CORRELATES AND OUTCOMES OF TASK CRAFTING: LINKING TASK CRAFTING TO PROMOTION

Nina Janette Fryer

Submitted in accordance with the requirements for the degree of Doctor of Philosophy

The University of Leeds
Leeds University Business School

February 2019

Intellectual property statement

The candidate confirms that the work submitted is her own, except where work which has formed part of jointly authored publications has been included. The contribution of the candidate and the other authors to this work has been explicitly indicated below.

The candidate confirms that appropriate credit has been given within this thesis where reference has been made to the work of others.

Assertion of moral rights:

Acknowledgements

This thesis represents the culmination of seven fascinating years of study. It would not have been possible, but for the support and encouragement of many people around me, all of whom deserve acknowledgement for their contribution to keeping me on track, for not allowing me to falter, and for never doubting that I would complete the PhD.

I am deeply grateful to my amazing husband, who has been steadfast, supportive and at times critical, and who has graciously and supportively tolerated both my absence and my overworked presence. I am grateful to my daughters, Emma and Sarah, who have always unreservedly believed in me. I am grateful to my colleagues, who have both endured my grumbles and enthusiastically participated in my sharing of learning. I am grateful to my sisters and parents, who have gently encouraged me and who have never even questioned that I would achieve this. I am fortunate in and grateful to my friends, who I am lucky to have retained during my PhD exile. I have also been supported, challenged and encouraged consistently by my supervisory team, including Dr Desmond Leach, Dr Mark Robinson and Professor Ivan Robertson, and I have grown as a researcher, a writer and an academic under their tutelage during this process. I have also benefited from the experiential wisdom of Dr Giles McClelland, who has been instrumental in helping me keep a sense of perspective when the way forward has seemed unclear.

Completion of this research would not have been possible without the support of my employer, Leeds Trinity University, to whom I acknowledge and am grateful for the support with funding, with research distribution, and with dissemination opportunities. Finally, I would like to give thanks and acknowledge the consent and participation of the study participants, from across a number of Universities in the UK. I had many colleagues, former colleagues and friends across the country who facilitated distribution of my survey in their Universities, and I appreciate the research and learning culture that enables research to take place within the University sector.

Abstract

Until now, the relationship between task crafting as a bottom-up, employee-led process of job design, and career development, has not been examined. This is despite both task crafting and career development having common motivations, and compatible antecedents, and despite career development theories integrating the principles of proactivity and adaptability that are fundamental behaviours in task crafting.

The purpose of this thesis was to examine whether employees who make specific, self-initiated task related changes to their work tasks achieve more positive career outcomes, evidenced by promotion. The thesis also examined contextual and behavioural correlates of task crafting to contribute towards building a more coherent picture of how task crafting can be enabled and utilised to enhance career development.

Adopting a positivist methodological position, a quantitative survey was developed and completed by 241 university employees. The survey measured task crafting, autonomy, uncertainty, quality of employees' relationships with their managers (Leader Member Exchange LMX), and a 'climate for crafting'. For outcomes, respondents reported whether they had been promoted in the last six months. Six months later, respondents again reported on whether they had been promoted, embedding a time-lagged design into the study.

Logistic regression showed that task crafting at time 1 increased the likelihood of promotion at time 2. Structural equation modelling analysis showed that each of the study variables were positively associated with task crafting, although not as originally hypothesised.

The findings contribute to career development theory by providing a specific mechanism by which employees can take action to change their job design, and thus improve their promotion prospects. The findings enhance job crafting theory by adding to known information on correlates and outcomes of task crafting, leading to a call for more research into the separate processes of job crafting and to a call for a re-examination of motivations for job and task crafting.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BE	Bayesian Estimation
CCT	Career Construction Theory
CSM	Career Self-Management (theory)
CWB	Counterproductive Work Behaviour (s)
DCS	Demands Control Support model
EWC	Ethical Work Climate
HE	Higher Education
INS	Intrinsic Needs Satisfaction
JCT	Job Characteristics Theory
JD-R	Job Demands-Resources model
LMX	Leader-Member Exchange
MLE	Maximum Likelihood Estimation
MI	Modification Indices
OCB	Organisational Citizenship Behaviour(s)
OCD	Organisational Career Development
SCCT	Social Cognitive Career Theory
SDT	Self-Determination Theory
SEM	Structural Equation Modeling
TCI	Team Climate Inventory
TWA	Theory of Work Adjustment
VPWE	Vocational Personalities in Work Environment (theory)

CHAPTER 1: THESIS OVERVIEW

1.1   OVERALL AIMS

Task crafting is a form of job crafting that concerns employee-led changes to work tasks (Wrzesniewski & Dutton, 2001). This behavior is motivated by a desire, for instance, to enhance work meaningfulness (Wrzesniewski & Dutton, 2001; Tims et al., 2016), to make work more interesting (McClelland et al., 2014) or challenging (Tims et al., 2016), to maintain a positive self-image in work (Lin et al., 2017), or to enhance job control (Tims et al., 2013a; Wrzesniewski & Dutton, 2001; Weseler & Niessen, 2016). Examples of task crafting include taking on additional, preferred tasks, reducing engagement in disliked tasks (Weseler & Niessen, 2016), and undertaking individually designed activities which improve task-related skills (Lin et al., 2017). In terms of outcomes, studies have found that task crafting relates positively to self and supervisor-rated performance (McClelland et al., 2014; Weseler & Niessen, 2016), intrinsic needs satisfaction (Tims et al., 2016), and subjective and psychological well-being (Slemp & Vella-Brodrick, 2014).

In this thesis, I aim to extend job crafting theory in two ways. First, taking into consideration the current evidence on the positive outcomes of task crafting, I present a rationale supporting the possibility that because these positive outcomes might lead to promotion, task crafting and promotion may be linked. I take the first step towards exploring this relationship by testing a model which positions promotion as an outcome of task crafting. Second, it is already known known that autonomy and leadership are important antecedents in relation to task crafting, and so, in this thesis I seek to extend current understanding and add new contributions to knowledge of the correlates of task crafting. Specifically, I consider the influence of uncertainty on the autonomy-task crafting relationship. I consider the effect of the quality of relationships between leaders and their subordinates and task crafting. Finally, I consider the impact of the broader behavioural climate on task crafting behavior. To bring these two elements together, I test a model of correlates of task crafting in relation to the outcome of promotion, and consider the

practical and theoretical implications of my findings in relation to the contribution they make to job crafting and career development theories.

1.2   **ORGANISATION OF THE THESIS**

The thesis is presented as follows. In chapter 2, I present the literature review informing the identification, development and focus of the study. The chapter begins with a broad review of job design, taking account of historical developments relating to changes in the structure and nature of work in developed countries. The chapter presents a rationale for focusing on job design as a theoretical framework which allows consideration of the interaction between an employee's personal attributes and their broader structural and contextual work factors. The chapter then presents job crafting as the key focus for the thesis, reviewing the extant literature around this relatively new, bottom up process of job design. I then present an argument for a focus on task crafting specifically as one dimension of job crafting, and review the literature and current evidence base informing this dimension of job crafting. Finally, I argue that task crafting has particular potential to enhance career development and I present a conceptual and theoretical justification for considering these two research areas together.

