) a comparison with the data gathered from Supervisors on the Supervisors' questionnaire, which asks them to comment on the in-role behaviours (IRB) of their direct reports (see Appendix A for details of items). Responses were based on a 5-point scale, where 1 = *Strongly Disagree* and 5 = *Strongly Agree.* (Cronbach's α = 0.894)

Employee satisfaction with training opportunities: This utilised four items from the Schmidt (2004) job training and job satisfaction survey. The items used were those which measured participants' satisfaction with the training they have received. Scores were recorded on a 6-point scale where 1 = *Disagree very much* and 6 = *Agree very much.* The statements offered were '*Overall, the on-the-job training I receive is applicable to my job*', '*Overall, the training I receive on the job meets my needs*', '*Overall, I am satisfied with the amount of training I receive on the job*', and '*I am generally able to use what I learn in on-the-job training in my job*'. (Cronbach's α = 0.820).

Perception of human resource management system strength: Employee perceptions of HRM system strength (PHRSS) was measured using an adapted version of the Delmotte, De Winne & Sels (2012) scale instrument. This uses a 5-point scale, where 1 = *Entirely Disagree* and 5 = *Entirely Agree.* The 33 items cover the three factors of perceived HRMSS

as defined by Bowen & Ostroff (2004): distinctiveness, consistency and consensus. Details of the items can be found in Appendix A (Cronbach's α = 0.883), and the adaptation method is detailed in section 5.5.

Control Variables

Perception of Change: Six items from Caldwell, Herold & Fedor (2004) were used to measure perceptions of the effect of change on individual job impact and two items from the same scale were used to measure perceptions of change on values congruence (person-organisation) fit. One additional item was added to this, to assess perception of change to the working environment (Cronbach's α = 0.75 in the original study, in this study Cronbach's α = 0.833). Details of the items may be found in Appendix A. Rating for items were on a 5-point scale, where 1 = *Strongly Disagree* and 5 = *Strongly Agree.*

Supervisors' Questionnaire

Employee in-role behaviours from the supervisor's perspective were measured using the same Williams & Anderson's (1991) scale, which asks Supervisors to comment on the in-role behaviours (IRB) of their direct reports (see Appendix A for details of items). Responses were based on a 5-point scale, where 1 = *Strongly Disagree* and 5 = *Strongly Agree.* (Cronbach's α = 0.894)

Other demographic variables

Additional demographic variables were also collected. These were not used in the analysis, but were important to assess the profile characteristics of the sample. The variables collected were:

Gender: Participant gender was recorded as either male or female.

Educational attainment: Participants were asked to indicate their highest academic or professional qualification. Options were from 'No qualifications' to 'Level 8 – doctoral

degree'. The levels offered matched the Qualifications and Credit Framework (QCF: Ofqual, 2018) to help people identify their own level if required.

Job Role: Participants confirmed their job role was that of colleague or supervisor, as appropriate. This was purely to ensure that the questionnaire had been completed by the correct grade of employee, and was not included in the analysis if incorrectly submitted.

5.5. Adaptation of Delmotte, DeWinne & Sels' (2012) measure of perceived human resource management system strength (HRMSS)

Delmotte et al. (2012) developed a measure for Bowen & Ostroff's (2004) construct of perceived HRM System Strength (HRMSS). Bowen & Ostroff (2004) argued that although the contribution of HR has long been recognised as an important factor in firm performance, exactly how this happens is poorly understood, with a content-based focus of research into HR practices predominating. By HR content, Bowen & Ostroff (2004, p. 204) meant 'the specific set of HR practices necessary for achieving an organisational goal'. In other words, 'good' HRM is traditionally defined by the presence of a set of well-developed HR practices (Delmotte et al., 2012). Bowen & Ostroff (2004) argued that not just the HR practices, but also the processes by which the policy and practice are delivered to employees are critical. Delmotte et al. (2012) define HR Processes as 'the set of activities aimed at developing, communicating, and implementing HR practices' (p. 1481), which fits with Bowen & Ostroff's (2004) assertion that HR processes are the means by which signals are received by employees to facilitate their understanding of appropriate and organisationally-desired responses, and helps them to develop a collective sense of the firm's expectations relative to its strategy. They argue that if HR processes succeed in this objective then a *strong* HRM System is the result, which supports and enables relationships between the HR practices and employees' attitudes and performance, and thus affect overall organisational performance.

Clearly, in a devolved HRM model where the line managers are responsible for the day-to-day delivery of HRM policy and practice, it is the perception of the effectiveness of these processes as delivered by these line managers, and how well-suited the outcomes are to the needs of the individuals which will determine this.

Delmotte et al. (2012) started with this premise, to develop and validate an instrument to measure perceived HRM strength. Bowen & Ostroff (2004) defined three domains within the construct of HRM System Strength: *distinctiveness* (which includes meta-features of visibility, understandability, legitimacy of authority, and relevance), *Consistency* (which includes meta-features of instrumentality, validity, and consistent HRM messages), and *Consensus* (including agreement among HR decision-makers, and fairness) (Table 5.1)

HR System Feature	HR System meta-feature	Characteristics
Distinctiveness (DIST): 'features that allow it to stand out, capture attention and arouse interest' (p. 208)	**Visibility (Vis)**	**Employee awareness of policies and practice, and judgement of their salience**
	Understandability*	**Employees understand HR practices, which they regard as unambiguous**
	Legitimacy of Authority (Leg)	**Whether the HR system itself and its agents / enactors are considered legitimate power holders**
	Relevance (Rel)	**The extent employees perceive the HR system and practice supports organisational and personal goals**
Consistency (CONSIS): 'establishing an effect over time and modalities whereby the effect occurs each time the entity is present' (p. 210)	**Instrumentality (Ins)**	**Employees perceptions that the HRM system establishes a clear link between employee behaviours and the associated employee consequences**
	Validity (Val)	**Employee perceptions that HRM practices display consistency between what they say they will do, and what they actually achieve; do they do what they say 'on the tin'.**
	Consistent HRM messages (Con)	**The compatibility and stability of the messages transmitted by the HRM practices; from different hierarchical levels, horizontal consistency within HR practices, and stability over time.**
Consensus (CONSEN): 'agreement among employees – the intended targets of influence by the HRM system – in their view of the event-effect relationship' (p. 212)	**Agreement amongst principal HRM decision-makers (message-senders) (Agr)**	**The extent to which employees perceive all message senders are in agreement about the message.**
	Fairness: perceptions of embedded distributive (Dis), procedural and interactional justice (Pro) in HRM practices	**Perceived fairness of the HRM system, which influences employee attitudes and behaviours**

Note: *'Understandability' did not load onto a factor in Delmotte et al.'s (2012) study, so this meta-feature was not included in their scale

Rationale for the Adaptation

Delmotte et al. (2012) developed an instrument consisting of 31 items to measure the various constructs, in a two-stage process; their initial assessment (Study A) was carried out with a sample of 111 line managers, of whom, 19.6% had completed post-16 education, 48% held a bachelor's degree, and 32.4% a master's degree. Analysis at this stage enabled them to reduce their original pool of 68 items to 40, which indicated a three-factor structure. They then refined the instrument further using a sample of 1274 trade union representatives, of whom 57% were white-collar workers or executive management level. The remaining 43% were blue collar workers. The education level in this larger, second-stage sample (Study B) was not as advanced as for the initial sample of line managers; 66% had achieved post-16 qualifications, 22.9% held a bachelor's degree and 9.1% a master's degree. This second stage in the development analysis reduced the number of items to 31, which loaded onto the three principal features of Bowen and Ostroff's (2004) framework, and the nine meta-features.

Adaptation of the Delmotte et al. (2012) scale was considered necessary because the original instrument was developed for a participant profile of well-educated HRM professionals, whose levels of literacy were much higher than the sample for this study. The term 'adaptation' rather than 'translation' is appropriate to this process as the aim and purpose is to 'tailor questions better to the needs of a given audience but still retain the stimulus or measurement properties of the original' (Harkness, Villar & Edwards, 2010: p 122). Examples of this practice include adapting an adult survey for use with children, or a US English-based survey for a UK English-speaking audience, as well as for differing levels of literacy, as in this instance. The objective is to retain the meaning of the original item while reducing the cognitive burden on the participant in understanding the meaning of the question or statement (Harkness et al., 2010).

The wording of many of the item statements in Delmotte et al.'s (2012) measure is complex, and would therefore be difficult for less literate respondents to understand. This was discussed with the representative of the case organisation for Study 2 during the process of understanding the organisation and its employees. It was decided that, on reviewing the questionnaire and item statements, that it was necessary to adapt the items in the instrument to keep the respondent cognitive burden low; to simplify the vocabulary used to make it suitable for this population with an expected lower level of education (Mohler, Dorer, de Jong & Hu, 2016). This is consistent with the advice of Hinkin (1998, p. 6) who suggests that 'statements should be simple and as short as possible, and the language should be familiar to target respondents' and this was clearly not the case with these subjects and the original item wording.

This proved a valid concern and a worthwhile exercise; in the descriptive statistics for the final Study 2 sample, 21.9% reported having no qualifications whatsoever, 41% had only completed compulsory education to age 16 and achieved qualifications at that level, and 20% had achieved post-16 qualifications. A Certificate of Higher Education was held by 4.7%. Only 9.3% held a bachelor's or foundation degree, and just 2.6% a master's degree (Table 5.2), representing a significantly different level of educational attainment for the case sample in Study 2 to that on which the instrument was developed and validated by Delmotte and his colleagues.

Table 5.2: Comparison between the samples used to develop the Delmotte et al. (2012) instrument to measure HRM System Strength, and the sample used for Study 2

Qualification Level		Delmotte et al. (2012) Study A Sample Profile	Delmotte et al. (2012) Study B Sample profile	Study 2 sample profile in this study
0	No Qualifications			22.00%
1	GCSEs or equivalent, below Grade C			13.30%
2	GCSEs or equivalent, at Grade C or higher		2.00%	28.00%
3	A levels or equivalent	19.60%	66.00%	20.00%
4	Cert of Higher Education, HNC			4.70%
5	Foundation Degree, HND			5.30%
6	Bachelor's Degree	48.00%	22.90%	4.00%
7	Master's Degree	32.40%	9.10%	2.70%
8	Doctoral Degree	N/A	N/A	N/A

Adaptation Method

Adaptation, unlike linguistic translation where a survey instrument is translated from a source language into another and validated for that language, involves

> *'deliberate changes to source material in order to meet new needs of various kinds. In the first instance, it involves modification of question content, format, order, or instructions to meet the needs of a new population, location, mode, or any combination of these'*

> (Harkness, Villar & Edwards, 2010, p. 133)

While research on the theory and practice of survey adaptation is less prevalent than that for linguistic translation (Harkness et al., 2010), there are nevertheless some guidelines, in particular that the data collected by the original and adapted instruments must be comparable (Granda, Wolf & Hadorn, 2010). In line with preferred strategies (e.g. Harkness, 2014; Pan & de la Puente, 2005) for survey translation and adaptation, a team approach to adapting the Delmotte et al., (2012) instrument was adopted, broadly utilising the TRAPD team translation model (Translation, Review, Adjudication, Pretesting, and Documentation: Harkness, 2014) , which is presented in Fig. 5.1. It is suitable for both linguistic translation and adaptation of items. An additional translation step (translation 3) was incorporated which does not appear in Harkness's (2014) model. The purpose of this was to provide the opportunity for representatives of the target survey population to be involved in the validation process after the initial simplification of the items had taken place, thus improving the validity of the final items.

The Harkness (2014) TRAPD team translation model was chosen in preference to the Hinkin (1998) 6-step scale development process as it is specifically for the adaptation or translation of an existing measurement instrument, rather than the development of a completely new measure, which is the purpose of the Hinkin (1998) process. However, elements of the Hinkin (1998) process were incorporated when appropriate and the incorporation of these provided enhanced rigor to the adaptation process. The TRAPD method is also similar to that used by MacKenzie, Podsakoff & Fetter (1991) to assess content validity, with the purpose of enhancing the readability, clarity and relevance of the items.
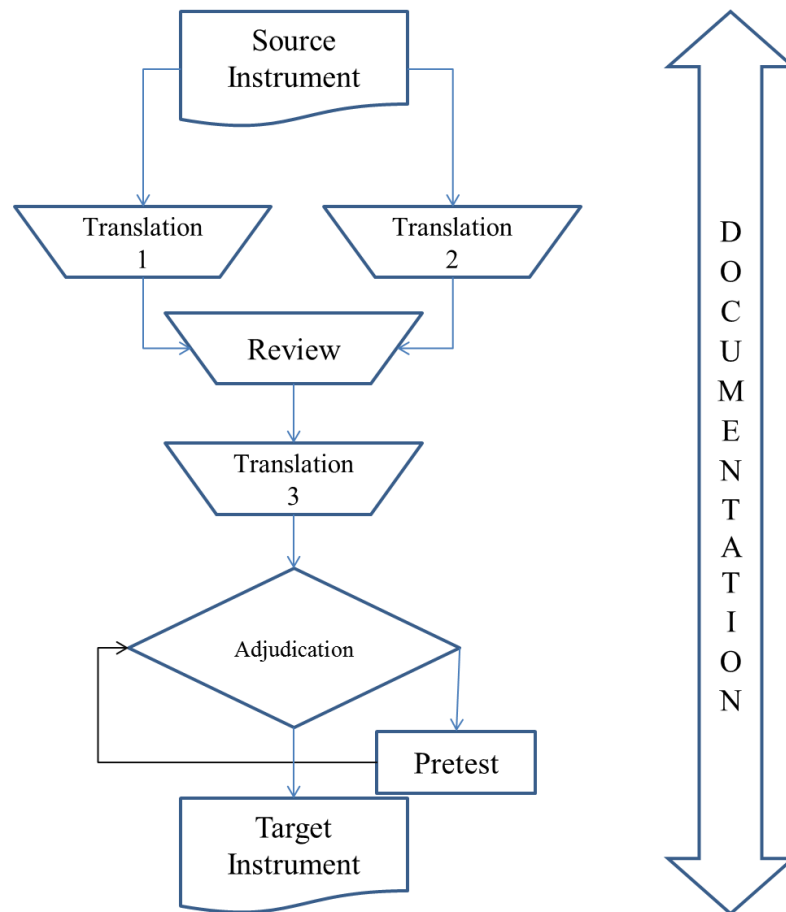
Fig. 5.1: The translation, review, adjudication, pretesting, and documentation model (Harkness, 2014) with an additional translation stage (Translation 3)

The adaptation process was carried out in two stages, by a team comprising six members of the target sample who volunteered to do the additional work, their general manager who knew these individuals well and was familiar with the levels of written and oral comprehension and abilities in the target population, and the researcher. Additionally, three academics whose English was excellent were also asked to help by providing independent adaptations for the items, to increase the likelihood that the final instrument would be generalisable to any population of people with lower levels of literacy and was not specific to the organisational context in which it was developed. The suitability of each team member was verified prior to their taking part; academics working in an English-speaking

professional context have an excellent understanding of written English, and the six members of the target audience were qualified by the roles they hold as employees.

Adjudication was carried out after the translation processes, and was undertaken by a team of seven adjudicators made up of academics familiar with Human Resources Management processes and terminology. The final pretesting stage was carried out by a small group of the target population.

The adaptation process undertaken was as follows:

Translation (1) and Translation (2)

The initial adaptation of the items was undertaken by the general manager and the researcher who each, independently, produced a set of reworded items which they felt made the same statement as the original but used less complex language. For this initial stage, all the 39 items which Delmotte et al. (2012) used in their Study B were used.

Review

These two then met and went through their adaptation ideas together, to review their suggestions and decide which of the two was the better, or to further modify if neither was felt to be a good fit. Some of the original items were felt to be straightforward enough and were not adapted, for example item 1 *'The HR Department undertakes exactly those actions that meet our needs'*. Others made no sense whatsoever and were rejected at this point as it was impossible to develop an adaptation as the original was incomprehensible, for example *'In this organisation it is clear what belongs to the tasks, and what's outside the field of the HR Department'*. A final suite of 36 adapted items was decided upon, and these were subjected to a second round of confirmatory validation (Translation 3).