In chapter 3, I begin by setting out my theoretical approach to addressing the research questions. I justify a positivist approach on the basis of the emergent nature of the evidence linking task crafting and career development. I identify and justify a number of relevant associations with task crafting and then propose a model of correlates of task crafting in relation to promotion. This chapter sets out the hypotheses that were tested in this study.

Chapter 4 presents a detailed account of my research methodology, and I provide explanations for my research decision making relating to the study participants, the method and measures chosen, and the processes that I carried out before analysis in order to ensure the research was as free from bias as could possibly be achieved. I present a justification for my use of both structural equation modelling and logistic regression in relation to the time-lagged nature of the

study, and place particular emphasis on clarifying the analytical procedure that I followed when analysing my results. This section also sets out the ethical considerations that were taken account of whilst conducting the study.

Chapter 5 presents the results of my analysis. I begin with presenting descriptive analysis of the respondents, followed by correlational analysis for the study variables. Next follows my analysis of model fit for the time 1 data. I give particular emphasis to providing explanations for my decision making with regards to model adjustment, and present the evolution of my original research model. On arriving at a good model fit, I then consider alternative models, and present the process by which I identified, tested and compared alternative models for the time 1 data. Following this, I present the results of the time-lagged analysis and logistic regression, where I explore longer term links between task crafting and promotion over time. The chapter concludes with a summary of key findings linking back to the original model hypotheses.

Chapter 6 has two key elements. The first element is a discussion of the findings from my analysis, with regards to the initial literature review and the extant evidence base. In this chapter I separate out the discussion of findings into three sections. The first section presents a discussion of the outcomes of the analysis in relation to the originally hypothesised model, identifying supported hypotheses, considering explanations for hypotheses that were not supported, and exploring new relationships identified from the analysis. I then consider the practical and theoretical implications of the findings, relating back to the career development, job crafting and task crafting literature to present an exploration of what these findings could indicate. I then reflect on the strengths and limitations of the study, and follow this up with identifying and justifying areas for future research. I conclude the chapter with a personal reflection on my research journey, identifying challenges, enablers and next steps for me in relation to my own job crafting research and my career as a researcher in general.

CHAPTER 2: JOB DESIGN AND CAREER DEVELOPMENT

2.1 INTRODUCTION

Employment is, for many societies and countries, the fabric upon which society is built. As employees, a large proportion of our waking time is spent at work and the potential for work environments, structures and work values to affect our non-working time is great. As employers, the potential impact on society at large, as a result of productivity, innovation, and service provision, is central to the economic and social organisation and success of a country.

As is neatly synthesised by Grant et al. (2010), work environments have been through significant changes over the course of the last few decades. Automated work environments do not dominate the UK work environment, in the majority of work sectors. As a result, work outcomes for employees and organisations are generally an outcome of employees' work behaviours, which directly influence work outcomes, for the employee personally, for co-workers and also for the employer or organisation. Work behaviours range on a continuum from those which are detrimental to the organisation or to co-workers such as counterproductive work behaviours (CWB's), through to those which have positive effects on both, for instance organisational citizenship behaviours (OCB's). CWB's are a form of workplace deviance which is defined as those behaviours which are carried out with the intention of doing harm to an organisation or its workers (Bennett & Robinson, 2000). OCB's are a form of workplace behaviour which include going above and beyond the requirements of one's role to help co-workers and to have a positive effect on either employee cohesion, or on the organisation's reputation (LePine et al., 2002).

However, it has long been known that these work behaviours are shaped by the interplay between employees' perceptions, needs and motivations at work, with the structural, functional, procedural and social characteristics of their organisation. Understanding this interplay is

therefore important, because both positive and negative behaviours have potential to affect both the employees' experience of their job and their job satisfaction, and overall organisational performance.

Of particular interest in this thesis is the relationship between work behaviour, the work environment, and career development and enhancement. This focus is interesting because, firstly with regards to internally focussed career development, defined here as activities which contribute towards furthering one's career within an organization, rather than activities which contribute towards seeking a job or promotion elsewhere, it is beneficial for both employees and employers. For employees, career development and enhancement offers recognition of enhanced ability, competence, and opportunities for challenge (Duffield et al., 2014), while enhancing engagement (Sturges et al., 2010), commitment (Crawshaw et al., 2012), and trust (Crawshaw, 2011). Employees engaged with their jobs are also more likely to have higher job satisfaction and person-job fit (Chen et al., 2014; Lu et al., 2014). For employers, it strengthens employees' organisational commitment (Allen, 1997; Chang et al., 2007), reduces turnover or turnover intention (Chang et al., 2007), decreases grievances (Allen, 1997), increases creativity, and develops skills and the ability of the workforce to respond flexibly to challenge, change, and uncertainty. Consequently, organizations have the ability, through effective promotion and career development processes, to remain competitive in a challenging marketplace, for example through the implementation of organizational learning (Santos-Vijande et al., 2012), or through the effective development of human capital (Jin et al., 2010). Secondly, career development is an aspect that strongly draws on the complexity of the interplay between and employee and their organisation. The fundamental proposition that is tested within this thesis is that through self-initiated job design, career development is more within the control of individual employees than has previously been considered. This extended literature review chapter presents my rationale for this proposition.

The first two sections of the chapter are contextual, and set the scene for the key focus of this thesis. The first section presents a brief synthesis of the influences of individual attributes and contextual of structural factors on work behaviour. In this section, I use Self-Determination Theory to support my position that the interplay between these two are more influential in shaping work behaviour than each of them individually. Following this broad introduction, section two focuses on job design as mechanism for accommodating the interplay between individual and contextual elements. I present a brief review of the historical development of job design theory and its application to practice. This section concludes with an acknowledgement that recent developments in job design theory are leading to new ways of considering the employees' role in designing their own jobs, and it is this bottom-up, employee led approach to job design that forms the key focus of this thesis.

Section three focuses on job crafting as the key concept pursued in this thesis. The section presents key definitions and a state of the art review of job crafting theory and research. However, in sections four and five, I then justify my focus on task crafting as one form of job crafting, and at this point, make links between task crafting and career development theory and practice. The literature review chapter concludes with my justification for considering task crafting and career development in this thesis.

2.2 FACTORS INFLUENCING WORK BEHAVIOUR

Before exploring the factors that influence work behaviour specifically, I first provide a brief introduction which explains how work behaviour is identified, to give context to the evidence that has informed the content of this review. As previously stated, an employee's work behaviour is influenced by their individual attributes and the contextual environment in which they work. However, although work behaviour in its purest form can be observed, measured and objectively assessed, within the field of organisational psychology, objective measurement of behaviour as the only focus of study is rare. This is because observation of behaviour does little

to contribute towards greater understanding of the reasons for differences in behaviour, because employees' interpretation of their work environment will vary according to how they *perceive* it (Dilworth, 2005). Thus, an employee, in evaluating an aspect of their work, may see their work differently from a co-worker. As a consequence, employee perceptions are frequently used in research seeking to understand work behaviour. The following three sections present a brief synthesis of the way that individual attributes and an employee's contextual environment shapes work behaviour, drawing on studies which have used perceptions as a proxy measure for behaviour. The value of using perceptions as a proxy measure of work behaviour will be examined further in the methodological chapter of this thesis.

2.2.1 Individual attributes

Individual attributes affect how an employee perceives their work environment and how they respond to that environment. These attributes can be demographic, such as age, gender, ethnicity or cultural background. For instance, males report engaging in counterproductive work behaviour more frequently than females (Spector & Zhou, 2014). Sex has also been found to moderate the relationship between work stressors and counterproductive work behaviour, and between job attitudes and counterproductive work behaviour (Bowling & Burns, 2014). In relation to age for instance, job insecurity has a higher negative effect on OCB's for older workers (aged 50+) than it does for younger ones (Stynen et al., 2015).

Individual attributes can also be inherent and stable, such as personality traits. There are a number of taxonomies for personality traits, but the most commonly used is the Big Five, which identifies five key personality traits as 'openness to experience, conscientiousness, extraversion, agreeableness and neuroticism' (Goldberg, 1993). Spector (2011) argues that in relation to CWB's, personality is important because it affects an employee's appraisal of their work environment, their emotional response to their work environment, their perception of control over their work environment and ultimately, their subsequent actions. More recent research finds a link between personality traits and counterproductive work behavior (Spector & Zhou,

2014). However, although Spector's (2011) review of the relationship between CWB's and personality considers only the CWB end of the continuum of work behaviour, it is plausible that all of these processes influence OCB's too. For instance, conscientiousness has been found to exert an influence on OCB independently of job satisfaction (Lapierre & Hackett, 2007), and the conscientiousness trait will influence how an employee appraises their work environment and the actions that they take in response to that appraisal. There is also evidence that the other personality traits influence OCB's, but the effect depends on the motivation for the OCB. For example, agreeableness is significantly and positively related to organisationally focussed OCB, but is not related to socially motivated OCB (Bourdage et al., 2012). Extraversion, conscientiousness and openness to experience are positively and significantly related to socially motivated OCB (Bourdage et al., 2012). Conscientiousness is also linked to performance (Brown et al., 2011).

Individual attributes can also be changeable, such as affective states, moods, emotions, and needs/motivations. In contrast to the stability of 'traits', such changeable attributes are defined as '*states'*, which indicates a condition that is temporary or subject to fluctuation (Wright & Quick, 2009). The difference between states and traits is not universally agreed however, as recent developments in organisational psychology now use the term *trait-like* for states that have a longer duration (Luthans et al., 2007b; Wright & Quick, 2009). One of the changeable individual attributes is identified as 'growth need strength', or the extent to which an individual needs at work offer opportunities for personal growth and development (Hackman & Oldham, 1976).

In summary, evidence and theory shows that the way that an individual perceives their work environment is strongly influenced by their individual attributes.

2.2.2   Work context and work related attributes

The physical, social and contextual work environment has a huge influence on work behaviour. Within this thesis, these are defined as 'external attributes' in that they are factors which are specific to the work context rather than to the individual employee. Contextual factors may be supportive or hindering to an employee. For instance, a work organisation with expectations of high performance may produce higher work-rates, but also higher levels of burnout if the expectation of performance is perceived as a stressor (Taris, 2007). However, where more supportive 'high performance work systems' are in place, the negative relationship between high performance and burnout can be reduced (Fan et al., 2014) and employee wellbeing can be increased (Wood & de Menezes, 2011).

As highlighted above however, employee perceptions of these work factors influence how employees behave and thus the work factors, whilst distinct from work attributes, have a strong relationship with how the workplace is perceived. In relation to the workplace, there are a range of work attributes that influence work behaviour. At organisational or work unit level, work climates and cultures shape how employees behave. Work climates develop through social norms of behaviour in that environment, and thus can vary according to the work context. For instance, entrepreneurial organisations or cutting edge design organisations my have a high tolerance for innovation, creativity and potentially for failure, and thus a climate may exist whereby new, innovative ideas are valued and invited, and where both success and failure in testing out new ideas is perceived positively. Such a climate is typified in the Team Climate Inventory (TCI) (Anderson & West, 1996), which identifies psychological safety for innovation and risk taking as important in creating the space for both success and failure. Alternatively, an Ethical Work Climate (EWC) develops when organisations base their decision making and analysis on an ethical and principled framework (Ghosh, 2015), and this framework influences employees' behaviour because they observe and perceive ethical decision making and conduct to be valued and desirable.

At work group level, relationships between co-workers, and in particular relationships between leaders and their subordinates have a significant influence on employee behaviour. There is a huge amount of research that has explored the impact of leadership style on subordinate behaviour, including styles such as transformational leadership whereby a leader works with their subordinates to identify where change is needed and then provides the vision and guidance for employees to achieve the change (Scandura & Williams, 2004). Authentic Leadership is a style whereby the leader conducts honest and positively focused relationships with their subordinates, which builds trust. What marks authentic leadership as different from transformational leadership is that authentic leaders are mindful and aware of their own strengths and weaknesses, and share their thoughts and feelings with their subordinates, thus fostering an honest leader-subordinate relationship (Walumbwa et al., 2008). Leader-Member Exchange (LMX) is a theory which positions relationships between leaders and their subordinates as a dynamic exchange, whereby a relationship between the two develops over time and is subject to constant evaluations of performance, support and trustworthiness (Graen & Uhl-Bien, 1995; Dienesch & Liden, 1986). The outcomes of these evaluations contribute towards either strengthening or weakening the relationship, and the strength of this relationship influences the employee's perception of their work relationships and subsequently, their work behaviour.

2.2.3   Self-Determination Theory

Self-determination theory (SDT) provides a theoretical framework that allows for consideration of the interaction between personal attributes and context, in relation to a range of work and non-work related outcomes. Specifically, SDT concerns the influence of motivation on an individual's welfare, wellbeing and performance across a wide range of settings, and provides a framework for understanding how motivation leads to deliberate behaviours to achieve a range of personally important goals (Deci & Ryan, 1985). The theory is based on the underpinning principle that humans have a natural inclination towards psychological growth, the fulfilment of

which motivates behaviour (Van den Broeck et al., 2016). The importance of the social environment in shaping an individual's attitudes, values, motivations and behaviors underpins the original SDT conceptualisation and more recent developments of the theory (Deci et al., 2017).

In relation to the workplace, fundamental to SDT is the idea that features of the work environment, and an employee's personal attributes exert an impact on the employee that influences their motivation. Work context features within the theory include job characteristics, such as the amount of autonomy embedded within the job role, the social aspects of the role, or the specific task characteristics. Work context also includes the managerial environment, such as the extent to which a manager provides supportive feedback, offers choices, and makes work assignments challenging. Work context also includes the procedural environment, such as the levels and processes of pay and reward (Deci et al., 2017). Individual attributes include life goals or aspirations, which can be either intrinsic, such as personal growth or community contribution, or extrinsic, such as image, financial or work status success, fame or recognition (Roche & Haar, 2013). However, the influence of these features is mediated by two aspects. First, SDT proposes that an employee's basic psychological [intrinsic] need for competence, relatedness and autonomy/self-determination mediates the influence of both context, and individual differences. Competence concerns the extent to which an employee succeeds at the things they are attempting and achieving the outcomes they are aiming for; relatedness concerns the interactions that an employee has with others, and invokes a sense of caring, mutual respect, connectedness to and mutual reliance on others; autonomy concerns the extent to which an individual is able to make and initiate choices (Roche & Haar, 2013; Slemp & Vella-Brodrick, 2014; Deci & Ryan, 1985; Deci et al., 2017). Second, SDT proposes that the extent to which an employee's motivations are autonomous and intrinsic, or controlled and extrinsic, also mediates the impact of context and individual differences on work behaviours and work wellbeing.