Translation (3)

The six volunteers from the target population were each given a copy of the simplified statements which their manager and the researcher had previously together decided were the best adaptations of the original items. Volunteers were asked to explain, in their own words, what they thought the statement was saying. This was to test their cognitive comprehension of the simplified statements. The same exercise was also completed by the three academics, who were able to provide a non-context-specific view of the adapted statements. One of the six target population volunteers found it impossible to concentrate solely on the meaning of the statement and repeatedly responded to it, as if it was their opinion as to the truth of the statement was being sought rather than to cognitively test their understanding of the statement itself. As a result, the input of this person was discounted and just five sets of volunteer input, plus that from the three academics were put forward to the adjudication stage. This omission of one set of data is in line with the recommendations of Harkness et al. (2010, p. 129) who recommend that 'output and performance [of team members] … should be checked at early stages in order to address any problems found'

Adjudication

The input from each of the five remaining case organisation volunteers, and that from the three academics who had taken part in Translation 3 was amalgamated into a single spreadsheet, allowing all cognitive adaptations to be seen alongside each other, and with the original Delmotte et al. (2102) item also visible. This spreadsheet was assessed by seven academics who had not been involved in the earlier stages. Assessment of each item involved reading the original, un-adapted Delmotte et al. (2012) statement and then each of the suggested comparable adapted statements provided by the eight volunteers. This is consistent with the advice of Anderson & Gerbing (1991, in Hinkin, 1998) who suggest that this is a purely cognitive task which does not necessitate an understanding of the matter under examination. Each of the eight suggested volunteers' cognitive statements was

awarded a score of 2 if the adjudicator felt the meaning of the original Delmotte et al (2012) statement had been fully captured in the wording of the adapted item, 1 if the meaning had been partially captured, and 0 if little or none of the meaning had been captured in the suggested item's wording. An example of this spreadsheet adjudication is provided in Appendix C, where a cell coloured green indicates full agreement, yellow indicates partial agreement and pink signifies little or no agreement. If no satisfactory answer was provided, the response was discounted.

This step is similar and comparable to the Back-Translation process (BT) commonly used for linguistic translations, where wording from one language is translated into a second language and then verified by a second person translating it back into the original language, and the back-translated version compared with the original for accuracy. In this case, the extent to which the meaning of the original statement has been understood from the cognitively adapted item is being assessed.

The mean scores awarded by the seven adjudicating academics for each cognitively adapted item and their standard deviation was calculated, to give an indication of the accuracy and validity of each adapted item; the higher the mean score awarded for comparability between the Delmotte et al. (2012) original statement and the adapted versions, the higher the perceived validity, and the lower the standard deviation the greater the consensus amongst the adjudicators. Although no items were excluded at this stage and all were progressed to the final stage, pretesting, these assessments of content validity are available to be used if necessary as a reference point later when CFA is carried out.

Table 5.3 shows the *M* and *SD* scores for the cognitive testing adjudication for each item, and how it fits into the features and meta-features of the Bowen & Ostroff (2004) model of

HRM System Strength. Mean scores for accuracy between the original and the adapted items ranged from 1.05 for Item 36 (*My supervisor contributes to the way in which people management policy and practice is decided)* to 1.80 for Item 31 (*Some people at [organisation] get treated better because they are friends with their supervisor*). No item scored less than $M = 1.0$, indicating that for every item the adjudicators agreed that the meaning of the original Delmotte et al. (2012) item had been at least partially captured in the adapted items, and understood by the respondents. However, those at the lower end of the range of means indicate that in the opinion of the adjudicators, the representatives from the target audience had not understood the adapted statement fully, and therefore these items must be examined carefully as part of the Study 2 data analysis.

Table 5.3: Assessment of how well each adapted item matched the original Delmotte et al. (2012) item

Item #	*M*	*SD*	Feature	Meta-feature
1	1.23	0.80	Dist	Rel
2	1.34	0.76	Dist	Rel
3	1.45	0.79	Dist	Vis
4	1.77	0.42	Dist	Rel
5	1.46	0.73	Dist	Rel
6	1.61	0.63	Dist	Vis
7	1.39	0.63	Dist	Vis
8	1.69	0.64	Dist	Leg
9	1.57	0.66	Dist	Rel
10	1.31	0.71	Dist	Leg
11	1.62	0.49	Dist	Leg
12	1.67	0.64	Consis	Ins
13	1.45	0.66	Consis	Ins
14	1.68	0.47	Consis	Ins
15	1.26	0.66	Consis	Ins
16	1.64	0.57	Consis	Val
17	1.31	0.71	Consis	Val
18	1.20	0.87	Consis	Val
19	1.60	0.66	Consis	Val
20	1.68	0.54	Consis	Ins
21	1.49	0.81	Consis	Con
22	1.11	0.71	Consis	Con
23	1.07	0.65	Consis	Con
24	1.61	0.49	Consis	Con
25	1.46	0.73	Consen	Dis
26	1.69	0.67	Consen	Dis
27	1.63	0.68	Consen	Dis
28	1.60	0.69	Consen	Dis
29	1.46	0.77	Consen	Dis
30	1.12	0.91	Consen	Pro
31	1.80	0.40	Consen	Pro
32	1.51	0.73	Consen	Pro
33	1.49	0.77	Consen	Agr
34	1.35	0.77	Consen	Agr
35	1.40	0.58	Consen	Agr
36	1.05	0.75	Consen	Agr

Note: For a key to abbreviations, please see Table 5.1

Details of the original Delmotte et al. (2012) items, and the final adapted version developed

and accepted during this process may be found in Appendix C.

Pretesting

A group of seven volunteers from the target population, who had not previously been involved in the item cognitive adaptation process agreed to pre-test the survey items. After completing the pilot survey questions, they were verbally debriefed during which process they gave feedback on the length of time it took to answer the questions, which varied from seven minutes to fifteen minutes, and how easy they had found the statements to understand. None of these volunteers reported any difficulty understanding the statements.

It would have been valuable to have been able to also test the items on a larger population, to explore the factor structure in the data gathered during that process, as recommended by Hinkin (1998). However, due to time and resource constraints this was not possible; to have used the Study 2 population for a large scale pilot could have jeopardised the final study as it was not possible for the case organisation to free up staff to complete two surveys during working hours, and those who had taken part in the pretesting study could not then take part in Study 2 (Hinkin, 1998), so the choice had to be made whether to carry out a further larger scale pre-test in this case organisation which would have meant negotiating access to a further case organisation for Study 2, or to use this case organisation for Study 2. As the constraints of time and cost did not allow the research period to be further extended, the choice of using the case organisation for Study 2 and carrying out a small pre-test with just a few representative members of the target population was chosen.

Documentation

This is not as such a stage in the TRAPD adaptation process, rather it is on ongoing process which ensures rigour and which facilitates accuracy and the identification of anomalies or problems early on in the process. Throughout the first four stages (translation, review, adjudication and pre-testing) documentary records were kept of the method and the outcomes, and in the event that any aspect of the adaptation indicated it would jeopardise the

reliability of the outcome, the material was reviewed and a decision made as to whether or not to further include that output or individual in the future process.

In conclusion, of the 39 original items in the Delmotte et al. (2012) instrument for HRM System Strength, all but three of these were adapted for use with a survey population with a substantially lower level of linguistic ability and vocabulary. While the items appear to be accurately reflecting the original Delmotte et al. (2012) items, and have been pre-tested by a small number of the intended target audience, it was necessary to carry out CFA when a larger dataset was available after data collection in Study 2.

5.6. Data Preparation

After completing data collection on the five participating sites, questionnaires were checked for large amounts of missing data, and any which were less than approximately 80% complete were not included in the analysis, even if a supervisor's performance rating was available.

Items measuring the various elements of physical and mental health for the SF-12v2® Health Survey was initially processed using the software provided by the developer to create scores for each item, and also indices of physical (PCS) and mental (MCS) health, which were then transferred into the main data file for use in the main analysis.

Data was entered into SPSS v21 manually, and then checked for values outside the acceptable range before correcting any errors found by referring back to the paper questionnaire for confirmation of the correct data.

All reversed coded items were processed to reverse their scores, with the exception of the final three items in the future time perspective (FTP) scale (Lang & Carstensen, 1996). This is because Study 2 will follow the same principal as Cate & John (2007) and Kooij et al. (2013), and the findings of Study 1; in the original study by Lang & Carstensen, FTP was considered to be a single bi-polar construct, and therefore it was necessary to reverse the scores of the last three items, so all scores were weighted in the same direction. However, as FTP is found to be a two-factor construct, limited FTP, which is measured by the final three items in the scale is an independent component and therefore it would not be correct to reverse those item scores. For each subject, the mean score for items 1, 4, 5 was calculated to produce a measure of open-ended FTP (OEFTP), and the mean of items 8 and 10 was calculated to produce a measure of limited FTP (LIMFTP)

The scores for the emotional experience (positivity) scale were processed to provide, for each subject, totals for the number (frequency) of negative and positive emotions they reported feeling during the week prior to completion of the survey, called NEGRFRE and POSFRE respectively. Additionally, a score was calculated for each subject for the intensity of the emotional experiences, again, one score for the intensity of positive emotional feeling (POSINT) and a separate score the for intensity of negative emotional feeling (NEGINT). This was achieved by calculating the mean of the reported intensity across all positive emotions, and separately, the mean score for the intensity of all negative emotions. This is broadly in harmony with the data treatment by Carstensen et al. (2000). In the final analysis, only the scores for the positive elements of the data was used. This was to simplify the analysis, and to increase its statistical power by reducing the number of variables relative to the sample size ($N = 151$)

5.7. Results

Descriptive Statistics

Of the 151 Colleague participants for whom supervisors' rating of performance were available and linked, 105 (69.5%) were male, and 46 (30.5%) were female. Ages ranged from 18 years to 65 years, and the mean was 38.75 years ($SD = 13.153$ years) See Fig. 5.3 for details of age distribution. Of the colleagues, 132 (87.4%) were employed on full time contracts, and the remaining 19 (12.6%) were part-time. All levels of educational attainment with the exception of doctoral level (Level 8) were represented in the sample, but almost two-thirds (63.3%) had only completed compulsory education to age 16, with 21.9% reporting having no qualifications whatsoever. A further 20% had achieved 'A' Levels or other Level 3 equivalents, and 10% held Level 4 or Level 5 qualifications. Only 6.7% of the sample had been awarded a bachelor's (Level 6) or master's (Level 7) degree.
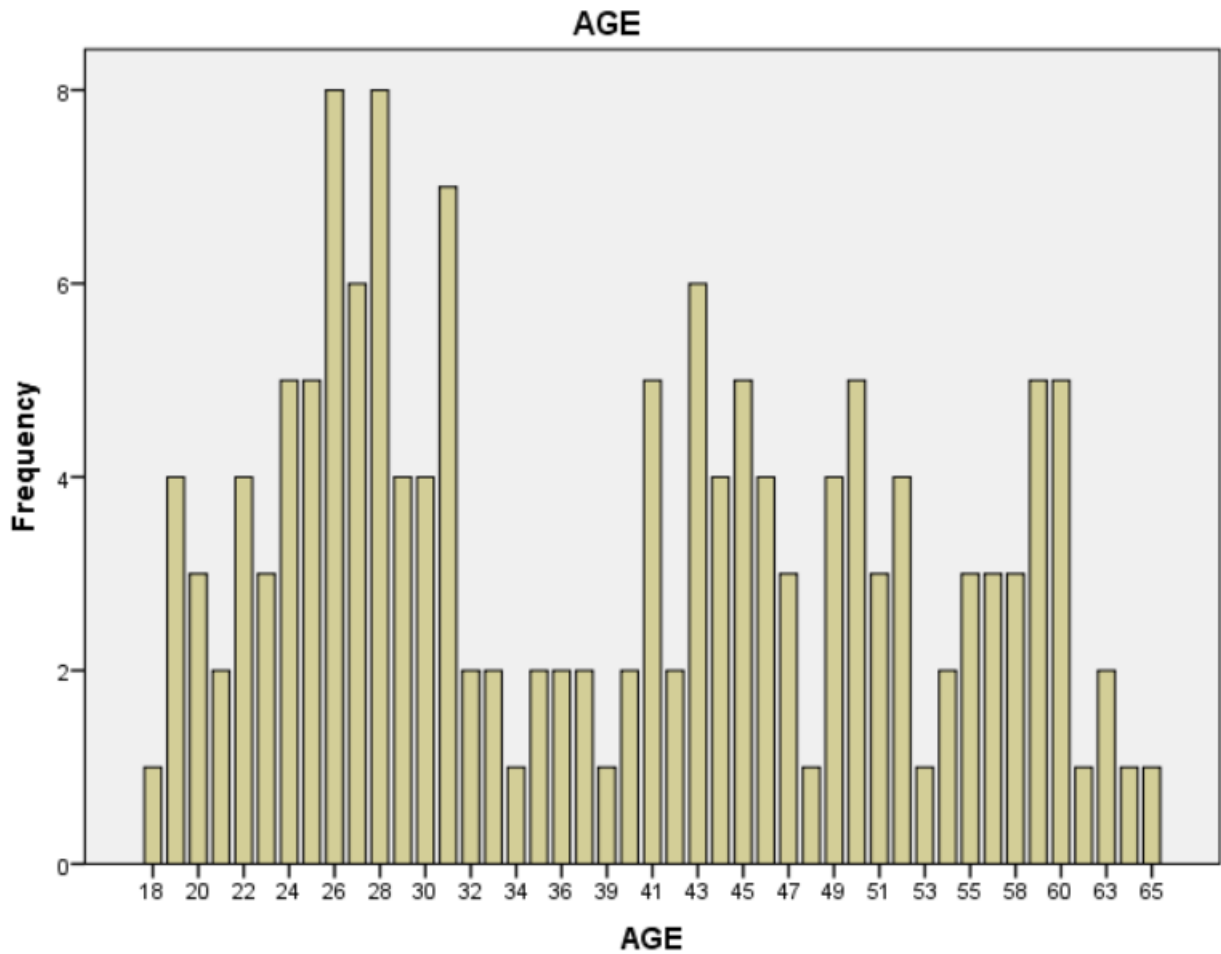
Fig 5.3: Age Frequency Distribution in Study 2

The distribution of ages shows a bi-modal pattern, with one peak around the late 20s, and a second peak around age 50. The overall distribution within the data is positively skewed (.235), but the *z*-score of skewness (*S*) is 1.193, indicating there is no significant skewness in the age distribution (Field, 2009).

Confirmatory Factor Analyses (CFA)

Perceptions of HRM system strength

As it had not been possible to fully pre-test the adapted Delmotte et al. (2012) items during the adaption stage without jeopardising access to the case organisation for Study 2, CFA was carried out on the Study 2 data.

The inter-item correlation matrix indicates a large number of inter-item correlations at >.3. The table is too large to include in this thesis, but is available on request. However, in summary, the mean scores for the items ranged from *M* = 2.25 for item 33 (*We get better pay and benefits when we work in the way [organisation] wants us to*) to *M* = 3.53 for item 2 (*My supervisor provides an excellent standard of people management practice*). Item 23 (*The various HR initiatives send changeable signals*) and item 24 (*Supervisors make decisions based on facts rather than feelings*) had no significant correlations > .3 with other items, and the greatest number of correlations > .3 with other items was 24, for item 12 (*At [organisation], the HR department makes a valuable contribution*) and also item 29 (*The HR department and my Supervisor are clearly on the same wavelength*).

The above indicate the matrix is factorable. Initially, EFA was carried out using SPSS v. 23. A total of nine components returned eigenvalues >1, although several of these were only just over 1 (Table 5.4). A Monte Carlo PCA for parallel analysis (Variables = 36, Subjects = 151) however, suggests extracting just three components (Table 5.4), which fits with the original factor structure as defined by Delmotte et al. (2012). The three components which together make up a total of 42.078% of the total variance were component 1 (28.461%), Component 2 (8.340%) and Component 3 (5.277%).

Table 5.4: HRM system strength component analysis

Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Monte Carlo PCA Random Eigenvalue
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	
1	**10.246**	28.461	28.461	10.246	28.461	28.461	**2.0638**
2	**3.002**	8.340	36.801	3.002	8.340	36.801	**1.9198**
3	**1.900**	5.277	42.078	1.900	5.277	42.078	**1.8202**
4	1.677	4.659	46.737	1.677	4.659	46.737	1.7263
5	1.544	4.290	51.026	1.544	4.290	51.026	1.6505
6	1.399	3.858	54.885	1.389	3.858	54.885	1.5756
7	1.234	3.427	58.312	1.234	3.427	58.312	1.5045
8	1.205	3.347	61.659	1.205	3.347	61.659	1.4415
9	1.065	2.958	64.617	1.065	2.958	64.617	1.3830
10	.929	2.580	67.197				
11	.924	2.568	69.765				
12	.864	2.401	72.166				
13	.796	2.210	74.376				
14	.754	2.094	76.471				
15	.731	2.030	78.501				
16	.688	1.911	80.412				
17	.671	1.865	82.227				
18	.574	1.594	83.871				
19	.542	1.506	85.377				
20	.506	1.405	86.782				
21	.453	1.257	88.040				
22	.439	1.219	89.259				
23	.432	1.201	90.460				
24	.409	1.137	91.597				
25	.382	1.062	92.659				
26	.365	1.014	93.673				
27	.331	.919	94.593				
28	.291	.809	95.401				
29	.279	.776	96.177				
30	.279	.774	96.951				
31	.236	.657	97.608				
32	.214	.594	98.202				
33	.197	.548	98.750				
34	.177	.492	99.242				
35	.162	.451	99.693				
36	.111	.307	100.000				

CFA was carried out in IBM Amos v. 23. To confirm the factor analysis of the adapted perceived HRM system strength items, all items were initially included in a single factor model. The result of this was a poor fit (CFI = .640, TLI = .617, RMSEA = .095). The next model included all items but structured in the theorised three-component model. The result of this was also a poor fit (CFI = .657, TLI = .632, RMSEA = .097). By examining the standardised regression weights and modification indices, it was possible to identify and thus remove items which had a detrimental effect on the model fit. The criteria for removing items from the model were if their standardised regression weight <.5 or if they showed weighting against more than one component at > .4 (Ford et al., 1986). Additionally, if the modification indices showed significant covariance between two or more items, one or more were removed to improve model fit but giving consideration to the theoretical underpinnings of the instrument in deciding which items to remove.