Since the first articulation of SDT in the mid 1980's, extensive research has been carried out to test the propositions within the theory, and to examine the nuances of the interrelationships between the different elements within the theory. The relationship between intrinsic needs satisfaction and positive employee outcomes such as wellbeing, job satisfaction and organisational citizenship behaviours has been found across a range of studies (Slemp & Vella-Brodrick, 2014; Deci et al., 2017; Van den Broeck et al., 2016). Conversely, practices which thwart intrinsic need satisfaction have been found to create negative work outcomes, such as higher levels of burnout, poor job satisfaction, higher absenteeism and higher turnover intention (Olafsen et al., 2017; Williams et al., 2014). Alongside this, there has been a wealth of research exploring the impact of the autonomy elements of the theory, including analysing the influence of intrinsic and extrinsic autonomy, as well as perceived support offered to enable employees to enact work autonomy (c.f. Deci et al., 2017; Nie et al., 2015; Williams et al., 2014; Roche & Haar, 2013). The importance of autonomy within SDT shifts the focus towards a consideration of job design, as autonomy is an aspect that can be explicitly considered when designing a job, the job tasks and the level of monitoring and supervision in the job.

2.2.4 The importance of job design

At the individual employee level, the shape and design of the employee's job can have a huge influence on their perceptions of their work and thus on their work behaviour. For instance, jobs may be designed to include different levels of autonomy, which then influences the extent to which an employee is able to decide how they go about doing their job. Autonomy also influences the extent to which an employee feels responsible for the outcomes of their job (Hackman & Oldham, 1976). Alternatively, a job may be designed to incorporate a high level of supervision and monitoring, which again, dependent on the employee's perceptions of the nature and purpose of the supervision, influences their work behaviour. The nature of the job may require a high level of skill in a relatively small or niche area, which restricts the breadth of

the job role. Finally, amount of information a job holder needs to carry out their job, and the processes by which this information is provided may vary within and between jobs.

2.2.5   Summary and rationale for focus on job design

Although a summary of both individual and contextual characteristics has been provided thus far, this thesis takes forward the focus on job design and job context, rather than individual characteristics for the following reasons. Individual characteristics, particularly demographic characteristics may be fixed within a workplace and difficult to change without specific recruitment practices. Job design and the work context, by contrast, are able to be changed and affected, often by relatively simple interventions. Thus, in the next section of this chapter, I will present an evaluation of the potential for job design to influence work behaviour in greater depth, and set the scene for the research study.

2.3   JOB DESIGN – HISTORICAL DEVELOPMENT

2.3.1   Defining job design

Job design is neatly defined by Daniels et al (2017) as being concerned with "*the activities of workers, their duties, their tasks, and how those tasks are structured and scheduled*" (p1178). However, whilst this definition identifies what job design is concerned with, actual job design is the process of shaping or designing a job so that it enables and motivates employees to achieve their job or organisation goals. Fundamentally, job design is concerned with mechanisms to maximise employees' and consequently organisations' performance.

At its simplest level, the way that job design enables this is by creating a series of job characteristics that give boundaries to the job role. This is based on the belief that if a job boundary is clearly defined, the clarity this provides makes it more likely that the right employees will be recruited, more likely that the employee will achieve the goals set out within

their role, and more likely that managers will be effective at enabling their employees to achieve their work goals. The identification and testing of the impact of these characteristics has led to the development of a set of predominant job characteristics that influence performance, and these in turn have informed the development of a range of job design theories. The predominant characteristics integrated into many job design theories include the level of demand the job contains; the amount of control embedded within the job; the extent and level to which skills are needed and utilised; the variety of tasks required by the job; the clarity around the job role; the amount of support and social interaction within the role; and lastly, the extent of job security (Daniels et al., 2017; Hackman & Oldham, 1976; Oldham & Fried, 2016).

However, creating and embedding job characteristics into a job is only one aspect of job design. As is neatly synthesised by Grant et al. (2010), job design theories extend understanding of the impact of job characteristics by *also* exploring the *interplay* between employees and the structural, relational and contextual aspects of their jobs. This interplay includes examination of employees' personal and individual attributes and the varying impact they have on an employee's ability and motivation to carry out their jobs and perform well at work. This broadens out the initial simplistic interpretation of job design as the creation of a series of job characteristics, towards a richer interpretation which positions job design theories as motivational theories which have their roots in a desire to understand how to improve employee work efficiency, through understanding the effect of job characteristics on employee satisfaction, performance outcomes and more recently, behaviour at work (Oldham & Fried, 2016).

2.3.2 Historical development of job design theories

Whilst current understanding of job design is complex and multi-faceted, job design theory has been through a process of evolution that has been shaped by the external productivity climates and drivers that prevailed at the time. A brief review of recent job design theories shows that there have been some dramatic changes in both our understanding of job processes, and in our

understanding of the factors that influence job design. Initially, in the 1970's, a desire to understand fluctuations in job performance that were seen within the dominant manufacturing sector of the time led to job design theories that focussed purely on the characteristics of the job, and the effect this had on performance. Early features of this focus were job design theories that emphasised job simplification as a means to integrate standardisation of performance (Oldham & Hackman, 2010) and these were based on the belief that if job tasks were predictable, clear and achievable, then all employees performing that job would perform to the same standard. However, the realisation that the monotony and lack of control inherent in oversimplified jobs not only disengaged employees in their jobs but also contributed towards increasing counterproductive work behaviours, led to a reconsideration of the role of motivation in job performance. This journey is eloquently illustrated by Lawrence (2010) in his case study of both time working in an industrial environment, and his subsequent research which explored the relationship of such work to individual motivation and productivity.

At the time, it was believed that employees liked performing well at work because it made them feel good, but rather than accepting this in its simplest form, researchers began to consider what features of a job would enhance and motivate employees to perform well. This consideration led to alternative theories which emphasised work enrichment rather than work simplification. Work enrichment theories integrated the concept of employee motivation into job design, and proposed that employees had internal motivational needs at work which, if satisfied, could enhance performance, engagement and productivity because these internal needs were being fulfilled (Oldham & Hackman, 2010).These needs included responsibility, achievement, growth in skill or competence, recognition of their contribution, and the possibility of advancement. However, these needs proved difficult to measure on their own and therefore, the focus in job design theory shifted through looking more closely at the attributes of work tasks towards looking at job characteristics that were related to an individual employee's work motivation (Oldham & Fried, 2016). This focus is exemplified by Job Characteristics Theory (JCT) (Hackman and Oldham, 1976; Oldham & Hackman, 2010).

JCT identifies five core job characteristics, the first three of which are positioned as enhancing the meaningfulness of the work for employees. These are, skill variety (the extent that a job requires employees to use a broad range of skills in carrying out their work), task identity (the extent to which an employee can see that the tasks they carry out contribute towards a larger and identifiable piece of work), and task significance (the importance of the job in relation to the wider world) (Hackman & Oldham, 1976). The fourth characteristic is autonomy (the extent that a job gives the employee freedom in how they carry out their tasks), which is positioned as affecting the employees experienced responsibility for job outcomes because jobs with higher levels of autonomy enable work outcomes that are more related to the employees' own efforts (Hackman & Oldham, 1976). Finally, job based feedback (the extent to which an employee can gain information about their contribution and feedback, whilst carrying out their tasks) which affects the extent to which employees know whether they are doing a good job (Hackman & Oldham, 1976). However, the model also considered the possibility that individual attributes might affect the extent to which employees could make the most of the job characteristics. JCT proposed that an employees' internal desire for personal growth, along with their possession of the skills and knowledge needed in their job would moderate the extent to which an employee would be motivated by the job characteristics.

JCT has formed, and continues to form the basis of job design research. However, over time, and in response to research which found weak evidence of a direct relationship between job design and work outcomes (Oldham and Fried, 2016), research into job design has broadened to include consideration of the factors that moderate this relationship. This is in-part, due to the changes in the nature of work over time. For instance, job roles have become more dynamic and flexible, and requirements of a job role are not stable (Oldham & Hackman, 2010). It is also due to a growing awareness of the influence of the broader work context in influencing work behaviour (Johns, 2001). A further area for theoretical expansion concerns acknowledgement of the influence of the social aspects of work and the contribution of these to motivation (Oldham & Hackman, 2010).

This broadening out of research has led to the development of many new models of job design, each of which embeds some aspect of JCT as their underpinning theoretical framework. For instance, the Job Demands-Resources (JD-R) model suggests that a job exerts demands on an employee, and that the job design and also the organisational context, can provide resources which an employee can draw on to minimise the negative effects of these demands (Demerouti et al., 2001; Bakker & Demerouti, 2007). JD-R model has its origins in the Demands Control Support (DCS) model (Karasek & Theorell, 1990) that seeks to explain the relationships between the impact of high demands on an employee, an employee's perception of the stresses and strains created by high demands, and the moderating effect of control and support in reducing the negative effects of high demands. Research around the DCS model has examined two key factors. The first is work dissatisfaction, with the most adverse effects of high demands being expected in a low control environment. The second is around the 'buffer theory, whereby high levels of control act as a buffer against high demands, minimising their negative impact.

More recently, research has begun to examine the way that individuals can act to bring about the support needed, and explorations of the mechanisms by which enactment can influence job design (Daniels et al., 2011; Daniels et al., 2008). This focus on differential actions introduces the idea that individuals may differ in the extent to which they are able to mobilise the resources they need to meet the demands of their job. The introduction of individual differences represents a broadening of JCT, from considering only those resources that belong to and are provided by the organisation, to include individual attributes that are possessed by the employees themselves. Psychological Capital (PsyCap) (Luthans et al., 2007b) which is a composite measure of individual resources including Hope, Resilience, Optimism and Efficacy, is one example of personal resources that individuals can draw on. PsyCap is positively associated with both self and supervisor-rated performance across a range of different study populations (Luthans et al., 2007a; Luthans et al., 2008b). These resources have been found to be malleable, able to be developed, but also able to be depleted (Luthans et al., 2008a). Character Strengths represent another set of personal characteristics that are relatively stable over time, but are able to be

enhanced and developed (Peterson & Seligman, 2004). These are important as they lead to positive behaviours that are valued in the workplace, such as good teamwork, the ability to look positively to the future, and being able to feel gratitude (Harzer & Ruch, 2015).

The idea that resources can be drawn on, and that the level of available resource can change is grounded within Conservation of Resources (COR) theory. COR theory suggests that job strain (or high demands) depletes an individual's physical, social, emotional or status resources, such that burnout is more likely. An additional effect of the depletion of resources is that individuals will seek to conserve remaining resources, and this could be evidenced by withdrawal, either attitudinally or physically, from the work that is causing the strain (Wright & Hobfoll, 2004).

Developing this further, Clegg and Spencer (2007) proposed an extension to COR theory in their Circular and Dynamic Model of Job Design. Their model proposes that longitudinal examination of changes in job resources is important in understanding the job design process and introduces the idea of vicious or virtuous cycles which create positive or negative feedback loops. For instance, if a role with high demands requires high levels of enactment to minimise the effects of the demands and to draw in support needed, then the effect could be increasing incidence of disengagement and potential future withdrawal. Conversely, if an individual uses their resources to increase, for instance, their job control, then their future resources are enhanced, thus giving them greater future resources to draw on. This model proposes that job design is therefore circular and dynamic, rather than static. This theme can be seen in Broaden and Build theory (Fredrickson, 2001), which proposes a list of ten positive emotions that individuals can draw on, that have a subsequent positive emotional and biological effect and contribute towards building a positive spiral of enhanced personal emotional and physiological capacity. However, Clegg and Spencer (2007) and Challenger et al. (2011) also broaden the conceptual framework of JCT by explicitly considering the impact of varying levels of social interaction on an employee's performance, such as the contribution of self, peer and supervisor trust to self-efficacy and engagement in self-initiated job redesign.

2.3.3 Understanding the relationship between job design and performance

Bringing all of these ideas together, and notwithstanding whether relationships are linear or cyclical or circular, important pathways in the relationship between job design (comprising job and individual characteristics) and performance, are wellbeing and engagement. There has been much research exploring the relationship between job design and performance, much of which has focused on the relationship between job design and employee wellbeing. The origins of this perspective can be traced back to the original concepts underpinning early studies of job design, which posited that employees like to perform well and thus, performing well makes them feel good (Taris & Schreurs, 2009). However, current research inverts this perspective, and suggests that when employees feel good, they will perform well (Ford et al., 2011; Wright, 2010). The interchangeability of antecedents and outcomes [ie wellbeing and performance] is entirely consistent with the approach to job design proposed by Clegg and Spencer (2007), who argue that job design, rather than being a linear process, is dynamic and circular.

The relationship between wellbeing and performance seen in the evidence base informing job design theories is also important. However, as job design theories have evolved in their complexity, the origins of changes to job design have begun to be called into question.

2.3.4 Changes to underpinning concepts of job design

Originally, a core concept underpinning job design theories was that although job design theories provided a framework for understanding the interplay between the individual characteristics of the employee and the structural characteristics of the job, it was believed that it was the responsibility of the leader/manager or organisation to design and set the boundaries of the job. Thus, the job design process was positioned as external to the influence of individual employees and within the remit of supervisors and managers to control. As a result, up until recently, a central concept of job design theories has been the separation of the employee from the 'job', and the central role of managers in the job design process. In this way, job design has

traditionally been viewed as a 'top-down' [manager initiated and led] process whereby the manager provides the driving force for job design and job redesign. This concept is very strongly embedded within JCT and in early conceptualisations of job design theories. With the development of the circular and dynamic model of job design however, the collaborative relationship between managers and employees in job design were positioned as essential aspects of job design theory (Clegg & Spencer, 2007; Challenger et al., 2011), and job design as a social process began to receive much greater attention (Oldham & Hackman, 2010; Oldham & Fried, 2016). Viewing job design as a social process shifted the total responsibility for job design from being purely within the remit of managers, to being a negotiable and collaborative process. This shift follows on from the increasing importance of the role of individual characteristics in the interpretation of, and reaction to job design, and is informed by theories such as Leader-Member Exchange (LMX) (Graen & Uhl-Bien, 1995) which seek to explain differences which arise in relationships between managers and their subordinates.