Following modification, five items which loaded onto *Distinctiveness*, five items which loaded onto *Consensus*, and six items which loaded onto *Consistency* were retained , and the model fit was much improved (CFI = .858, TLI = .832, RMSEA = .059). The number of items per factor fits with Hinkin's (1998) stated objective of instrument development that it is necessary to retain four to six items per scale factor.

However, a single factor model for HRM system strength overall, using just these 11 items indicates that a single-factor model also provides an acceptable fit (CFI=.887, TLI=.868, RMSEA=.055) and in the interests of optimising the power of the final model, this was selected as the best option. For the modified instrument, the Cronbach's α = .877.

5.8. Refining the theoretical model for Study 2

To establish the independence of the variables in the conceptual model for Study 2 and to identify and remove any items which were impacting negatively on the fit of the data to the model, CFA was carried out. Using IBM Amos v.23, a single factor model incorporating all items for the various dependent variables was tested and found to be a poor fit ($X^2 = 825.677$, $df = 413$, TLI = .784, CFI = .820, RMSEA = 0.82). Those items whose standard regression weights < .5 were removed from the model and where items indicated significant covariance between items or factors, one or more were removed. The decision to remove a particular item was taken with consideration for the theoretical implications of removing or leaving the item in the model. The final model indicates good fit ($X^2 = 658.456$, $df = 467$, TLI = .918, CFI = .932, RMSEA = 0.057).

5.9. Means, Standard Deviations and Inter-correlations

The means and standard deviations are provided in Table 5.5. Examination and analysis of the means and standard deviations show that employees' mental well-being is slightly below average (48.32, standardised score average is 50.00), although the standard deviation (10.712) indicates a wide variation in scores. Future time perspective was measured over a 7-point scale, and with means scores of 4.35 (OEFTP) and 4.06 (LIMFTP), these were unremarkable, although the standard deviations, at 1.303 and 1.543 respectively, do indicate a wider range of feelings about time perspective. Employee satisfaction with learning ($M = 4.05$, $SD = 1.055$, measured over a 6-point scale), and developmental goal orientation ($M = 5.72$, $SD = 1.141$, measured over a 7-point scale) indicate that scores are generally higher than the median score possible, which broadly fits with the organisation's encouragement of continuous learning and development. Employee in-role performance behaviours as rated by supervisors ($M = 3.93$, $SD = .726$, measured over a 5-point scale), is also higher than the mid-point score. Interestingly, the standard deviation for this measure is relatively low, indicating a high level of consensus between different supervisors about the performance

levels achieved by their direct reports. HRM system strength, which was measured over a 5-point scale indicated scores were close to, but slightly higher than the mid-point score, and the standard deviation indicates high levels of consensus ($M = 2.89$, $SD = .605$). The mean and standard deviation for perception of change, which was measured over a 5-point scale indicate that employees perceive high levels of change which affects their role, and this opinion is consistent across colleagues, as shown by the low standard deviation ($M = 3.26$, $SD = .751$).

Without applying any controls, examination of the correlation matrix (Table 5.5) indicates that as expected, age is negatively related to open-ended FTP, and positively related to limited FTP. Although age shows the expected positive relationship with frequency of positive emotions, this failed to reach significance. The expected effects of age on developmental goal orientation were observed, with a significant negative relationship.

There was a very small negative relationship, rather than the positive relationship predicted, between age and in-role performance behaviours but this did not achieve significance. The relationship between age and learning satisfaction, while being negative as predicted, also failed to reach significance. As predicted, there was a significant positive relationship between age and mental well-being. Employee perception of change was significantly correlated with only one other variable, limited FTP, with which it has a positive relationship. Nevertheless, it is important to retain this as a control variable because of the known potential effects of organisational change on levels of employee mental well-being (e.g. Bamberger, Vinding, Larsen, Nielsen, Fonager, Nielsen, Ryom & Omland, 2012; Dahl, 2011; Köper, Dorschu, Thomson & Richter, 2013; Sikora, Beatty & Forward, 2004), goal congruence (e.g. Caldwell et al., 2004), in-role behaviours (e.g. Bettencourt, 2004), and work satisfaction and motivation (e.g. Köper et al., 2013).

Table 5.5: Means, Standard Deviations and Inter-correlations for Study 2 Variables

	Variables	*M*	*SD*	*N*	1	2	3	4	5	6	7	8	9	10	11	12
1	Age	38.75	13.153	151	1											
2	Gender	1.30[a]	.462	151	.148	1										
3	Highest Qualification	3.17	1.783	150	-.329 **	-.040	1									
4	Freq pos emotions	6.93	2.047	148	-.043	.009	.140	1								
5	Mental component score	48.32	10.712	151	.230 **	-.044	.097	.025	1							
6	Open-ended FTP	4.35	1.303	151	-.332 **	-.040	.270 **	.105	.130	1						
7	Limited FTP	4.06	1.543	151	.201 *	.196 *	-.038	-.138	-.167 *	.365 **	1					
8	Learning Satisfaction	4.05	1.055	151	-.005	.003	-.072	.153	.340 **	.202 *	-.180 *	1				
9	In-role behaviours	3.93	.726	151	-.098	.188	.083	-.072	.108	.119	-.102	.201 *	1			
10	Developmental Goal orientation	5.72	1.141	151	-.217 **	-.030	.428 **	.135	.195 *	.350 **	-.160 *	.171 *	.051	1		
11	HRM system strength	2.89	.605	151	-.115	-.071	-.018	-.016	.350 **	.254 **	-.137	.560 **	.205 *	.184 *	1	
12	Perception of change	3.26	.751	151	.105	.135	-.152	.103	-.071	.003	.162 *	.031	-.046	-.037	-.078	1

Note: [a] Male = 1, Female = 2; * Correlation is significant at the 0.05 level (2-tailed), ** Correlation is significant at the 0.01 level (2-tailed)

5.10.   Hypothesis Testing

To test the hypotheses, Hayes (2012-2018) Process v. 2.16.3 was used, using 5000 bootstrap samples for bias correcting bootstrap confidence intervals, and 95% as the level of confidence for outputs. Perception of change was used as a control variable throughout, with additional controls as required by the theoretical model.

Tests of main effects

The full results of the tests for the main effects (Hypotheses H1a to H1g) are presented in Table 5.6.

Hypothesis H1a proposed that age is negatively related with open-ended future time perspective (OEFTP). As predicted, there was a significant negative relationship between these two variables ($b = -.0262$, $t = -3.5180$, $p = .0006$), so H1a is supported.

Hypothesis H1b stated that Age is positively correlated with limited future time perspective (LIMFTP).However, the relationship between these two variables is non-significant ($b = .0081$, $t = .8615$, $p = .3904$) so contrary to prediction, H1b is not supported. This concurs with the findings of Study 1.

Hypothesis H1c predicted that age would be positively related to frequency of positive emotional experiences. Contrary to predictions, the relationship between age and positive emotional experience is not significant ($b = -.0018$, $t = -.1360$, $p = .8920$), so H1c is not supported. This also supports the findings of Study 1.

Table 5.6: Results of the tests of the main effect, hypotheses H1a to H1g

Variables	H1a: Age → OEFTP				H1b: Age → LIMFTP				H1c: Age → Frequency of positive emotional experience (POS)				H1d: Age → Developmental goal orientation			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*	*b*	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	**5.9847**	.6051	9.8903	.0000	5.0430	.8571	5.8840	.0000	6.2249	1.2666	4.9146	.0000	4.5842	.7206	6.3617	.0000
Controls																
Perception of change	.0997	.1319	.7556	.4511	**.3304**	**.1584**	**2.0858**	**.0388**	.3494	.2286	1.5279	.1287	-.0485	.1213	-.4000	.6897
OEFTP					**-.4057**	**.0959**	**-4.2309**	**.0000**	.0823	.1457	.5650	.5730	**.2796**	**.0767**	**3.6437**	**.0004**
LIMFTP	**-.2742**	**.0648**	**-4.2309**	**.0000**					-.1801	.1189	-1.5142	.1322	.0072	.0631	.1141	.9093
POS	**.0271**	.0479	.5650	.5730	-.0876	.0579	-1.5142	.1322								
IV																
Age	**-.0262**	**.0074**	**-3.5180**	**.0006**	.0081	.0094	.8615	.3904	-.0018	.0135	-.1360	.8920	-.0093	.0071	-1.3018	.1951

Variables	H1e: Age → Employee in-role performance behaviours				H1f: Age → Employee satisfaction with learning opportunities				H1g: Age → Employee mental well-being			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	4.2235	.5616	7.5204	.0000	2.4250	.7865	3.0832	.0025	31.3075	7.5229	4.1616	.0001
Controls												
Perception of change	-.0159	.0834	-.1901	.8495	.0604	.1169	.5166	.6063	-1.3698	1.1177	-1.2255	.2224
OEFTP	.0460	.0552	.8345	.4054	.1313	.0773	1.6992	.0915	1.0517	.7390	1.4231	.1569
LIMFTP	-.0329	.0434	-.7587	.4493	-.0742	.0607	-1.2220	.2238	-.9224	.5810	-1.5876	.1146
POS	-.0329	.0304	-1.0800	.2820	.0558	.0426	1.3096	.1924	-.0356	.4076	-.0872	.9306
GOAL	.0061	.0577	.1056	.9160	.0839	.0808	1.0388	.3007	**1.7257**	**.7729**	**2.2330**	**.0271**
IV												
Age	-.0031	.0049	-.6267	.5319	.0071	.0069	1.0330	.3034	**.2869**	**.0659**	**4.3510**	**.0000**

Note: Significant relationships in bold

H1d hypothesised that age is negatively related to developmental goal orientation. The data while indicating the relationship was negative did not reach significance ($b = -.0262$, $t = -3.5180$, $p = .1950$) so H1d is not supported.

Against prediction, hypothesis H1e, which stated that employee age is positively related to employee in-role performance behaviour, was not significant ($b = -.0031$, $t = -.6267$, $p = .5319$). Therefore hypothesis H1e is not supported.

Also against prediction, hypothesis H1f was non-significant ($b = .0071$, $t = 1.0330$, $p = .3034$) Therefore H1f, which predicted a negative relationship between age and employee satisfaction with learning is not supported.

As hypothesised, employee age predicts mental well-being; hypothesis H1g stated that employee age is positively related to employee mental well-being, and results indicate this prediction is supported ($b = .1957$, $t = 3.0020$, $p = .0031$). Thus H1g is supported.

In summary, in support of the findings of Study 1, of the two types of FTP, age predicts only open-ended FTP; the relationship between age and limited FTP is non-significant. This suggests that any age-related effects which are predicted by FTP are therefore through open-ended FTP only, and any effect which is related to limited FTP is not age-related, but purely the result of the reduced time perspective. In this study, as in Study 1, age had no direct relationship with the frequency of employees' positive emotional experience indicating that there is no evidence that older people have more positive emotional experiences than younger people.

Increased age did indicate a lower level of developmental goal orientation, supporting the notion that as people age they become gradually less focused on developmental goals but

again, contrary to expectations this relationship was not significant. There was a mixed pattern to the three outcome variables; there were no significant relationships with either in-role performance behaviours or satisfaction with the learning opportunities offered by the organisation, but a strong positive relationship between age and mental well-being was found, indicating that older workers generally have better mental well-being than younger people.

Tests of mediation

The first group of hypotheses (H2a, H2b and H2c) relate to proposed mediators in the relationship between employee age, and employee developmental goal orientation. For clarity, I have presented the results of each mediation test in table form as well as in writing. Although this does introduce some repetition within groups of hypotheses, it is clearer to present the data in this way than to try to combine it all into one table.

Hypothesis H2a stated that employee OEFTP is positively related to developmental goal orientation, and mediates the negative relationship between age and developmental goal orientation. As predicted, employee OEFTP is significantly positively related to developmental goal orientation ($b = .2796$, $t = 3.6437$, $p = .0004$), but there is no significant direct effect between age and goal orientation (effect = -.0093, Boot SE = .0071, LLCI = -.0233, ULCI - .0048). However, there is a significant indirect mediation effect between age and developmental goal orientation (Effect = -.0073, Boot SE = .0028, LLCI = -.0139. ULCI = -.0028). Therefore H2a is supported (See Table 5.7)

H2b predicted that employee LIMFTP is negatively related to employee developmental goal orientation, and mediates the negative relationship between age and developmental goal orientation. The relationship between LIMFTP and developmental goal orientation, was

negative but not significant ($b = .0072$, $t = .1141$, $p = .9093$). Additionally, there was no

significant effect (effect = -.0093, Boot SE - .0071, LLCI = -.0233, ULCI = .0048) between

age and developmental goal orientation, and no significant indirect mediation effect (effect =

.0001, Boot SE = .0007, LLCI = .0010, ULCI = .0023) (Table 5.8), so hypothesis H2b was

not supported.

Table 5.7   Hypothesis H2a

Variables	DV: Employee development goal orientation			
	b	**se**	**t**	**p**
Constant	4.5842	0.7206	6.3617	.0000
Controls				
Perception of Change	-.0485	.1213	-.4000	.6897
LIMFTP	.0072	.0631	.1141	.9093
POS	.0568	.0440	1.2917	.1986
Mediator(s)				
OEFTP	**.2796**	**.0767**	**3.6437**	**.0004**
IV				
Age	-.0093	.0071	-1.3018	.1951
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0093	.0071	-.0233	.0048
Indirect effect	**-.0073**	**.0028**	**-.0139**	**-.0028**

Note: Significant relationships in **bold**

Table 5.8   Hypothesis H2b

Variables	DV: Employee development goal orientation			
	b	*se*	*t*	*p*
Constant	4.5842	.7206	6.3617	.0000
Controls				
Perception of Change	-.0485	.1213	-.4000	.6897
OEFTP	**.2796**	**.0767**	**3.6437**	**.0004**
POS	.0568	.0440	1.2917	.1986
Mediator(s)				
LIMFTP	.0072	.0631	.1141	.9093
IV				
Age	-.0093	.0071	-1.3018	.1951
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0093	.0071	-.0233	.0048
Indirect effect	.0001	.0007	-.0010	.0023

Note: Significant relationships in **bold**

H2c hypothesised a negative relationship between employee positive emotional experience, and employee developmental goal orientation, and that employee positive emotional experience would mediate the negative relationship between age and developmental goal orientation. As already mentioned, the direct relationship between age and developmental goal orientation is not significant, and neither was the relationship between employee positive emotional experience and employee goal orientation, (b = .0568, t = 1.2917, p = .1986). Neither the direct (effect =-. 0093, Boot SE = .0071, LLCI = -.0233, ULCI = .0045) nor the indirect effect (effect = -.0001, Boot SE = .0009, LLCI = -.0026, ULCI = .0014) are significant, therefore H2c is not supported (Table 5.9).

Table 5.9   Hypothesis H2c

Variables	DV: Employee development goal orientation			
	b	*se*	*t*	*p*
Constant	4.5842	.7206	6.3617	.0000
Controls				
Perception of Change	-.0485	.1213	-.4000	.6897
OEFTP	**.2796**	**.0767**	**3.6437**	**.0004**
LIMFTP	.0072	.0631	.1141	.9093
Mediator(s)				
POS	.0568	.0440	1.2917	.1986
IV				
Age	-.0093	.0071	-1.3018	.1951
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0093	.0071	-.0233	.0048
Indirect effect	-.0001	.0009	-.0026	.0014

Note: Significant relationships in **bold**

The third group of hypotheses relate to the mediating role of employee developmental goal orientation in the relationships between respectively, employee open-ended FTP (H3a), employee limited FTP (H3b), and frequency of employee positive experience (H3c), and employee in-role performance behaviours.

H3a predicted a positive relationship between employee developmental goal orientation, and employee in-role performance behaviours, and that it would mediate the positive relationship between employee OEFTP and in-role performance behaviours. However, the relationship between employee developmental goal orientation and employee in-role performance behaviours is not significant (b = .0061, t = .1056, p = .9160). Moreover, both the direct (effect = .0460, Boot SE = .0552, LLCI = -.0630, ULCI = .1551) and the indirect effects (effect = .0017, Boot SE = .0177, LLCI = -.0344, ULCI = .0388) between OEFTP and in-role performance behaviours, are also non-significant, therefore hypothesis H3a is not supported (Table 5.10)

Table 5.11 shows the results for hypothesis H3b, which stated that there would be a positive relationship between employee developmental goal orientation and employee in-role performance behaviours, and that this would mediate the negative relationship between LIMFTP and employee in-role performance behaviours. As reported for H3a, there is no significant relationship between employee goal orientation and employee in-role performance behaviours (b = .0061, t = .1056, p = .9160). Furthermore, as for H3a, both the direct (effect =-.0329, Boot SE = .0434, LLCI = -.1187, ULCI = .0528) and indirect effects (effect = .0000, Boot SE = .0034, LLCI = -.0071, ULCI = .0076) between LIMFTP and in-role performance behaviours failed to reach significance, so H3b is not supported.

The last hypothesis in this group, H3c, predicted that there would be a positive relationship between employee developmental goal orientation and employee in-role performance behaviours which will mediate the positive, direct relationship between employee positive emotional experience and employee in-role behaviours. As reported for H3a and H3b, the relationship between employee developmental goal orientation and employee in-role performance behaviours is not significant (b = .0061, t = .1056, p = .9160). The predicted positive direct effect between employee positive emotional experience and in-role performance behaviours (effect = -.0329, Boot SE = .0304, LLCI = -.0930, ULCI = .0273), and also the indirect effect via employee goal orientation were also non-significant (effect = .0003, Boot SE = .0045, LLCI = -.0074, ULCI = .0126). Thus H3c is not supported (Table 5.12).

Table 5.10   Hypothesis H3a

Variables	DV: Employee in-role performance behaviours			
	b	*se*	*t*	*p*
Constant	4.2235	.5616	7.5204	.0000
Controls				
Perception of Change	-.0159	.0834	-.1901	.4504
LIMFTP	-.0329	.0434	-.7587	.4493
Age	-.0031	.0049	-.6267	.5319
POS	-.0329	.0304	-1.0800	.2808
Mediator(s)				
GOAL	.0061	.0577	.1056	.9160
IV				
OEFTP	.0460	.0552	.8345	.4054
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	.0460	.0552	-.0630	.1551
Indirect effect	.0017	.0177	-.0334	.0388

Note: Significant relationships in **bold**

Table 5.11   Hypothesis H3b

Variables	DV: Employee in-role performance behaviours			
	b	*se*	*t*	*p*
Constant	4.2235	.5616	7.5204	.0000
Controls				
Perception of Change	-.0159	.0834	-.1901	.8495
OEFTP	.0460	.0552	.8345	.4054
Age	-.0031	.0049	-.6267	.5319
POS	-.0329	.0304	-1.0800	.2820
Mediator(s)				
GOAL	.0061	.0577	.1056	.9160
IV				
LIMFTP	-.0329	.0434	-.7587	.4493
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0329	.0434	-.1187	.0528
Indirect effect	.0000	.0034	-.0071	.0076

Note: Significant relationships in **bold**

Table 5.12   Hypothesis H3c

Variables	DV: Employee in-role performance behaviours			
	b	**se**	**t**	**p**
Constant	4.2235	.5616	7.5204	.0000
Controls				
Perception of Change	-.0159	.0834	-.1901	.8495
OEFTP	.0460	.0552	.8345	.4054
LIMFTP	-.0329	.0434	-.7587	.4493
Age	-.0031	.0049	-.6267	.5319
Mediator(s)				
GOAL	.0061	.0577	.1056	.9160
IV				
POS	-.0329	.0304	-1.0800	.2820
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0329	.0304	-.0930	.0273
Indirect effect	.0003	.0045	-.0074	.0126

Note: Significant relationships in **bold**

This next group of hypotheses addresses the mediating role of employee developmental goal orientation in the relationships between respectively, employee open-ended FTP (H4a), employee limited FTP (H4b), and frequency of employee positive experience (H4c), and employee satisfaction with the learning opportunities provided by the organisation. As for previous groups of hypotheses, results are presented in tables.

Contrary to prediction (H4a) which stated that there will be a positive relationship between employee developmental goal orientation and employee satisfaction with learning opportunities offered, and that goal orientation will mediate the relationship between employee OEFTP and employee satisfaction with learning, the relationship between goal orientation and satisfaction with learning, while positive, is non-significant ($b = .0839$, $t = 1.0388$, $p = .3007$). Additionally, neither the direct (effect = .1313, Boot SE = .0773, LLCI = -.0215, ULCI = .2840) nor the indirect effects are significant (effect = .0235, Boot SE = .0299, LLCI = -.0235, ULCI = .0981) , thus H4a is not supported (Table 5.13)

Table 5.13   Hypothesis H4a

Variables	DV: Employee satisfaction with learning opportunities.			
	b	*se*	*t*	*p*
Constant	2.4250	.7865	3.0832	.0025
Controls				
Perception of Change	.0604	.1169	.5166	.6063
LIMFTP	-.0742	.0607	-1.2220	.2238
Age	.0071	.0069	1.0330	.3034
POS	.0558	.0426	1.3096	.1924
Mediator(s)				
GOAL	.0839	.0808	1.0388	.3007
IV				
OEFTP	.1313	.0773	1.6992	.0915
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	.1313	.0773	-.0215	.2840
Indirect effect	.0235	.0299	-.0235	.0981

Note: Significant relationships in **bold**

Hypothesis H4b predicted that employee developmental goal orientation would be positively related to employee satisfaction with learning opportunities, and would mediate the negative relationship between employee LIMFTP and satisfaction with learning opportunities. As reported in H4a above, the relationship between developmental goal orientation and learning satisfaction did not reach significance (b = .0839, se = .0808, t = -1.2220, p = .3007). The direct effect between employee LIMFTP and satisfaction with learning opportunities, while negative, was also not significant (effect = -.0742, Boot SE = .0607, LLCI = -.1943, ULCI = .0459), and neither was the indirect effect (effect = .0006, Boot SE = .0071, LLCI = -.0101, ULCI = .0225) (Table 5.14) Hence, H4b is not supported.

Table 5.14   Hypothesis H4b

Variables	DV: Employee satisfaction with learning opportunities.			
	b	*se*	*t*	*p*
Constant	2.4250	.7865	3.0832	.0025
Controls				
Perception of Change	.0604	.1169	.5166	.6063
OEFTP	.1313	.0773	1.6992	.0915
Age	.0071	.0069	1.0330	.3034
POS	.0558	.0426	1.3096	.1924
Mediator(s)				
GOAL	.0839	.0808	1.0388	.3007
IV				
LIMFTP	-.0742	.0607	-1.2220	.2238
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0742	.0607	-.1943	.0459
Indirect effect	.0006	.0071	-.0101	.0225

Note: Significant relationships in **bold**

The final hypothesis in this group, H4c, predicted that employee developmental goal orientation would be positively related to employee satisfaction with learning opportunities, and would mediate the negative relationship between the frequency of employee positive emotional experience. Table 5.15 presents the results, and shows that as for H4a and H4b, the relationship between employee goal orientation and employee satisfaction with learning is not significant (*b* = .0839, *se* = .0808, *t* = -1.2220, *p* = .3007), and neither is the direct effect of frequency of employee positive emotional experience on learning satisfaction (effect = .0558, Boot SE = .0426, LLCI = -.0284, ULCI = .1401). Similarly, the indirect effect also fails to reach significance (effect = .0048, Boot SE = .0086, LLCI = -.0040, ULCI = .0334), so H4c is also not supported.

Table 5.15   Hypothesis H4c

Variables	DV: Employee satisfaction with learning opportunities.			
	b	*se*	*t*	*p*
Constant	2.4250	.7865	3.0832	.0025
Controls				
Perception of Change	.0604	.1169	.5166	.6063
OEFTP	.1313	.0773	1.6992	.0915
LIMFTP	-.0742	.0607	-1.2220	.2238
Age	.0071	.0069	1.0330	.3034
Mediator(s)				
GOAL	.0839	.0808	1.0388	.3007
IV				
POS	.0558	.0426	1.3096	.1924
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	.0558	.0426	-.0284	.1401
Indirect effect	.0048	.0086	-.0040	.0334

Note: Significant relationships in **bold**

The final group of hypotheses which test for mediation effects predict the relationships between respectively, OEFTP (H5a), LIMFTP (H5b) and frequency of employee positive emotional experience (H5c) with employee mental well-being, and with employee developmental goal orientation mediating each of these relationships.

Hypothesis H5a (Table 5.16) states that developmental goal orientation is positively related to employee mental well-being, and also mediates the relationship positive between employee OEFTP and employee mental well-being. The positive relationship between employee developmental goal orientation and mental well-being was significant ($b = 1.7257$, $t = 4.3510$, $p = .0000$) but the direct effect between OEFTP and employee mental well-being was not significant (effect = 1.0517, Boot SE = .7390, LLCI = -.4093, ULCI = 2.5127). However, the indirect effect via employee developmental goal orientation was significant (effect = .4825, Boot SE = .2665, LLCI = .0734, ULCI = 1.1544), thus mediation is demonstrated and H5a is supported.

Table 5.16   Hypothesis H5a

Variables	DV: Employee mental well-being			
	b	*se*	*t*	*p*
Constant	31.3075	7.5229	4.1616	.0001
Controls				
Perception of Change	-1.3698	1.1177	-1.2255	.2224
LIMFTP	-.9224	.5810	-1.5876	.1146
Age	**.2869**	**.0659**	**4.3510**	**.0000**
POS	-.0356	.4076	-.0872	.9306
Mediator(s)				
GOAL	**1.7257**	**.7729**	**2.2330**	**.0271**
IV				
OEFTP	1.0517	.7390	1.4231	.1569
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	1.0517	.7390	-.4093	2.5127
Indirect effect	**.4825**	**.2665**	**.0734**	**1.1544**

Note: Significant relationships in **bold**

Table 5.17 presents the results of hypothesis H5b, which predicted that employee developmental goal orientation would be positively related to employee mental well-being, and would mediate the negative relationship between employee LIMFTP and employee mental well-being. The positive relationship between employee developmental goal orientation and mental well-being is significant (*b* = 1.7257, *t* = 4.3510, *p* = .0000), but neither the direct effect of LIMFTP on employee mental well-being (effect = -.9224, Boot SE = .5810, LLCI = -2.0710, ULCI = .2262), nor the indirect effect (effect = .0124, Boot SE = .1065, LLCI = -.1684, UCLI = .2774) were significant (Table 5.17), so H5b is not supported.

Table 5.17   Hypothesis H5b

Variables	DV: Employee mental well-being			
	b	*se*	*t*	*p*
Constant	31.3075	7.5229	4.1616	.0001
Controls				
Perception of Change	-1.3698	1.1177	-1.2255	.2224
OEFTP	1.0517	.7390	1.4231	.1569
Age	**.2869**	**.0659**	**4.3510**	**.0000**
POS	-.0356	.4076	-.0872	.9306
Mediator(s)				
GOAL	**1.7257**	**.7729**	**2.2330**	**.0271**
IV				
LIMFTP	-.9224	.5810	-1.5876	.1146
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.9224	.5810	-2.0710	.2262
Indirect effect	.0124	.1065	-.1684	.2774

Note: Significant relationships in **bold**

The final hypothesis in this section, H5c, postulated that employee developmental goal orientation is positively related to employee mental well-being, and mediates the positive relationship between frequency of employee positive experience and mental well-being. As Table 5.18 shows, the relationship between employee goal orientation and employee mental well-being is positive and significant ($b = 1.7257$, $t = 2.2330$, $p = .0271$), but the direct (effect = -.0356, Boot SE = .4076, LLCI = -.8414, ULCI = .7703) and indirect effects (effect = .0981, Boot SE= .1128, LLCI = -.0279, ULCI = .4371) are both non-significant. Hypothesis H5c is therefore not supported.

Table 5.18   Hypothesis H5c

Variables	DV: Employee mental well-being			
	b	**se**	**t**	**p**
Constant	31.3075	7.5229	4.1616	.0001
Controls				
Perception of Change	-1.3698	1.1177	-1.2255	.2224
OEFTP	1.0517	.7390	1.4231	.1569
LIMFTP	-.9224	.5810	-1.5876	.1146
Age	**.2869**	**.0659**	**4.3510**	**.0000**
Mediator(s)				
GOAL	**1.7257**	**.7729**	**2.2330**	**.0271**
IV				
POS	-.0356	.4076	-.0872	.9306
Effects	**Effect**	**Boot SE**	**Boot LLCI**	**Boot ULCI**
Direct effect	-.0356	.4076	-.8414	.7703
Indirect effect	.0981	.1128	-.0279	.4371

Note: Significant relationships in **bold**

In summary, the results of the tests of mediation show mixed outcomes; there is no direct relationship between age and developmental goal orientation but rather the effect is indirect through OEFTP only (H2a) – there is no mediation effect through either LIMFTP (H2b) or frequency of employee positive emotional experience (H2c). There was no significant direct or indirect effect between OEFTP (H3a), LIMFTP (H3b), or employee emotional experience (H3c) and in-role performance behaviours, and similarly between OEFTP (H4a), LIMFTP (H4b), or employee emotional experience (H4c) and satisfaction with learning opportunities. Hypothesis H5a showed a mediation effect of employee development goal orientation between OEFTP and employee mental well-being, but not in the relationships between LIMFTP (H5b) or employee positive emotional experience (H5c) and mental well-being.

Tests of moderation

There were two groups of hypotheses relating to the moderation effect of perceived HRM system strength on the relationships between, respectively, OEFTP (H6a, H6b and H6c) and LIMFTP (H7a, H7b, and H7c), and developmental goal orientation. Each tests for the consequential effects on each of the three outcome variables (employee in-role performance behaviours (H6a and H7a), satisfaction with learning opportunities (H6b and H7b), and mental well-being (H6c and H7c)).

Hypothesis H6a predicted that the mediated relationship between employee OEFTP and employee in-role performance behaviours (IRB) would be moderated by perceptions of HRM system strength, and that this mediation effect would be stronger when perceptions of HRM system strength are high. Hypothesis H6b made a similar prediction, but with the dependent variable as employee satisfaction with learning opportunities (LJS), rather than employee in-role performance behaviours (IRB).

For each of these hypotheses, both the direct and the indirect paths are non-significant, the conditional indirect effects of OEFTP on, respectively, employee in-role behaviour (H6a) and satisfaction with learning opportunities (H6b) also fail to reach significance, and the index of moderated mediation (Hayes, 2015) is similarly non-significant. Therefore, neither H6a (Table 5.19) nor H6b (Table 5.20) is supported.

Table 5.19: Hypothesis H6a

Variable	Mediator: Development Goal Orientation (GOAL)				DV: Employee in-role behaviour (IRB)			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	6.9027	1.4548	4.7449	.0000	4.2235	.5616	7.5204	.0000
Controls								
LIMFTP	.0058	.0621	.0936	.9256	-.0329	.0434	-.7587	.4493
POS	.0661	.0434	1.5218	.1303	-.0329	.0304	-1.0800	.2820
CHANGE	-.0596	.1198	-.4971	.6199	-.0159	.0834	-.1901	.8495
AGE	-.0079	.0070	-1.1236	.2631	-.0031	.0049	-.6267	5319
Independent Variables								
OEFTP	-.4104	.2997	-1.3694	.1731	.0460	.0552	.8345	.4054
GOAL	n/a	n/a	n/a	n/a	.0061	.0577	.1056	.9160
Moderator								
HRMSS	-.8904	.4829	-1.8438	.0673				
OEFTP*HRMSS	**.2490**	**.1076**	**2.3147**	**.0221**				

Conditional indirect effects of OEFTP on IRB at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	Boot LLCI	Boot ULCI
GOAL (*M-1SD*)	2.2706	.0009	.0108	-.0185	.0270
GOAL (*M*)	2.8802	.0019	.0192	-.0373	.0397
GOAL (*M+1*SD)	3.4898	.0028	.0286	-.0536	.0598

Index of Moderated Mediation

GOAL		.0015	.0163	-.0294	.0370

Note: **Bold** indicates significant relationships

Table 5.20: Hypothesis H6b

Variable	Mediator: Development Goal Orientation (GOAL)				DV: Satisfaction with learning (LJS)			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	6.9027	1.4548	4.7449	.0000	2.4250	.7865	3.0832	.0025
Controls								
LIMFTP	.0058	.0621	.0936	.9256	-.0742	.0607	-1.2220	.2238
POS	.0661	.0434	1.5218	.1303	.0558	.0426	1.3096	.1924
CHANGE	-.0596	.1198	-.4974	.6199	.0604	.1169	.5166	.6063
AGE	-.0079	.0070	-1.1236	.2631	.0071	.0069	1.0330	.3034
Independent Variables								
OEFTP	-.4104	.2997	-1.3694	.1731	.1313	.0773	1.6992	.0915
GOAL	n/a	n/a	n/a	n/a	.0839	.0808	1.0388	.3007
Moderator								
HRMSS	-.8904	.4829	-1.8438	.0673				
OEFTP*HRMSS	**.2490**	**.1076**	**2.3147**	**.0221**				

Conditional indirect effects of OEFTP on LJS at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	BootLLCI	Boot ULCI
GOAL (*M*-1*SD)*	2.2706	.0130	.0195	-.0109	.0758
GOAL (*M*)	2.8802	.0258	.0319	-.0274	.1016
GOAL (*M+1*SD*)*	3.4898	.0385	.0467	-.0408	.1465

Index of Moderated Mediation

GOAL		.0209	.0269	-.0188	.0936

Note: **Bold** indicates significant relationships

Hypothesis H6c predicted that the mediated relationship between employee OEFTP and employee mental well-being (MCS) would be moderated by perceptions of HRM system strength on the relationship between OEFTP and developmental goal orientation, and that the mediation effect would be stronger when perceptions of HRM system strength are high. Analysis (Table 5.21) shows that the direct effect of OEFTP on MCS is not significant ($b = 1.0517$, $t = 1.4231$, $p = .1569$) but the indirect effect of GOAL on MCS is significant ($b = 1.5438$, $t = 2.1797$, $p = .0310$), indicating full mediation. The indirect conditional effects of OEFTP on MCS through GOAL at all values of the moderator are significant and are positive (GOAL *M-1SD:* Effect = .3134, Boot SE = .1876, Boot LLCI = .0478, Boot ULCI = .8335: GOAL *M*: Effect = .5569, Boot SE = .2616, Boot LLCI = .1256, Boot ULCI = 1.1802: GOAL *M+1SD*: Effect = .8003, Boot SE = .3902, Boot LLCI = .1538, Boot ULCI = 1.7157), and indicate that the higher the level of HRMSS, the greater the moderation effect. Thus H6c is supported.