2.4   JOB CRAFTING – A NEW APPROACH TO UNDERSTANDING JOB DESIGN

Recently, the concept of management involvement in job design has been re-examined. A new approach to job design, called 'job crafting', has been proposed by Wrzesniewski and Dutton (2001), in which the employee is considered as the primary agent in initiating and implementing on-the-job modifications to their own jobs (Berg et al., 2010b; Wrzesniewski & Dutton, 2001). This suggests that the power relationship between employers and employees is subtly different than traditional job design theories have proposed, with job crafting being a mechanism whereby individuals can and do make *private* adjustments to their role to enable a better employee-job fit, thereby improving performance outcomes. In this respect, the new approach proposes that whilst initial job design may be created from the top down, dynamic job design and potential job redesign is predominantly a 'bottom-up' process, whereby the employee takes the lead on making structural and characteristic changes to their job. This bottom up approach is also now being seen within research around job redesign, with Daniels et al. (2017) finding that

training workers to improve their own jobs has the largest effect on employee wellbeing, which indicates that a bottom-up process of job design or job redesign has potential to create performance improvement via the mediating pathway of wellbeing. Wrzesniewski and Dutton (2001) are very clear in their original conceptualisation, that job crafting is not just an alternative way of looking at job design. Rather, they position job crafting as a process led theory which explores how individuals act and think to create changes to their work identity and work meaningfulness. This is in contrast to their interpretation of job design which, they argue, focuses on understanding employees' experiences of their jobs. They illustrate this separation of job crafting from job design with the following explanation;

"instead of the design of the job eliciting attitudes and motivation, the opportunity and motivation to craft elicit job crafting" (Wrzesniewski & Dutton , 2001, p181).

With this explanation, they position job crafting as a completely new way of looking at the processes of job design, rather than as a new job design theory.

Job Crafting (JC) challenged the dominant thinking present in Job Characteristics Theory (Hackman & Oldham, 1980) that individuals are passive in their job design, by proposing that individuals use their own resources to change their job characteristics to improve their work meaningfulness. The focus on meaningfulness is important because it is consistent with the underpinning motivational principles of JCT, but it also addresses the criticism of JCT that specific actions to enhance meaningfulness in job design are often overlooked (Johns, 2010). Wrzesniewski and Dutton (2001) proposed that an individual's relationship with their job is dynamic and that individuals will actively and privately seek to shape their jobs to create an improved person-job fit. The uniqueness of the concept is that the employee is placed in a much more active role, with the implications for employers being that managers may need to design more complex work which allows greater opportunity for employee autonomy, but in doing so may need to accept that employees will use this autonomy to job craft. The responsibility is

placed on managers to provide improved feedback, and to allow for unexpected outcomes if employee creativity is encouraged. The underpinning assumption within job crafting is that employees who have a greater person-job fit will perform better, remain in their post and be happier in their work, benefitting both the organisation and the individual employee. This idea draws on the Person-Environment Fit model proposed by Edwards (2008) and on research on the response to unanswered callings by Berg et al. (2010a).

2.4.1   Defining job crafting – a critique

There are currently two working definitions of job crafting that have been in part shaped by the research methodology used to explore the concepts further. Firstly, that proposed by Wrzesniewski and Dutton (2001) based on qualitative exploratory methods;

> *"the actions employees take to shape, mould and redefine their jobs……..a process that captures how individuals locally adapt their jobs in ways that create and sustain a variable definition of the work they do and who they are at work"* (pp180)

This definition focuses clearly on the actions that individuals take to shape their jobs, and integrates the concept of person-job fit. This interpretation of job crafting identifies four key processes that individuals go through in order to craft their jobs. Wrzesniewski and Dutton (2001), Berg et al. (2010b), and later Lyons (2008) suggest that an individual makes changes to better match their job with their own motivations and suggest that changing boundaries is at the heart of job crafting, as follows:

a.   Changing elements of the job itself (task boundaries)

b.   Changing their perceptions of the job (cognitive boundaries)

c.   Changing their relationships with others (relationship boundaries)

d.   Self-initiated skill development

Job crafting defined in this way draws on an eclectic mix of theoretical positions. Elements of the Demands-Control-Support model of job design (DCS) (Karasek & Theorell, 1990) can be seen, with the support element particularly being picked up on the relational boundaries, and the task and cognitive boundaries overlapping with the 'control' and 'demands' elements of DCS. Their change processes also draw on the strengths based approaches from positive organisational psychology including the Conservation of Resources (COR) model (Hobfall, 2002) and Broaden and Build Theory (Fredrickson, 2001), particularly the 'cognitive boundary shifting' processes.

In contrast to this, Bakker et al. (2012) suggest that changing demands and resources are at the heart of job crafting, and firmly locate Job Crafting within the Job Demands-Resources (JD-R) model. Their definition of job crafting is "*the changes employees may make regarding their job demands and job resources"* (Bakker et al., 2012, pp1362) and they identify three processes by which individuals will job craft:

a. increasing (structural or social) job resources;

b. increasing challenging job demands;

c. decreasing hindering job demands

This second conceptualisation is gaining traction within job crafting research but is problematic for the following reasons. Firstly, the location of job crafting within JD-R model represents a shift away from Wrzesniewski and Dutton's (2001) original conceptualisation, and a narrowing down of both the focus for action, and the range of actions available. For instance, Tims and Bakker (2010) justify their situation of job crafting with JD-R on the basis that they perceive all job characteristics to be either job demands (aspects of the job that need the employee to consistently use physical or psychological effort or skills), or job resources (aspects of the job that help an employee achieve their work goals, help them to reduce the psychological or physical demands of the job, or help them to grow in their job). They then frame job crafting

actions as those that are taken by an employee to change their demands or resources, so that their job better fits their individual skills, job needs or job preferences. In this respect, framing job crafting within the JD-R model includes actions to reduce stress at work, as well as actions to enhance resources and enhance meaningfulness. They justify this position with the argument that Wrzesniewski and Dutton's (2001) conceptualisation is too narrow and does not take account of actions that employees may take to avoid tasks that may cause them stress. However, as articulated by Niessen et al. (2016), the underpinning purpose of job crafting as originally conceptualised, is to enhance work meaningfulness. Thus, broadening this concept out to include stress management moves job crafting from being theoretically located within positive psychology, towards being located within the 'stress and strain' approach to understanding work behaviour, as it positions job crafting as a proactive coping strategy used by employees when they are under strain.

Furthermore, Tims et al. (2012) reject the 'changing cognitive boundaries' element of Wrzesniewski and Dutton's (2001) job crafting processes, suggesting that this process represents passive adaptation to work circumstances that cannot be changed. This is due to the specific location of Tims et al. (2012) conceptualisation of job crafting as a form of proactive work behaviour, which they argue takes place in advance of a situation and includes taking control or causing a specific change. This argument does have some merit, as the examples given to illustrate cognitive crafting by Berg et al. (2010b) do seem to be based on reactivity. However, the idea that a change in how an employee thinks about their job is only applied to events in the past is not persuasive as it is an important proactive strategy for improving person-job fit (Niessen et al., 2016). That being said, neither reactive or proactive cognitive processes fit neatly into Bakker et al. (2012) model, as cognitive reframing does not contribute towards changing either job demands or job resources, nor does it contribute towards increasing structural or social job resources. In accordance with the focus on positive psychology in this thesis, the Wrzesniewski and Dutton (2001) conceptualisation of job crafting is utilised rather than the Job Demands-Resources conceptualisation. However, in acknowledgement of the

overlap between these two conceptualisations, where relevant evidence is available from the JD-R based approach, it will be drawn on.