Table 5.21 Hypothesis H6c

Variable	Mediator: Development Goal Orientation (GOAL)				DV: Mental Well-being (MCS)			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	7.0862	1.4612	4.8495	.0000	43.6488	6.9729	6.2598	.0000
Controls								
LIMFTP	.0308	.0639	.4818	.6307	-.3077	.5416	-.5681	.5709
NEG	-.0055	.0314	-.1760	.8606	-1.5304	.2560	-5.9793	.0000
CHANGE	-.0096	.1185	-.0806	.9358	-1.0359	.9997	-1.0363	.3019
AGE	-.0060	.0073	-.8316	.4071	.2028	.0612	3.3132	.0012
Independent Variables								
OEFTP	-.3822	.2990	-1.2782	.2033	1.0517	.7390	1.4231	.1569
GOAL	n/a	n/a	n/a	n/a	**1.5438**	**.7083**	**2.1797**	**.0310**
Moderator								
HRMSS	-.9902	.4837	-2.0470	.0426				
OEFTP*HRMSS	**.2584**	**.1082**	**2.3886**	**.0183**				

Conditional indirect effects of OEFTP on MCS at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	BootLLCI	Boot ULCI
GOAL (*M*-1*SD)*	**2.2646**	**.3134**	**.1876**	**.0478**	**.8335**
GOAL (*M*)	**2.8749**	**.5569**	**.2616**	**.1256**	**1.1804**
GOAL (*M+1*SD*)*	**3.4852**	**.8003**	**.3902**	**.1538**	**1.7157**

Index of moderated mediation

GOAL		**.4297**	**.2816**	**.0377**	**1.1884**

Note: **Bold** indicates significant relationships

Hypotheses H7a and H7b stated that the mediated relationship between employee limited FTP (LIMFTP) and, respectively, in-role performance behaviours (IRB: Table 5.22, H7a) and employee satisfaction with learning opportunities (LJS: Table 5.23, H7b) via developmental goal orientation would be moderated by perceptions of HRM system strength, and that the mediation effect would be weaker when perceptions of HRM system strength are high. Analysis showed that in neither case were the direct or the indirect paths significant, and the conditional effects of the moderator on the dependent variables also failed to reach significance, as did the index of moderated mediation, thus H7a and H7b are not supported.

Table 5.22 Hypothesis H7a

Variable	Mediator: Development Goal Orientation (GOAL)				DV: In-role performance behaviours			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	1.7965	1.3836	1.2984	.1963	4.2235	.5616	7.5204	.0000
Controls								
OEFTP	.2789	.0782	3.5658	.0005	.0460	.0552	.8345	.4054
POS	.0545	.0435	1.2523	.2125	-.0329	.0304	-1.0800	.2820
CHANGE	-.0440	.1200	-.3666	.7145	-.0159	.0834	-.1901	.8495
AGE	-.0102	.0070	-1.4446	.1508	-.0031	.0049	-.6267	.5319
Independent Variables								
LIMFTP	**.5765**	**.2799**	**2.0596**	**.0413**	-.0329	.0434	-.7587	.4493
GOAL	n/a	n/a	n/a	n/a	.0061	.0577	.1056	.9160
Moderator								
HRMSS	**.9748**	**.4136**	**2.3568**	**.0198**				
LIMFTP*HRMSS	**-.1982**	**.0954**	**-2.0772**	**.0396**				

Conditional indirect effects of LIMFTP on IRB at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	Boot LLCI	Boot ULCI
GOAL (*M*-1*SD)*	2.2706	.0008	.0088	-.0143	.0234
GOAL (*M*)	2.8802	.0000	.0034	-.0068	.0073
GOAL (*M+1*SD*)*	3.4898	-.0007	.0084	-.0197	.0155

Index of moderated mediation

GOAL		-.0012	.0130	-.0298	.0252

Note: **Bold** indicates significant relationships

Table 5.23 Hypothesis H7b

Variable	Mediator: Development Goal Orientation (GOAL)				DV: Employee satisfaction with learning (LJS)			
	b	*se*	*t*	*p*	*b*	*se*	*t*	*p*
Constant	1.7965	1.3839	1.2984	.1963	2.4250	.7865	3.0832	.0025
Controls								
OEFTP	.2789	.0782	3.5658	.0005	.1313	.0773	1.6992	.0915
POS	.0545	.0435	1.2523	.2125	.0558	.0426	1.3096	.1924
CHANGE	-.0440	.1200	-.3666	.7145	.0604	.1169	.5166	.6063
AGE	-.0102	.0070	-1.4446	.1508	.0071	.0773	1.6992	.0915
Independent Variables								
LIMFTP	**.5765**	**.2799**	**2.0596**	**.0413**	-.0742	.0607	-1.2220	.2238
GOAL	n/a/	n/a	n/a	n/a	.0839	.0808	1.0388	.3007
Moderator								
HRMSS	**.9748**	**.4136**	**2.3568**	**.0198**				
LIMFTP*HRMSS	**-.1982**	**.0954**	**-2.0772**	**.0396**				

Conditional indirect effects of LIMFTP on LJS at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	BootLLCI	Boot ULCI
GOAL (*M*-1*SD)*	2.2706	.0106	.0148	-.0086	.0604
GOAL (*M*)	2.8802	.0005	.0071	-.0105	.0215
GOAL (*M+1*SD*)*	3.4898	-.0097	.0132	-.0481	.0074

Index of moderated mediation

GOAL		-.0166	.0198	-.0655	.0153

Note: **Bold** indicates significant relationships

Table 5.24 Hypothesis H7c

Variable	Mediator: Development Goal Orientation (GOAL)				DV: Mental well-being			
	b	se	t	p	b	se	t	p
Constant	1.7965	1.3836	1.2984	.1963	31.3075	7.5229	4.1616	.0001
Controls								
OEFTP	.2789	.0782	3.5658	.0005	1.0517	.7390	1.4231	.1569
POS	.0545	.0435	1.2523	.2125	-.0356	.4076	-.0872	.9306
CHANGE	-.0440	.1200	-.3666	.7145	-1.3698	1.1177	-1.2255	.2224
AGE	-.0102	.0070	-1.4446	.1508	.2869	.0659	4.3510	.0000
Independent Variables								
LIMFTP	**.5765**	**.2799**	**2.0596**	**.0413**	-.9224	.5810	-1.5876	.1146
GOAL	n/a/	n/a	n/a	n/a	**1.7257**	**.7729**	**2.2330**	**.0271**
Moderator								
HRMSS	**.9748**	**.4136**	**2.3568**	**.0198**				
LIMFTP*HRMSS	**-.1982**	**.0954**	**-2.0772**	**.0396**				

Conditional indirect effects of LIMFTP on MCS at values of the Moderator

Mediator	HRMSS	Effect	Boot SE	Boot LLCI	Boot ULCI
GOAL (*M*-1*SD)*	2.2706	.2185	.1736	-.0087	.7397
GOAL (*M*)	2.8802	.0101	.1033	-.1550	.2895
GOAL (*M+1*SD*)*	3.4898	-.1984	.1481	-.6138	.0108

Index of moderated mediation

GOAL	**-.3420**	**.2034**	**-.9002**	**-.0382**

Note: **Bold** indicates significant relationships

The final hypothesis, H7c, stated that the mediated relationship between employee limited FTP (LIMFTP) and employee mental well-being (MCS: Table 5.24) via developmental goal orientation would be moderated by perceptions of HRM system strength, and that the mediation effect would be weaker when perceptions of HRM system strength are high. The data indicate that the direct path LIMFTP-> MCS is not significant (b=-.9224, t=-1.5876, p=.1146), but the indirect path GOAL -> MCS is significant (b=1.7257, t=2.2330, p=.0271), thus there is a mediation effect. However, the conditional indirect effects of LIMFTP on MCS, when calculated at + / - 1 *SD* while being negative as predicted, were not significant at any value of the moderator although the index of moderated mediation indicated moderated mediation was occurring. The criteria were then widened, and the conditional indirect effects recalculated using percentiles, (Table 5.25). A negative conditional indirect effect was found although this only became significant at the 90th percentile, indicating that there is moderated mediation but only at the very highest level of perceived HRM system strength, at which point the negative relationship between limited FTP (LIMFTP) and developmental goal orientation (DEV GOAL) becomes weaker e.g. less negative. Hypothesis H7c is therefore supported.

Table 5.25 Conditional indirect effects of LIMFTP on MCS at values of the moderator in percentiles

Mediator	HRMSS	Effect	Boot SE	Boot LLCI	Boot ULCI
GOAL (10th percentile)	2.0000	.3110	.2170	-.0040	.8925
GOAL (25th percentile)	2.5625	.1187	.1288	-.0533	.4792
GOAL (50th percentile)	2.9375	-.0095	.1019	-.2298	.1997
GOAL (75th percentile)	3.1875	-.0950	.1121	-.4106	.0658
GOAL (90th percentile)	**3.6875**	**-.2660**	**.1789**	**-.7492**	**-.0098**
		Index of moderated mediation			
GOAL		**-.3420**	**.2034**	**-.9002**	**-.0382**

Note: **Bold** indicates significant relationships

In summary, hypotheses H6a, H6b, H7a, and H7b were not supported because there was no significant direct or indirect relationships between the independent variables and the dependent variables and, unsurprisingly therefore, analysis indicated no moderation effect was present. Both of the relationships between, respectively, OEFTP (H6c) and LIMFTP (H7c), and employee mental well-being were mediated by employee developmental goal orientation, and both indicated moderated mediation in the predicted direction by perceived HRM system strength, although this was only present in the LIMFTP ->MCS pathway at very high levels whereas it was present at all levels for the OEFTP -> MCS pathway. Thus both hypotheses H6c and H7c were supported.

Discussion

Before it was possible to test the hypotheses, it was necessary to adapt the Delmotte et al., (2012) measure of perceptions of HRM system strength (Bowen & Ostroff, 2004) to suit the lower language and vocabulary skills of this sample. The Harkness (2014) TRAPD model of team translation was used to adapt the existing, rather complexly-worded, items to suit this

new sample profile, and CFA was carried out on the Study 2 data to confirm comparable model fit between the simplified version of the measure and the original. This was a worthwhile exercise, and this adapted measure collected data which provided evidence of a moderation effect in accordance with the hypothesised relationships, thus supporting the construct validity of the adapted items.

The results of Study 2 regarding the structure of future time perspective and its relationship with age in socioemotional selectivity theory are in accordance with Study 1, and serve to further validate the relationship between age and time perspective, and how this consequentially affects goal motivation across the lifespan. To confirm the relationships predicted by socioemotional selectivity theory, that as people grow older their focus increasingly changes from being developmentally-orientated to being more focused on goals which provide emotional satisfaction and enrichment, I based the analysis on the approach suggested by, for example, Cate & John (2007) and Kooij et al. (2013) and the results of Study 1, which sees future time perspective not as one continuous, bi-polar construct with high FTP at one extreme, and low FTP at the other (Carstensen, 1991, 1993, 1998; Carstensen et al., 1997; Fung et al., 2001; Lang & Carstensen, 2002), but as a two-factor construct, with independent factors of open-ended FTP and limited FTP, each of which has distinct and discrete relationships with age and with goal orientation. This two-factor structure was confirmed. In line with SST, I predicted that age would be negatively associated with open-ended FTP, and positively associated with limited FTP, and that older workers would be generally less motivated to achieving developmental goals than their younger colleagues. The results of both Study 1 and Study 2, indicate that there is no evidence that any focus on perceived limitations in the future is related to age, with only open-ended FTP having a significant relationship with age. In both studies, this may be explained by the age distribution of the sample; the oldest participant in Study 2 was 65

years (66 years in Study 1) and there is evidence (e.g. Cate & John, 2007) that age-related

increases in levels of LIMFTP occur much later in life than decreases in OEFTP. Thus in

middle-aged people, a pattern of being relatively low in both types of FTP is expected. Had

the sample included a greater number of older workers, and particularly those aged between

65 and 80, it is possible that a significant age-related increase in LIMFTP would have been

observed. However, from a practical perspective, although it is expected that numbers of

older workers remaining in the workforce will increase, it may still be the case that very old

workers (over 75 years) will still not be represented in great enough numbers for this to

assume a level of major importance.

The non-significant relationship between age and LIMFTP could also be explained by the

possibility that those older workers who do remain in the workforce are those for whom the

open-ended time perspective had reduced, thus supporting the age-related decline in OEFTP

but those workers whose time perspective has become markedly more limited as they have

aged have effectively de-selected themselves from the workforce through voluntary wastage

linked to an institutionalised pension system (Berglund, Seldén, & Halleröd, 2017), or as a

result of the healthy worker effect survivor bias (e.g. Arrighi & Hetrz-Piccioto, 1994;

Buckley, Keil, McGrath, & Edwards, 2015). This states that older people who remain

economically productive in the workforce are those whose health is good, and therefore they

are more likely to retain a greater focus on opportunities rather than perceiving limitations as

being dominant. A further factor which could have impacted on the time perspective of the

older workers could be the developmental climate which prevails in this case organisation;

those who have a dominant limited time perspective are likely to have a lower

developmental goal orientation, which will be incongruent with the organisational climate,

leading to goal incongruence and poor P-E fit (e.g. Zacher et al., 2014). Under such

conditions, self-deselection is likely to occur, increasing the proportion of developmental

goal-orientated individuals in the workforce. The positive relationship between perception of change and LIMFTP also fits with this notion, so that those workers who perceive high levels of change, and also have limited FTP, may have left the organisation because the strategic direction and expectations of the organisation were incongruent with their personal goals.

These latter influences may also account for the non-significant direct relationship between age and frequency of positive emotional experience; this is something which may affect the much older people that were not present in the sample. This finding supported the results of Study 1, which indicated that age was unrelated directly to any aspect of emotional experience, positive or negative. Moreover, not only did frequency of positive emotional experiences in employees in this study have no antecedent in age, neither did it predict any other of the dependent variables. This is clearly an area which warrants further investigation, as the relationships between age, time perspective and the positivity effect and their outcomes, while being well-explained theoretically in SST (e.g. Carstensen, 1993; Carstensen et al., 1999; Lang & Carstensen, 2002) do still result in equivocal results when tested empirically, especially during midlife (e.g. Heidemeier & Staudinger, 2015; Liao & Carstensen, 2018).