2.4.2   Concepts underpinning job crafting

There are two fundamental principles that form the basis of job crafting theory that are positioned as providing the motivation for actions which result in changes to ones job. The first is work meaningfulness, and concerns how individuals frame the meaning of their work. Work meaningfulness is presented in positive organisational psychology as a factor which enables positive work outcomes, and is generally understood as the way in which an employee finds a sense of purpose, significance and importance in their job (Lee et al., 2017; Seligman, 2002). If an employee feels a sense of work meaningfulness, it has a positive effect on their sense of being able to take ownership and responsibility for their tasks, and subsequently leads to high levels of motivation as employees feel they will be effective at achieving their work outcomes (Lee et al., 2017). For Wrzesniewski and Dutton (2001), the importance of work meaningfulness is in the impact it has on work motivation, and scholars have attributed this impact to the positive effect that work meaningfulness has on intrinsic needs satisfaction (Deci & Ryan, 1985).

The second core principle for job crafting is that individuals in work form a 'work identity' which becomes a way in which they define themselves at work (Wrzesniewski & Dutton, 2001). The definition of a 'work identity' provided by Smith et al. (2015) describes work identity as forming a sense of self within the work domain, particularly in relation to the tasks carried out, the relationships formed and the involvement in, and negotiation during change. In other words, employees develop a sense of who they are at work as a result of what they do, who they interact with and how much they are able to influence change. Work identity is conceptualised as comprising two levels of identification. The first is personal, which identifies with personal career or occupation and is internally focussed. The second is collective, which identifies with

the organisation as a whole and is more externally focussed (Nordhall & Knez, 2018). Work identity is important in job crafting for three reasons. Firstly, it embeds motivational properties to elicit change. If an employee, on reflection on their work identity, feels that there is a mismatch between who they are at work and their desired work identity, they will take action to narrow the gap. Secondly, because work identity is also shaped by social and work relationships, actions can be broader than just task adjustment, and can be relational adjustment too. Thus, the inclusion of work identity in the job crafting concept broadens out the possible range of actions, from purely task adjustment to relational changes. Thirdly, the personal occupational and career related focus in personal work identity creates the onus for change at individual rather than organisational level, which gives rise to the potential changes to an employee's job being initiated by employees themselves. This personal focus goes some way towards explaining the origins of the bottom up nature of job crafting as a job design strategy. The adjustment of work identity is clearly shown in the example of restaurant staff making changes to their jobs which resulted in a redefining of their sense of work-self as creative culinary artists (Wrzesniewski & Dutton, 2001). More recent examples of employees job crafting to shape the boundaries of their work identity include hospital porters engaging in 'care-giving' activities that are outside of their formal job roles, but within the boundaries of the interactions they are exposed to and engage in at work (Fuller & Unwin, 2017).

Enacting job crafting, irrespective of the processes by which an employee goes through to achieve it, requires several core attributes. In order to make changes to one's job, an employee has to be able to think creatively about their current job, taking account of the breadth of work tasks, and work relationship. They have to be able to then come up with innovative ways of changing their jobs, and be able to see the potential for such changes to affect their work identity or work meaningfulness. Next, they have to have the self-belief that they can make such changes, and this is based on an evaluation of their scope for making changes, again taking account of the amount of control and autonomy they have in their job and their personal ability to enact the changes needed. Finally, they have to take the initiative and make changes to their

jobs, and these may be proactive, reactive or adaptive changes. Some of these attributes are inherent in their job design. For instance, the level of autonomy an employee has to make changes to their job is largely determined by their job description, their level of responsibility and the demands of their job (Berg et al., 2010b). However, many are personal attributes, such as proactivity, creativity and adaptability, and these are irrespective of the actual design or tasks inherent in the job.

Taking each of these attributes in turn, creativity and innovation are concepts which both require mental agility and flexibility, along with a desire to question the 'status-quo' and not just continue with existing practice. Creativity and innovation are closely entwined, as is seen in a common definition of creativity being the production of new and useful ideas, which involves idea generation (problem solving) and a new idea (innovation) (Amabile et al., 2005). These two elements are clearly identifiable in job crafting and its underlying motivations. For example, job crafting theory suggests that an individual reflects on the way that they go about their job at present, and this reflection is carried out in relation to their needs and motivations. Where an individual identifies that their job falls short or does not fulfil their needs and motivations, they move to consider alternatives, including new ways of working, relating to others or new ways of thinking. This is seen very clearly in Wrzesniewski and Dutton's (2001) case study examples in support of their presentation of job crafting theory, such as restaurant staff creating new dishes; cleaning staff changing their tasks to enhance efficiency; or engineering staff acting to create a stronger sense of 'team' which enhanced the ability of the team to do its work.

Whilst it makes conceptual sense to link creativity and innovation to job crafting behaviour, it is clear when looking at definitions of creativity, that job crafting is a subtly different form of creative or innovative work practice. By way of illustration, work related creativity is defined as *"coming up with fresh ideas for changing products, services, and processes so as to better achieve the organization's goals"* (Amabile et al., 2005, p367). Thus, the focus for the creative behaviour is positioned as the achievement of organisational goals. In contrast, whilst there are

many examples of the achievement of organisational goals being an outcome of job crafting (Bakker et al., 2012; Petrou et al., 2012; Harju et al., 2016), the primary drivers are not organisational; they are personal and, as shown above, related to satisfaction of motivational and intrinsic needs. However, creativity and job crafting do share a common antecedent. Within the historical and current literature base, creativity is positioned as something that can arise during periods of emotional turmoil or dysfunction (Amabile et al., 2005), and this fits well with the motivations for job crafting being an employee's dissatisfaction with current versus desired work identity and work meaningfulness.

Self-efficacy is a concept which proposes that modification of any aspect of ones environment, in this instance the work environment, can only happen if people believe that they have some control over their actions, and that they use this control to make changes, and that they are confident that the changes made will achieve the desired outcomes (Miraglia et al., 2017; Bandura, 1986). Fundamental constructs of self-efficacy are mastery experiences, where an individual has previously experienced success related to the area they are wishing to change; vicarious experiences, where an individual is able to learn from observing others or through having positive experiences related to them by others; and verbal persuasion, where an individual can create a dialogue for success which enables them to generate a pathway of self-belief towards their goals (Bandura, 1986). Self-efficacy is a formative underpinning construct within job crafting, and is positioned as a personal resource that employees can draw on to enact job crafting (Tims et al., 2014). As a result of self-efficacy developing by drawing on previous mastery experiences, recent evidence finds that the relationship between job crafting and self-efficacy is reciprocal (Miraglia et al., 2017).

Finally, enacting job crafting requires an employee to be proactive in taking action to enhance their work meaningfulness or develop their sense of work identity. Proactivity is clearly defined by Grant and Ashford (2008) as '*anticipatory action that employees take to impact themselves and/or their environments*' (p4). They present an excellent review which looks across multiple

theories and processes of proactivity to identify common themes (Grant & Ashford, 2008), and in this review situate job crafting as one way that employees enact proactive behaviour. Of key relevance to job crafting is the importance of situational factors such as autonomy in creating the space for proactive behaviour, and the role of ambiguity as a stimulator for proactive behaviour. However, Grant and Ashford (2008) also acknowledge the stimulating role of dispositional factors in stimulating proactivity, such as having a proactive personality, or having personal initiative. These two dispositional antecedents take account of personality and behaviour in relation to proactivity, and place the emphasis on acting in advance to achieve change, with a specific goal or purpose in mind (Dikkers et al., 2009). Early research supporting proactivity as an antecedent of job crafting found a positive relationship between job crafting and proactive personality, although this research was cross-sectional and thus causal inferences cannot be made (Bakker et al., 2012). A more recent meta-analysis based on the JD-R conceptualisation has further supported this relationship (Rudolph et al., 2017).