Socioemotional selectivity theory suggests that time perspective predicts goal orientation, and there is a plethora of research which has explored the consequences of this on a variety of outcome variables, including for example, job performance and job satisfaction (e.g. Farr et al., 1993; Van Yperen & Jansen, 2002), promotion focus (Kooij et al., 2014), affective organisational commitment (Armstrong-Stassen & Schlosser, 2007), challenge-seeking behaviours (Klein et al., 2006), and feedback-seeking behaviours (Chugtai & Buckley, 2008). My choice of outcome variables for this study sought to provide a broad spectrum of

outcomes, based on organisational and individual interests; in-role performance behaviours because there is a well-established body of literature addressing the many antecedents of effective job performance (Ng & Feldman, 2008); satisfaction with learning opportunities as a sub-category to job satisfaction (e.g. Schmidt, 2007), which again has a well-explored body of research , including exploring the effects of age on overall job satisfaction (e.g. Ng & Feldman, 2010), examining the difference relationships between age, and the cognitive and affective elements of job satisfaction. Finally, mental well-being because this is a critical issue on both an individual and an organisational basis; once again stress has been identified in the Chartered Institute of Personnel and Development's Annual Health and Well-being Survey Report amongst the top three causes of both long- and short-term absence from work, and the principal cause of long-term absence from work in over 20% of organisations (CIPD, 2018), with little sign of improvement in these statistics over the past few years. Of particular interest to this study, the top ten reasons identified as stressors include poor management, constant and poorly managed organisational change, pressure to meet deadlines and targets, and lack of employee support from line managers (CIPD, 2018). From the perspective of managing an aging workforce, my findings indicate that, in line with socioemotional selectivity theory, employees whose open-ended FTP is high also have high levels of developmental goal orientation, and better mental well-being. These findings add to the goal congruence and organisational change literatures in that they provide further evidence that those who see their future as full of opportunity will be orientated towards developmental goals, which in turn support the learning requirements associated with organisational change.

The results of the tests of mediation indicate mixed outcomes. On one hand, there was no evidence from either Study 1 or Study 2 that the age of individuals in any way directly influenced their emotional state, while both studies showed that generally younger people

are more likely to have an expansive view of their future. Study 2 found no direct relationship between workers' ages and their goal orientation. Moreover, there was no evidence that the age of a worker, their time perspective, or their goal orientation had any bearing on either their in-role performance behaviours or their satisfaction with the learning opportunities afforded them by their employer, and therefore these hypotheses were rejected. These results, which do not support the expected relationships predicted by socioemotional selectivity theory (Carstensen, 1992, 1993,1995; Carstensen & Charles, 1998; Carstensesn, Isaacowitz & Charles, 1999), could be the result of sample characteristics such as the sample size, which although it does meet the minimum criteria, is not large enough to develop a great deal of statistical power. Similarly, the sample characteristics could also be affecting these results – the sample does not include very old people, and some of the effects of SST are not expected to be observed until after middle age.

In contrast, there was evidence that a worker's time perspective affects their mental well-being through the mediating effect of goal orientation. The effect that time perspective has on goal orientation is in line with the framework of socioemotional selectivity theory, and supports the findings of the very many studies which have examined this in relation to, for example, motivation-related outcomes (de Lange et al., 2010), attitudes on learning and development (Kooij & Zacher, 2016), self-efficacy and performance (Bell & Kozlowski, 2002), and health promotion attitudes (Zhang et al., 2009).

Mental health is important, both to individuals and to organisations. The negative effects of poor mental health collectively cost UK employers up to £42bn a year, and the UK economy between £73bn and £99bn each year (Stevenson & Farmer, 2017). During periods of organisational change, or constantly if change is constant, there may be negative effects on the mental well-being of employees; an organisation's need to adapt to changes in its

environment may be critical to their ability to compete (e.g, Yu, 2009). However, change is neither simple nor painless for those affected, and organisational change may be the greatest source of stress in a person's career, and possibly their entire life (e.g, Hellriegel, Slocum & Woodman, 2001; Schweiger and DeNisi, 1991). Primary sources of poor mental well-being have been identified (CIPD, 2018) as including poor management and aspects of organisational change, so it is critical that these causes are addressed in order to support the mental health and well-being of employees, particularly when their perceptions of organisational change are high. SST (Carstensen 1991, 1993, 1995; Carstensen, Isaacowitz & Charles, 1999) and goal congruence theory (for a review, see Schmidt, 2010) offers an explanation for this change-related stress, through the conflicts between a dominant personal emotionally-focused goal orientation and the need to learn in order to support organisational goals and bring about organisational change. Where constant change is the norm, as in the case organisation in which Study 2 took place, burnout and change-fatigue may be common as demand outstrips supply of adaptive resource (Miller et al., 2010). Logically, those whose adaptive resource levels are already lower because of their life stage goal orientation will potentially be particularly badly affected by this.

Previous studies have found that time perspective can be changed by the anticipation of various life events (e.g. Carstensen & Fredrickson, 1998; Fung et al.,1999, 2001, Löckenhoff & Carstensen, 2004) as well as the natural process of aging during which increasing awareness of 'time running out' causes the age related change. These life events may be real e.g. failing health or relocation, or artificially induced by asking people to think about an ending immediately prior to measuring their FTP. Results from the tests of moderated mediation in this study indicate that the relationship between time perspective and goal orientation can also be changed by external factors, and in particular by perceptions formed on the basis of lived experience, a notion previously untested; the relationships between both

open-ended FTP and limited FTP and goal orientation were moderated by perceptions of HRM system strength (Bowen & Ostroff, 2004), and this consequentially affected employee well-being, by strengthening the positive relationship between open-ended future time perspective and a developmental goal orientation, and weakening the negative relationship between limited future time perspective and a developmental goal orientation. This latter effect was only found at very high levels of perceived HRM system strength, however.

Bowen & Ostroff's (2004) construct of perceived HRM system strength focused on how HRM processes, rather than just practices, are perceived by employees. In the case organisation, like many organisations, line managers deliver devolved HRM to their direct reports, so it is the perception how that is done which will finally determine the perception of the strength of the HRM system. Bowen & Ostroff (2004) argued that there are three meta-features to HRM system strength; distinctiveness, consistency and consensus. If all three are present, then employees perceive the HRM system as communicating their intended effects, are relevant to themselves and their personal goals, are consistently delivered , and that the outcomes are fair. The results of Study 2 indicate that the stronger the employees perceived the strength of the HRM system to be, the more developmental their goal orientation became, and consequently the better their mental well-being. This effect was observed in both those with a dominant open-ended time perspective, and also those dominant time perspective was more limited, although in this latter group the effect was only observed at the very highest level of HRM system strength (90th percentile). In younger people, who according to SST, whose time perspective is likely to be more open-ended and as a result their goal orientation more developmental, their perception of the support they receive from, and the way HRM processes are delivered, by their line manager will further enhance their developmental goal orientation and thus their mental well-being. The effect for those who have limited FTP, who according to SST are likely to be older (although this relationship

was not found in this study) serves to reduce the effect of the negative relationship between limited FTP and developmental goal orientation. In reality, this means that when older workers perceive that HRM system strength is high, and that their personal and support needs are understood and being met by their line manager, this will slow down, halt, or possibly even reverse the transition from being developmentally-orientated to being more emotionally-orientated, and consequentially their mental well-being will also be supported and possibly improved. This is potentially (although not conclusively as this was not tested for in this study) because of lower or lowered goal incongruence and goal conflict across change, and therefore when change-related learning demands are high.

Limitations and avenues for future research

While some of the findings in this study are in line with the general tenets of socioemotional selectivity theory and therefore contribute to our understanding of how aging affects workers psychologically, there are also notable departures, and further research is required to explore these differences, to determine whether they are a function of the sample characteristics (Podsakoff et al., 2003) or perhaps of the characteristics of the case organisation itself. The size of the sample may also have affected the power of the statistical analysis, leading to Type II error. Furthermore, the data was gathered from only one organisation, so any effects of organisational factors such as climate (Jones & James, 1979) cannot be ruled out. Additionally, with the exception of age all other variables other than in-role performance behaviours (which was rated by the workers' line managers) were rated by the workers themselves, including the mediators, moderator and the outcome variables, and therefore potentially suffer from common rater bias (Podsakoff et al., 2003). Future research should use a larger sample size and one with a wider age range to draw in data for the oldest workers, and identify and utilise additional objective measures such as intracompany survey results, or absence data, to triangulate results.

While this study is one of the first to examine the role of moderators within the framework of socioemotional selectivity theory, the choice of outcome variables in this study is limited, and it is necessary to extend the principle to other outcome variables to seek confirmation and validation of the moderated mediation effect with other significant outcome variables.

Future research should also explore the effect of other demographic characteristics other than age; disability, mental health, or conditions such as autism spectrum disorders also have the potential to change time perspective, and it would be valuable to see if the same effects are observable in different populations. It would also be useful to explore the role, if any, of gender, in the relationships as it was considered possible (Cheung & Tang, 2010; Johnson & Spector, 2007) that this could be an influencer in emotional responses.

Chapter Conclusion

This chapter firstly outlined the method used to adapt the Delmotte et al., (2012) measure of perceptions of HRM system strength for a less literate sample, including the methods used to validate and test the adapted items.

In this study, hypotheses of main effects, mediation, and moderated mediation were tested, with the result showing that some, but not all, of the expected relationships predicted by socioemotional selectivity theory (Carstensen 1991, 1993, 1995; Carstensen, Isaacowitz & Charles, 1999) were present in the data. The two-factor structure of future time perspective, in agreement with the findings of Study 1, was confirmed and this was then used to explore the differences that these two constituents of FTP made to goal orientation, and the outcome variables.

The tests of mediation similarly returned mixed results; significant relationships were found in the pathway to employee mental well-being, but not to either employee in-role performance behaviours, or to employee satisfaction with learning opportunities.

Finally, it was demonstrated that employee perceptions of HRM system strength moderate the relationship between future time perspective and a developmental goal orientation with high levels of perceived HRM system strength increasing levels of developmental goal motivation in both those workers with a dominant open-ended FTP, and those with a dominant limited FTP.

CHAPTER 6 SUMMARY OF THESIS AND CONCLUSION

6.1. Chapter introduction

This final chapter of the thesis contains a general discussion which brings together the key messages from both studies. It begins with a brief summary of the findings from the two studies, and then discusses their limitations and some useful avenues for further investigation. The contributions this work makes to theory, methodological matters and practical implications follow, before the final overall conclusions.

6.2. Summary of findings

This thesis was framed in socioemotional selectivity theory (Carstensen, 1991, 1993, 1995; Carstensen, Isaacowitz & Charles, 1999), which was used to explore and explain the conditions under which age-related psychological change occurs. It confirmed the structure of future time perspective as a two-factor construct, one factor with a focus on opportunities, and the other on limitations (e.g. Cate &John, 2007; Cozzolino et al., 2009; Kooij et al., 2013), and the inter-relationships between age, time perspective, positivity and goal orientation were measured within the SST framework, and the effect on three outcomes (in-role performance behaviours, satisfaction with learning opportunities, and mental well-being) was assessed. I integrated perceptions of HRM system strength (Bowen & Ostroff, 2004) into the framework as a moderating influence, and demonstrated that it is possible to modify the relationship between time perspective and goal orientation by increasing the level of developmental goal orientation, and therefore with consequential positive effects on employee mental well-being.

In order to undertake these investigations, it was first necessary to develop survey-based instruments to measure emotional experience and goal orientation which was the objective of Study 1, and to adapt the existing measure of perceptions of HRM system strength for a less literate sample (within Study 2). The survey-based measure of emotional experience

(Study 1) successfully adapted the diary study method previously used by Carstensen et al., (2000), asking instead for participants to recall their emotional experiences for the week immediately prior to completing the survey. Using the two-factor model of FTP, positive relationships were found between open-ended FTP and both frequency and intensity of positive emotions; those who see their future as opportunity-filled are more likely to be optimistic than those who see their future as limited. When age is also included in this model, however, the relationships through OEFTP to emotional experience are not in the expected direction – younger people, who should score higher on OEFTP, are postulated by the positivity effect (Carstensen, 2006; Charles et al., 2003) to be generally more pessimistic, but this was not found. Conversely, the relationships between limited FTP and emotional experience were in the expected direction according to SST, with high levels of limited FTP being associated with lower levels of negative emotional experience, although the relationship between age and limited FTP was not significant. However, the factor structure of the measure was clear, with loadings onto positive and negative factors.

The development of a survey-based instrument to measure goal orientation, in accordance with SST, was not successful. Using EFA and CFA, only three valid factors emerged, and although two of these were reasonably well-defined and the items loaded onto the factors in accordance with the card-sorting method previously used by Lang & Carstnsen (2002), the remaining data was chaotic and had no discernible structure. This made it necessary to use a different measure of goal orientation in Study 2, and thus three items from Kooij et al., (2013) were used. These items measure growth goal orientation, and were taken from the Warr, Cook & Warr (1979) scale measuring higher order needs, and provided an acceptable alternative, although there is clearly an opportunity for further work to develop the survey-based measure.

The adaptation of the Delmotte et al., (2012) measure of perception of HRM system strength was also successful, and was validated during Study 2. This used a team-based method (Harkness et al., 2010) to adapt and validate the items. CFA indicated a successful adaptation of the original items to suit a less literate audience than the original populations on which Delmotte and his colleagues developed and tested their scale

Tests of mediation indicated that only time perspective had significant relationships with goal orientation, and only employee mental well-being was a significant direct or indirect outcome of goal orientation. My prediction that these mediation effects could and would be moderated by employee perception of HRM system strength proved correct in Study 2; employees who perceived a strong HRM system strength reported higher levels of developmental goal orientation and thus better mental well-being than those who perceived less strong system strength, and this moderation effect was stronger when HRM system strength was higher. This was observed in both those who were dominant in open-ended FTP and in limited FTP, although in this latter category the prediction was reversed, with HRM system strength weakening the negative relationship between limited FTP and developmental goal orientation. However, the effect was the same at all levels of developmental goal orientation. In those who were high in limited FTP, the moderation effect was detectible only at very high levels of HRM system strength (the 90th percentile).

Limitations and avenues for future research

As with all studies, this thesis has its limitations. First, the studies were cross-sectional, and with all research of this nature it is therefore not possible in many cases to reach absolute certainty about the direction of the relationships found on the basis of just one study. For example, in Study 2 the relationship between goal orientation and mental well-being could follow reversed, or even reciprocal relationships, and therefore mental well-being or

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performance could act as predictors of motivation and goal orientation. However, giving strength to the design of the study, previous longitudinal research (e.g. Baker, 2003; Dysvik & Kuvas, 2013) has supported the notion that motivation is the predictor of later levels of well-being and performance, rather than the other way round. However, longitudinal studies to examine and confirm the causal links found in this thesis will be useful. These would allow the influence of perceptions of change to be evaluated, and the effects of the change measured across the study. In this study, perceptions of change was measured, but had very few correlations with any other variables, so it was retained in the model as a control only. The role of perceptions of change should be more thoroughly investigated in future studies.

The cross-sectional mono-source design of the study also poses methodological challenges (Podsakoff et al., 2003) because the data was gathered at the same time, and using a common questionnaire, thus introducing the possibility of common method / source bias. However, this is reduced as the data which was used in the analysis was an amalgamation of data from colleagues and their supervisor. Moreover, the effect of common source / method variance does not invalidate any interactions found, but risks reducing the effect sizes of these (McClelland & Judd, 1993).

Second, the respondents in each case were drawn from a single case organisation, with its own distinct organisational climate and characteristics. The samples, while being broad representations of the UK workforce still nevertheless carry biases such as in gender, age and levels of seniority and qualification / literacy. The use of multiple discrete sites for the case organisation in study 2 will have limited this and is a strength of the study, as each site is likely to have its own microclimate which will have been driven by the site leadership, and by the demands of the client. However, future research should therefore seek to replicate the findings across a multiple-organisation sample, or to have a large enough sample in a

multiple-site organisation to be able to carry out separate analysis for each site, as well as for the organisation as a whole.

Third, there is a risk of socially desirable responding (Crowne & Marlowe, 1964) in Study 2, both by colleagues when asked for their opinions about their line manager, and by line managers when asked about their direct reports' performance. To ameliorate this, every effort was made to reinforce that the responses were completely confidential, and would not be shared with anyone outside the research team. In a similar vein, leniency biases could be affecting responses, where participants rate more highly those people whom they know and like (Guilford, 1954). Similarly, in Study 1 the participant information expressly explained that the study was about age-related change, which may have introduced an element of response priming, with people choosing responses to either deny any age-effects, or to be influenced by self-stereotyping. However, despite these considerations, there is no evidence that these issues have been problematic.

Another limitation is the sample size in Study 2, which was restricted because of the need to link colleague and supervisor questionnaires, and there were a large number of 'orphaned' colleague questionnaires and even more 'childless' supervisor questionnaires. The sample size, at 151, and with nine variables in the conceptual model meets the requirements of the rule used by many researchers that the sample size should not be less than 10*(number of variables) (Harris, 2001). However, a greater number of participants per variable is desirable to increase the statistical power and to better detect small effect sizes, and 30 per variable is recommended (Cohen, 1988). This may cast doubt on the accuracy of some of the non-significant findings, and made it impossible to split the sample into sub-categories to demonstrate cohort differences e.g. gender, age.

The possibility of selection bias must be considered. It has been pointed out that older employees whose health is less robust may have self-deselected from the workforce, and are therefore not fully represented in the sample. If this were not the case, and the sample included a representative proportion of older, unwell people, one could expect the measured level of limited future time perspective to increase, because these people are more likely to regard their future and the opportunities it brings as being more limited by their health. Similarly, their overall life experience is likely to be less positive, and I would expect them to report more negative motional experiences. In themselves, these differences would not change the relationships between future time perspective and positive experience, and goal orientation; I would expect the relationships to be in the same direction as found in this work. However, the fact that many older, unwell people are not represented in the sample could be one reason why the expected correlation between age and limited future time perspective was not found. The hypothesised relationships between developmental goal orientation and the outcome variables, all of which were predicted to be positive, would logically be unaffected, because even if it was found that more people were low in developmental goal orientation, then their measured levels of the outcome variables would simply be correspondingly low, but the relationships would still be in the same direction.

It would be valuable to replicate Study 2, in a larger organisation which will potentially yield a larger sample, and also in a multi-organisational context to increase the generalisability of the findings. Further, although the focus of this study is the support and management of the increasing number of older workers in the workforce, it would also be extremely valuable and pertinent to extend this work to other demographic groups whose characteristics affect their time perspective. The theoretical and practical implications of this work could therefore be applied to other groups.

For the future, further investigation into the relationship between age and the independent factors of time perspective is warranted; the results obtained are not completely in accordance with SST because no relationships were found between age and any of the hypothesised variables within SST, other than open-ended future time perspective. These anomalies should be investigated. Similarly, the relationships between age, the facets of FTP and the positivity effect should be further explored, to determine the direction of causality between these variables . This mirrors the call for further work from Liao & Carstensen, (2018), who point out that the 'body of empirical evidence amassed over the last 25 years supports some aspects of SST and challenges others' (p. 166).

My work on developing a measure for goal orientation as conceptualised within SST should be continued and extended; the results of Study 1, though not successful in producing a measure that could be used in Study2, did show some promise as two of the four factors were well-defined. The completion and validation of a scale to measure goal orientation within SST would complete the instruments necessary to fully operationalise SST, which is currently not possible. For this work, I would return to the methods advocated by Hinkin (1998) and start by developing items from scratch, as I feel that the wording of some of the items from the Lang & Carstensen (2002) measure was vague, and may have contributed to the anomalous findings of Study 1.

Finally, it was the original intention when planning this thesis that the focus of it would be how organisational change affects older workers, and whether or not it is possible to minimise any adverse effects on their levels of performance, satisfaction with the learning opportunities provided by their employer, or their mental well-being. This was originally designed as a longitudinal study using SST and perceptions of HRM system strength as a framework to quantify and explain the effects of the change, by measuring before and after a

change event. In the event, it was not possible to do this, because a suitable case organisation was not available within the necessary time frame. However, to repeat the study as a longitudinal study across a defined organisational change, to measure and highlight changes in performance, learning satisfaction, and mental well-being and to correlate these to how employees the strength of the HRM system while negotiating a path through a difficult organisational period would be extremely interesting and potentially valuable, both from a theoretical standpoint, and to provide guidance for organisations about how to support their older workers through change.

6.3. Contributions

Theoretical contributions

By linking socioemotional selectivity theory (Carstensen, 1991, 1993, 1995; Carstensen & Charles, 1998; Carstensen et al., 1999) with perceived HRM system strength (Bowen &Ostroff, 2004), this study extends and expands the work of the many scholars who have contributed to the body of literature around SST. Specifically, the study introduces and demonstrates that the relationships suggested within SST are not fixed, and that changes in future time perspective do not necessarily mean an inevitable corresponding change in goal orientation – this effect can be modified. The modification of future time perspective (and consequently, goal orientation) has been demonstrated several times by Carstensen and her colleagues, who have shown that these changes may be brought about by many external occurrences, such as deteriorating health (Carstensen & Fredrickson, 1998), graduation from college and leaving friends (Fredrickson, 1995), and relocation (Fung, Lai & Ng, 2001). This study contributes to this literature, by demonstrating that the effects of external influences can be observed at other points in the mediation model in SST, of age →future time perspective →goal orientation. These findings speak to scholars of aging, and the psychology of aging.

This study also contributes to the body of literature which discusses the effects of perceived HR system strength (PHRSS: Bowen & Ostroff, 2004), and HRM in general. Other studies have shown that PHRSS is positively related to several individual outcomes, such as citizenship behaviours (Katou, Budhwar & Patel, 2014), organisational change (Alfes et al., 2019), and willingness to help coworkers (Frenkel & Yu, 2011), and is negatively related to individual mental well-being (Frenkel, Li & Restubog, 2012). This study firmly places goal orientation as another factor which may be influenced by a strong HR system. This is of interest to both HRM scholars as well as HRM practitioners.

This study has thirdly contributed to the literature in the domain of older worker management, motivation, and mental well-being thus extending the conceptual work of Bal et al., (2013) and Vantilborgh et al., (2014). This was achieved by demonstrating the effects of SST in a mediation model which extends from age through to individual-level mental well-being via future time perspective and goal orientation, thus contributing to knowledge about how to preserve and maintain the mental health of workers. This provides valuable information for HRM practitioners and line mangers who manage older workers, by contextualising the effects and changes they may see in their direct reports, by helping to dispel negative stereotypes about older workers, and by enabling them to strategically manage these changes.

Finally, this thesis has contributed to the body of work which addresses work-related stress and the potential negative impacts of organisational change, by conceptually linking the change in goal orientation which occurs with age, with the negative effects of goal incongruence (Schmidt, 2010). Although this was a cross-sectional study, and therefore change has not been measured, the conceptual contribution is valuable to scholars of stress and mental well-being, and for HRM practitioners who have an interest in delivering healthy

change for all workers, not just the older ones. This is important because organisational

change is a major source of employee stress (CIPD, 2018), and which may lead to increased

staff churn (e.g. Allisey et al., 2014; Elangovan, 2001; Firth et al., 2004), lower levels of

productivity (e.g. Alam, 2016; Banerjee & Mehta, 2016; Vagg & Spielberger, 1998), and

increases in stress-related absence (Colligan & Higgin, 2006; Jacobson et al., 1996;

Westman & Etzion, 2001).

Empirical contributions

As far as can be established, no previous study has empirically tested socioemotional

selectivity theory by measuring its effects from age through to outcome variables. There are

a number of studies (e.g. Bal et al., 2013; Drabe et al., 2015; Hammond et al, 2017; Hyun et

al., 2017, Johnson et al., 2013; Vantilborgh et al., 2014; Zaniboni et al., 2013) which have

used the theory conceptually, to frame their work, or to empirically test sections of it (for

example, the relationship between age and FTP). To my best knowledge, this study is the

first time that age, SST and outcome variables have been empirically tested using

organisational data. Although not all the hypotheses were supported, this study nevertheless

begins this work, which will be of interest to scholars carrying out organisational HRM

research.

Methodological contributions

The first methodological contribution of this thesis lies in the development of a survey-based

measurement instrument for positivity. The previously-used diary study (Carstensen et al.,

2000) was not a feasible instrument to use in large-scale surveys, because it relied on

participants responding to a pager at random times over a seven-day period, Therefore this

was adapted and validated as a survey-based instrument, which asks respondents to recall

their emotional experience over the same seven-day period, thus providing a cost-effective

and user-friendly measure of positivity which may be incorporated into surveys examining

aspects of socioemotional responding. This contribution will be of interest to organisational

HRM researchers, who now have the ability to measure the positivity effect empirically. This may be important to researchers, as logically, if older people respond more favourably, then it may be argued that this should be controlled for in any study, to isolate any bias introduced by positive responding as a result of this effect.

The second methodological contribution is the adaptation of the Delmotte et al., (2012) scale of perceived HRM system strength. Delmotte et al.'s (2012) scale was developed using two samples of higher educational attainment than average, and certainly higher than might be expected to be found in many lower skilled roles. The items were couched in complex terms and many were unlikely to be understood by any but the most highly-educated – indeed, three items were dropped because nobody on the adaptation team of academics clearly understood the statements' meanings! This work now makes it possible for researchers to measure perceived HR system strength with any adult working population.

Practical contributions

This work offers a number of valuable insights for practitioners. With the increase in the number of older workers remaining in active employment in recent years, a trend which is expected to continue in the future, it is imperative that the needs and aspirations of this group are understood and met, if they are to remain motivated, productive and healthy. First, the increased insight into the psychological processes and changes that occur with age provide valuable information about the motivation and thus the direction of effort which older workers are more likely to adopt, and the potential impact this has for organisations in terms of the consequential effects on mental well-being. Although in this study the hypotheses relating to in-role performance behaviours and satisfaction with learning opportunities were non-significant, from a practitioner perspective the theoretical relationships are still valid and should be considered.

It is not only HRM and HRD professionals who will benefit from this work, but also line managers as the agents who deliver devolved HRM processes. Therefore the findings from this study should form an important element to line manager learning and training, and thus form an integral part of leadership and management education in the organisation by providing empirical evidence of how the line manager's actions and attitudes directly affect their reports, in terms of their mental well-being. The findings apply to all colleagues, not just those who are older, although this latter group who are naturally more focused on the limitations they perceive do present the biggest challenge as the findings indicate that the level of perceived HRM system strength does have to be very high for there to be a moderation effect. However, because their focus is already more on their perceived limitations, this does also present potentially the greatest benefit if this focus can be reduced and thus their mental well-being protected or improved.

Additionally, this work provides support to counter the negative effects of ageism and negative age stereotyping; no negative relationships were found between age and either in-role performance behaviours or satisfaction with learning, and this can be used to dispel negative attitudes about work performance being detrimentally affected by age, or that older workers and learners have no interest, and thus derive no satisfaction from, learning.

Finally, the findings in this thesis can potentially be applied to other demographic groups in the workforce. Although this does require further confirmatory investigation, logically and drawing on the notion that time perspective is plastic and can be changed by influences other than age (e.g. Carstensen , 2006), then any person in the workforce whose FTP is affected by some characteristic or life circumstance will be similarly affected as the older workers in this thesis. Therefore those who have poor health, or any other condition which presents limitations stand to benefit from the application of the findings of this thesis.

6.4. Conclusion

As the proportion of older workers in the workforce increases, it becomes a critical issue for organisations to understand how to best support and motivate this growing group. This thesis addressed theoretical, empirical and methodological gaps. This was accomplished by proposing a framework which integrated the concepts of socioemotional selectivity (Carstensen, 1991, 1993, 1995; Carstensen & Charles, 1998; Carstensen et al., 1999) with those of human resource management system strength (Bowen & Ostroff, 2004) as perceived by employees, facilitated by the development and adaptation of survey-based methods to reliably measure these constructs in a sample of less well-educated employees in a multi-outlet warehousing and e-fulfilment organisation.

In what is the first such study of this type, to empirically test the elements of SST and combine these with organisationally-important outcome variables, evidence that line managers play a critical role in maintaining the mental well-being of older workers by the way in which they implement HR policies and practices is presented. This is to develop a climate in which perceptions of the HR system are strong, and therefore the interaction effect found in this study can be optimised. Drawing on these findings practitioners can further their comprehension of the support needs and aspirations of the increasing number of older workers for whom they have line management responsibility.

In conclusion, this thesis has added to the knowledge of the motivation, management, and mental well-being of older workers through the application of a novel integration of two constructs, of socioemotional selectivity theory and perceived HRM system strength.

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APPENDICES

1. Appendix A: Scale Items used in Study 2

Perception of change

The following items from Caldwell, Herold & Fedor (2004) were used to measure

perceptions of change in the case organisation.

Item
'Thinking about the last 3 months, as a result of changes at work ……'
Individual job impact:
1 – I am expected to do more work than I used to
2 – The nature of my work has changed
3 – My job responsibilities have changed
4 – I find greater demands on me at work because things have changed
5 – I am experiencing more pressure at work because things have changed
6 – The work processes and procedures I use have changed
The working environment:
7 – My working environment has changed
Values – Congruence (Person-Organisation) fit
8 – My personal values better match the [organisation] values
9 - My personal values and those of [organisation] have become more similar

The SF-12v2® Health Survey

The following items were used to measure the overall physical and mental health of

participants:

The questions in this section ask about your health. This information will help me to see how much your feelings about life in general are affected by how you feel about your health.

For each of the following questions, please tick the ONE box that <u>best describes</u> your answer.

11. In general, would you say your health is:

Excellent	Very Good	Good	Fair	Poor
○	○	○	○	○

12. The following questions are about activities you might do during a typical day. Does *your health now limit you* in these activities? If so, how much?

	Yes, I am limited A LOT	Yes. I am limited A LITTLE	No, I am NOT LIMITED AT ALL
Moderate activities, such as moving a table, pushing a vaccuum cleaner, bowling or playing golf?	○	○	○
Climbing *several* flights of stairs?	○	○	○

13. During the *past 4 weeks* how much of the time have you had any of the following problems with your work or other regular daily activity *as a result of your <u>physical</u> health?*

	ALL of the time	MOST of the time	SOME of the time	A LITTLE of the time	NONE of the time
Accomplished less than you would like	○	○	○	○	○
Were limited in the *kind* of work or other activities	○	○	○	○	○

14. During the *past 4 weeks*, how much of the time have you had any of the following problems with your work or other regular daily activities *as a result of any <u>emotional</u> problems* (such as feeling depressed or anxious) ?

	ALL of the time	MOST of the time	SOME of the time	A LITTLE of the time	NONE of the time
Accomplished *less* than you would have liked	○	○	○	○	○
Did work or other activities *less carefully* than usual	○	○	○	○	○

15. During the *past 4 weeks* how much did **pain** interfere with your normal work (including both work outside the home, and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
○	○	○	○	○

16. These questions are about how you feel and how things have been with you *during the past 4 weeks*. For each question, please give the ONE answer that comes closest to the way you have been feeling. How much of the time *during the past 4 weeks.....*

	ALL of the time	MOST of the time	SOME of the time	A LITTLE of the time	NONE of the time
.... have you felt calm and peaceful?	○	○	○	○	○
.... did you have a lot of energy?	○	○	○	○	○
.... have you felt downhearted and depressed?	○	○	○	○	○

17. During *the past 4 weeks* how much of the time has your *physical health OR emotional problems* interfered with your social activities (like visiting friends, relatives etc.)?

ALL of the time	MOST of the time	SOME of the time	A LITTLE of the time	NONE of the time
○	○	○	○	○

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Future time perspective (FTP)

The following items were used to measure the future time perspective of participants. Items 1 – 3 focus on perceptions of future opportunities, and items 4-5 on the future as limited. The items are derived from the Lang & Carstensen (1996) measure of FTP.

Item
'This section will help me to understand how you are feeling about your future life'
1 – Many opportunities await me in the future
2 – Most of my life lies ahead of me
3 – My future seems infinite to me
4 – I have the sense that time is running out (reverse coded)
5 – As I get older, I begin to experience time as limited (reverse coded)

Performance

These items, based on Williams & Anderson (1991) were used to measure in-role

performance-related behaviours of respondents:

Item
Respondents were asked to select the answer which they felt best represented how they felt the particular team member had performed in the previous 3 months
1 – They adequately complete their assigned duties
2 – They fulfil the responsibilities specified in their job description
3 – They perform the tasks that are expected of them
4 – They meet the formal performance requirements of their job
5 – They engage in activities what will directly affect their performance evaluation
6 – They neglect aspects of their job that they are obligated to perform (reverse coded)
7 – They fail to perform essential duties (reverse coded)

Human Resource Management system strength (adapted items, based on Delmotte et al., 2012)

The items used to measure HRM system strength were:

Item

Respondents were asked to read each statement and indicate how much they agreed or disagreed with each one:

Items measuring Distinctiveness

1 – The HR Department undertakes exactly those actions that meet our needs

2 – My supervisor provides an excellent standard of people management practice

3 – Many of the practices introduced by the HR Department are useless (reverse coded)

4 – Most employees have no idea what the HR Department actually does (reverse coded)

5 – I often wonder about how useful some people management practices are (reverse coded)

6 – In my experience, people management practices at work are relevant to my needs

7 – At [organisation], the HR Department makes a valuable contribution

8 – I am regularly told about what the HR Department are doing and planning

9 – HR plays a role in making decisions about the future of the organisation

10 – Generally, the work done by the people in the HR Department is appreciated

11 – The HR Department is too much in the background instead of being there where the work really goes on (reverse coded)

Items Measuring Consensus

12 – At [organisation], rewards are clearly related to performance

13 – I think promotions are made fairly

14 – At [organisation]the results of the Performance Reviews are considered fair

15 – My supervisor regularly makes decisions based on favouritism (reverse coded)

16 – Some people at [organisation] get treated better because they are friends with their Supervisor (reverse coded)

17 – I think the way rewards are given is seen as fair

18 – Supervisors make decisions based on facts rather than feelings

19 – If employees perform well, they get the necessary recognition and rewards

20 – The HR Department and my Supervisor are clearly on the same wavelength

21 – All Supervisors in [organisation] mutually agree with the way in which employees are managed

Items Measuring Consistency

22 – The people management practices implemented in [organisation] sound good in theory but do not work in practice (reverse coded)

23 – The people management practices at [organisation] do not contribute to employee motivation (reverse coded)

24 – At [organisation] HR initiatives often swap and change what they are trying to achieve (reverse coded)

25 – There is a wide gap between the intended and the actual effects of people management initiatives (reverse coded)

26 – The Supervisors' people management practices do not succeed in actively changing employee behaviour (reverse coded)

27 – The various HR initiatives send changeable signals (reverse coded)

28 – The suggestions, procedures and practices developed by the HR Department actually add value to the functioning of [organisation]

29 – The Performance Review process used helps me to understand how I should behave and work

30 – At [organisation], HR policy changes every other minute (reverse coded)

31 – We get better pay and benefits when we work in the way [organisation] wants us to.

32 – The Performance Management process causes different effects from what it was designed to do (reverse coded)

33 – At [organisation], people management practice closely matches HR policy

2. Appendix B: Scale items used in Study 1

Emotional experience and intensity scale, based on Carstensen et al., (2000)

These are the 19 emotions used by Carstensen et al., (2000) in their study of emotional experience and intensity.

Item

The emotions upon which participants were asked to reflect and report how often and how intensely they had felt them over the previous 7 days were:

Negative Emotions	*Positive Emotions*
Anger	Happiness
Sadness	Joy
Fear	Contentment
Disgust	Excitement
Guilt	Pride
Embarrassment	Accomplishment
Shame	Interest
Anxiety	Amusement
Irritation	
Frustration	
Boredom	

Future time perspective (Carstensen & Lang, 1996)

The following is the full 10-item scale to measure future time perspective (FTP)

Item
'This section will help me to understand how you are feeling about your future life'
1 – Many opportunities await me in the future
2 – I expect that I will set many new goals in the future
3 – My future is filled with possibilities
4 – Most of my life lies ahead of me
5 – My future seems infinite to me
6 – I could do anything I want in the future
7 – There is plenty of time left in my life to make new plans
8 – I have the sense time is running out (reverse coded)
9 – There are only limited possibilities in my future (reverse coded)
10 – As I get older, I begin to experience time as limited (reverse coded)

Goal Orientation (adaptation of Lang & Carstensen, 2002)

The following items were those offered to participants to measure their goal orientation. They are based on the statements prioritised by the participants in Lang & Carstensen's (2002) Card Sort Task.

Item

Respondents were asked to select the answer which they felt best represented how they prioritised each item

Items measuring Social Acceptance

6 – Have good friends who accept me the way I am

8 – Have close friends who trust me

9 – Be able to confide in a close friend at any time

 – Receive good advice on important decisions

11 – Not feel lonely

Items measuring Autonomy

3 – Determine my own future by myself

5 – Receive approval for my work

1 – Have a strong power of discernment

20 – Be financially independent

18 – Be well educated and knowledgeable

Items measuring Generativity

13 – Be available to others who need to be comforted

12 – Leave my mark on this world

14 – To pass my knowledge / experience on to others

15 – Help others find their purpose I life

16 – Have a large experience of life

17 – Be with people who set a high value on my opinion

Items measuring Emotion Regulation

4 – To be autonomous in my feelings

17 – Know myself and my feelings very well

19 – To have control over my feelings

2 – Not depend on someone else's feelings

Demographic items measured in Study 1 and Study 2

As well as age (in years), and gender (male or female), participants were asked to identify

their highest achieved level of educational qualification. The options were:

Item
'What is the highest educational qualification you have achieved?

1 – No qualifications

2 – Level 1 (GCSE lower than Grade C, or equivalent)

3 – Level 2 (GCSE at Grade C or higher, or equivalent)

4 – Level 3 (AS?A2 or equivalent)

5 – Level 4 (ONC/Certificate of Higher Education or equivalent)

6 – Level 5 (HND/Foundation Degree/Diploma of Higher Education, or equivalent)

7 – Bachelor's Degree e.g. BA, BSc

8 – Master's Degree e.g. MA, MSc

9 – Doctoral Degree

10 – Professional Degree (JD, MD)

Poster used to Advertise Study 1 Data Collection

Text provided to the Case Organisation for circulation by email

Your help needed please!

Have you noticed that how you feel and what is important to you has changed as you have gotten older? Or if you are still a young adult, have you noticed that what excites and motivates you is different to what excites and motivates colleagues who are older than you? Answers to these questions could give us some really important clues about what changes about the way we feel as we get older.

On Wednesday, Thursday and Friday (22nd to 24th) of this week, and also on Tuesday of next week (28th), we are hosting a PhD student from Aston Business School. She is called Jude Preston, and she is studying how people age from being young adults to older adults, in particular how their motivation, feelings and personal goals change as they go through the normal aging process.

She would very much like to collect data from as many of us as possible. This involves completing a short (about 5 or 6 minutes) questionnaire which asks questions about your goals and ambitions, and the emotions that you might have felt during the last week. The questionnaire also asks about your general health and also for some other details including your age, but nothing really personal!

All your answers are completely confidential and anonymous and you are not obliged to take part but it would be great if you will help Jude out – she will be in the building in the main concourse, from about 10.30 in the morning until 4.00 on each of the days. Jude will be happy to chat and to give you more information about her work, and the aging process in general

Thank You!

2. Appendix C: The adaptation of the Delmotte et al (2012) HRM system strength scale items

The Original Items (N = 39) and the adapted versions (N = 36), mapped onto the features and meta-features as defined by Delmotte et al (2012)

Item #	Delmotte et al (2012) Original Item	Feature	Meta-Feature	Adapted Item	Survey Item #
1	The HR department undertakes exactly those actions that meet our needs	DIST	REL	The HR department undertakes exactly those actions that meet our needs	1
2	In this organisation, employees experience implemented HR practices as relevant	DIST	REL	In my experience, people management practices at work are relevant to my needs	10
3	The actual functioning of the HR department is a mystery to a large part of the employees (RC)	DIST	VIS	Most employees have no idea what the HR department actually does (RC)	8
4	The HR department in this organisation has a high added value	DIST	REL	At [organisation], the HR department makes a valuable contribution.	12
5	Many of the practices introduced by the HR department are useless (RC)	DIST	REL	Many of the practices introduced by the HR department are useless (RC)	5
6	Employees are regularly informed about the initiatives taken by the HR department	DIST	VIS	I am regularly told about what the HR department are doing and planning	16
7	The HR department works too much behind the scenes (RC)	DIST	VIS	The HR department is too much in the background instead of being there where the work goes on (RC)	27
8	In general, the HR staff are met with much appreciate in this organisation	DIST	LEG	Generally, the work done by the people in the HR department is appreciated	25
9	Employees in this organisation often wonder about the usefulness of specific HR practices (RC)	DIST	REL	I often wonder about how useful some people management practices are (RC)	9
	In this organisation, it is clear what belongs to the tasks and what's outside the field of the HR department.			No satisfactory adaptation for this item could be found. It seems to relate to boundaries of responsibility but was not applicable to the case organisation's management structure	
10	The HR staff have enough authority to get their ideas accepted	DIST	LEG	HR plays a role in making decisions about the future of the organisation.	19
11	In this organisation, HRM is synonymous with excellent work	DIST	LEG	My Supervisor provides an excellent standard or people management practice	2
	In this organisation, the HR function is not a full management function.			No satisfactory adaptation for this item could be found. It seems to relate to the level of authority held by the HR department, but was not felt to be relevant to the case organisation's management structure.	

12	The suggestions, procedures and practices developed by the HR department actually add value to the functioning of this organisation.	CONSIST	INST	The suggestions, procedures and practices developed by the HR department actually add value to the functioning of [organisation].	28
13	The HR practices in this organisation do not contribute to employee motivation (RC)	CONSIST	INST	The people management practices at [organisation] do not contribute to employee motivation (RC)	13
14	The compensation system is developed in such a way that desired performance is reinforced	CONSIST	INST	We get better pay and benefits when we work in the way that [organisation] wants us to.	33
15	The HR instruments for employee appraisal succeed in encouraging the desired behaviour	CONSIST	INST	The performance review process helps me to understand how I should behave and work	30
16	The HR practices implemented in this organisation sound good in theory, but do not function in practice (RC)	CONSIST	VAL	The people management practices implemented in [organisation] sound good in theory but do not work in practice (RC)	11
17	The appraisal procedure developed by the HR department, has in practice other effects than the intended effects (RC)	CONSIST	VAL	The performance management process causes different effects from what it was designed to do (RC)	34
18	There is a wide gap between the intended and the actual effects of HR initiatives (RC)	CONSIST	VAL	There is a wide gap between the intended and the actual effects of people management initiatives (RC)	17
19	One can have faith that the HR practices realise the intended purpose	CONSIST	VAL	I can trust the people management practices to do what they say	7
20	The HR department does not succeed in actively changing employees' behaviour (RC)	CONSIST	INST	The Supervisor's people management practices do not succeed in actively changing employee behaviour (RC)	20
21	In this organisation, HR policy changes every other minute (RC)	CONSIST	C/MESS	At [organisation], HR policy changes every other minute (RC)	32
22	The various HR initiatives send inconsistent signals (RC)	CONSIST	C/MESS	The various HR initiatives send changeable signals (RC)	23
23	The successive initiatives introduced by the HR department often clash (RC)	CONSIST	C/MESS	At (organisation], HR initiatives often swap and change what they are trying to achieve (RC)	14
24	In this organisation, thre is clear consistency of HRM messages between the words and deeds of the HR department	CONSIST	C/MESS	At [organisation], people management practice closely matches HR policy	35
25	In this organisation, the distribution of bonuses and other rewards is perceived as fair by employees	CONSENS	DISTRIB	I think the way rewards are given is fair	21
26	In this organisation, employees consider promotions as fair	CONSENS	DISTRIB	I think promotions are made fairly	4

27	If employees perform well, they get the necessary recognition and rewards	CONSENS	DISTRIB	If employees perform well, they get the necessary recognition and rewards	26
28	In this organisation, rewards are clearly related to performance	CONSENS	DISTRIB	At [organisation], rewards are clearly related to performance	3
29	In this organisation, the results of the yearly appraisals are considered fair	CONSENS	DISTRIB	At [organisation], the result of the Performance Reviews are considered fair	6
30	The HR department regularly takes decisions based on favouritism (RC)	CONSENS	PROC	My Supervisor regularly makes decisions based on favouritism (RC)	15
31	Some employees in this organisation get a preferential treatment because they are friends with HR staff (RC).	CONSENS	PROC	Some people at [organisation] get treated better because they are friends with their Supervisor (RC)	18
32	The HR department makes decisions in an impartial way in this organisation	CONSENS	PROC	Supervisors make decisions based on facts rather than feelings	24
33	HR management and line management are clearly on the same wavelength	CONSENS	AGREE	The HR department and my Supervisor are clearly on the same wavelength	29
34	All HR staff members in this organisation mutually agree with the manner in which employees are managed	CONSENS	AGREE	All Supervisors in [organisation] mutually agree with the way in which employees are managed	31
N/A	Top management and HR management clearly share the same vision	Question not offered as not relevant to organisation structure			
35	Management unanimously supports HR policy in this organisation	CONSENS	AGREE	My Supervisor delivers people management to me according to [organisation]'s policies	36
36	HR management in this organisation is established by mutual agreement between HR management and line management	CONSENS	AGREE	My supervisor contributes to the way in which people management policy and practice is decided	22

Note:

Adjudication sheet for the cognitively adapted items from the Delmotte et al., (2012) scale measure of perceived HRM system strength

	Original	SL	AR	JS	F41	F68	F47	F40	F34
1	The HR	The support I	Servce supervisors	My Service Supervisor	My SS is always on hand if	My SS does	My SS does	Are things in	The SS understands
2	In this organisation,	I feel that the	I feel that people	I do not consider	All procedures and rules	My SS does	Things are given	Does the whole	All practices are
3	The actual functioning of	Most workers are	Most people don't	Employees have no	Employees don't get	Self-	The majority of	Does the	Understood
4	The HR department in this	The HR department	People	The HR department	The HR is a valuabe	Self-	The HR dept	Understood	Understood
5	Many of the practices	I perceive many of	People	I consider many HR	Most of the HR practices	Many practices	A lot of	Are they helpful	Many practices are
6	Employees are regularly	My organization	I am regularly told	I am constantly	I am told what the HR do	Self-	I am told	Do you feel in the	I am kept up to
7	The HR department works	The HR department	People	The HR department	HR are not savvy with	The HR	The HR dept	Is there an us and	Understood
8	In general, the HR staff are	Overall employees	Generally, we	I appreciate the effort	Mostly work done by staff	Clearly	Work done by	Do we	Understood
9	Employees in this	I often doubt the	I oftent don't find	I am surprised of the	Understood	Clearly	Sentence	Understood	Understood
10	In this organisation, it is	Statement not	Statement not	Statement not offered	Statement not offered	Statement not	Statement not	Statement not	Statement not
11	The HR staff have enough	HR takes part in	People	HR has a say with	HR make future decisions	HR	HR dept help	Are we all	Understood
12	In this organisation, HRM is	Your Service	I believe that my	Your Service	My SS is always doing	Your SS is good	My SS is always	Understood	Understood
13	In this organisation, the HR	Statement not	Statement not	Statement not offered	Statement not offered	Statement not	Statement not	Statement not	Statement not
14	The suggestions,	The suggestions,	The suggestions,	HR department	Put things down on paper,	Clearly	The HR	Understood	HR add value to the
15	The HR practices in this	Employees do not	The people	I find people	Employees don't feel	Clearly	Some of the	Do we feel	Understood
16	The compensation system	If we meet the	the same	It is in our interest	If we follow rules and	Clearly	We are paid and	Understood	Understood
17	The HR instruments for	The way I receive	Here I don't	Supervisions help me	The Supervisions help	Statement	The questions	Do I understand	Understood
18	The HR practices	On paper, the	The people	The people	Practices sound good in	Clearly	The work ehtic	Understood	Some practices do
19	The appraisal procedure	The performance	The way	The performance	Statement understood	What is	Sentence	Understood	Some performance
20	There is a wide gap	The difference	There is a wide	There is a big	Are all the staff on the	What is	management	Are we as a team	There are
21	One can have faith that the	I can rely on the	I trust that the	People management	Management practives	Clearly	Management	Can we trust our	Understood
22	The HR department does	The Service	The way Service	The service providers		Understood	The	Understood	Understood
23	In this organisation, HR	HR policy within this	In this rganisation,	There is constant		Understood	Within Vivo, HR	Are we kept in	Understood
24	The various HR initiatives	HR initiatives	Different people	I cannot see the bigger		Understood	A lot of HR	lack of	Understood
25	The successive initiatives	In this organization,	In this	If HR initiatives are		Understood	Within Vivo, HR	Understood	Understood
26	In this organisation, thre is	People	In this	in this organisation,		Understood	In Vivo,	Understood	Understood
27	In this organisation, the	In my opinion	People think that	Reward management		Understood	This sentence	Do we feel	Understood
28	In this organisation,	In my opinion the	I think the way	Promotion decisions		Understood	Promotions are	Are we treated	Understood
29	If employees perform	Employees receive	If employees work	If employees perform		Understood	If an employee	Do we feel	Understood
30	In this organisation,	Employees are	In this	In this organisation,		You will be	In Vivo rewards	Do we feel we	Understood
31	In this organisation, the	The outcomes of	People think that	Supervisions are		Understood	Within Vivo the	Are they worth	Understood
32	The HR department	My Service	People think that	My Service Supervisor	Are we all treated the	Understood	My SS regularly	Do we get reated	Understood
33	Some employees in this	The Service	Some emloyees in	Friends of the Service	Statement understood	Understood	The supervisor	Understood	Some staff are
34	The HR department makes	Service Supervisors	Some emloyees in	Service Supervisors	Gives a works view not	Understood	Supervisors	Understood	Understood
35	HR management and line	The HR Department	The actions and	The HR department	Statement understood	Understood	The way HR and	Do we all work	Understood
36	All HR staff members in	All Service	All Service	There is general	The rules are all agreed by	Understood	All managers in	Are the roles all	All staff agree
37	Top management and HR	Statement not	Statement not	Statement not offered	Statement not offered	Statement not	Statement not	Statement not	Statement not
38	Management unanimously	The people	I feel that my	People managemnet	My SS informs me of the	Your SS follows	My manager	Understood	Understood
39	HR management in this	Your Service	My Service	Your Service	My SS works in the way of	Statement	My manager	Understood	The SS follows the