2.4.3   Motivational and Individual difference antecedents of job crafting

Although still a relatively new area of research, understanding the conditions under which job crafting takes place has been embedded in job crafting research from the outset. This thesis identifies two key sets of conditions that have been pursued thus far. First, there is extensive research that seeks to understand the personal and individual motivations that prompt employees to job craft. This arose from the novelty of the conceptualisation of job crafting, and formed a large part of the early explorations which informed the definitions of job crafting. Moving forwards from this, the impact of the broader work and contextual environment that act as an enabler of job crafting has begun to be studied, although to date, this has received less attention. To contextualise this research study, the next section of the thesis will summarise the current evidence base that exists for these two sets of antecedents, and will lead onto a justification for the focus on contextual and job design antecedents rather than motivational antecedents.

2.4.3.1   *Motivational antecedents*

Consistent with Self-Determination Theory (SDT), current research suggests that employees job craft to improve their work meaningfulness (Berg et al., 2010b; Wrzesniewski & Dutton, 2001; Wellman & Spreitzer, 2011; Bakker et al., 2012; Petrou et al., 2012; Nielsen & Abildgaard, 2012). This is expressed as a desire to enhance job alignment with personal value systems (Berg et al., 2010b; Bakker et al., 2012), to enhance enjoyment (Berg et al., 2010a; Petrou et al., 2012), or employees seeking to increase control over their jobs (Berg et al., 2010b; Tims et al., 2012; Leana et al., 2009; Lyons, 2008; Wrzesniewski & Dutton, 2001). These changes reduce boredom and enable diversification (Berg et al., 2010a; Tims et al., 2012), thereby reducing job stress and improving engagement (Tims et al., 2012; Petrou et al., 2012; Bakker et al., 2012). Additionally, such changes are motivated by the desire to improve an employee's ability to handle organisational change (Petrou et al., 2013). There is evidence that these motivations are being fulfilled through job crafting. At an individual level, job crafting improves employee wellbeing, through increasing job satisfaction and engagement, and decreasing burnout (Tims et al., 2013a). It enables employees to mobilise structural resources, through improving autonomy and work variety, and social resources such as social support and feedback (Tims et al., 2013a). Job crafting is also positively correlated with perceived control, although it is unclear whether this is an outcome or an antecedent (Lyons, 2008), and has been shown to improve goal orientation and perceived performance (Van Dam et al., 2013). Furthermore, collaborative rather than individual crafting is positively related to improved performance based on objective supervisor ratings (McClelland et al., 2014). Finally, job crafting behaviours such as seeking out challenges, and increasing social and structural resources, are positively correlated with colleague rated performance (Bakker et al., 2012). It is clear then, that job crafting can improve work engagement and meaningfulness for employees, and that this has potential to benefit employers also.

However, although an individual may be motivated to job craft, there are actions that managers can take to create a work environment that enables and supports employees to carry out job

crafting. The nascent job crafting research literature has so far concentrated on understanding the processes of job crafting and job change outcomes, with structural and contextual antecedents receiving less attention.

2.4.3.2 *Individual differences as antecedents*

Because of the nature of job crafting as a new approach to job design, there has been relatively little attention paid to individual differences that shape how and when an individual engages in job crafting. To date, there are three studies that have included a specific focus on individual differences, the first finding that self image, perceived control and readiness to change as individual attributes, were antecedents of job crafting (Lyons, 2008). However, this study was based on a homogeneous sample of salespeople and has not, as yet, been tested on more generalizable population. A second study was qualitative and examined individual and collaborative crafting the childcare sector. Consistent with Wrzesniewski and Dutton's (2001) theory, this study found individual work orientation to be a distal antecedent of job crafting (Leana et al., 2009). From within the JD-R conceptualisation of job crafting, Tims and Bakker (2010) proposed that having a proactive personality, having positive self-efficacy, and having a regulatory focus, were antecedents of job crafting, but did not test this. This paucity of focus may be because there is greater potential to change the work context and work related antecedents to enable job crafting.

2.4.4   Contextual and job design enablers of job crafting

Job crafting involves an employee making changes in how they go about their job (task and relational crafting), or making changes that effect how they perceive their jobs (cognitive crafting). These changes have an effect on the work tasks employees carry out, they have an effect on their relationships at work with both co-workers and managers, and they have an effect on employees' sense of work satisfaction. The following sections bring together existing evidence which supports the position that, in order for an employee to be able to make such

changes, a range of work related features need to be in place. First, an employee needs to feel that they have enough control over how they go about their job that they feel able to make changes. Job autonomy is a dominant feature of existing research on job crafting. Next, even if an employee believes that they have the autonomy to make changes to their jobs, the level of trust between an employee and their manager is important as this enables the employee to feel confident in acting on their perceived autonomy without fear of retribution. Further, because job crafting involves an employee making changes to their jobs, which may impact on their co-workers, and also because job crafting involves employees making changes to their working relationships, the culture and climate within which employee works is an additional important enabler of job crafting. Finally, when all these conditions are in place, there may well be instances which prompt job crafting, and these could be contextual factors, such as organisational change, job uncertainty or job complexity.

2.4.4.1   Autonomy

Within the original conceptualisation of Job Crafting set out by Wrzesniewski and Dutton (2001), two key job design precursors to job crafting are identified;

- The level and form of task interdependence – or the extent to which tasks are interrelated, so that changes to one task have an effect on others.
- The level of discretion or freedom to job craft.

Both of these precursors place autonomy as essential to job crafting behaviour and this is supported within emerging research evidence. Lyons' (2008) examination of the relationships between four personal characteristics adapted from the Wrzesniewski and Dutton (2001) study, and job crafting behaviour, found that perceived control [autonomy] is positively and significantly correlated with job crafting activity, although this is only a weak positive relationship (r = .26). However, analysis of the correlation between the qualitative job crafting

activities and the 'perceived control' score was not carried out and this may have strengthened the autonomy-job crafting relationship finding.

Leana et al. (2009) found a stronger, significant positive correlation between autonomy and job crafting (r = 0.61) in a study examining whether job crafting could be applied to teams and dyads as well as individuals, amongst early years workers. The study aimed to identify whether job crafting could be collaborative and what the antecedents and outcomes of collaborative job crafting could be. In adopting this approach, they remove the potential for negative effects of job crafting where individual needs diverge from organisational goals, as collaborative job crafting is more likely to be organisation improvement focussed. However the study, whilst incorporating many of Wrzesniewski and Dutton's (2001) concepts, focused specifically on 'task crafting', rather than encompassing all three processes of crafting. In addition, in considering the existence, antecedents and outcomes of collaborative job crafting, the study moves closer to the idea of management involvement in the process, and this is an element that is specifically and clearly absent in Wrzesniewski and Dutton's (2001) original definition. The research found that only autonomy and job status were significantly related to individual job crafting behaviours, whereas autonomy, interdependence of tasks, supportive supervision and strength of relationships with peers were positively related to collaborative job crafting.

Petrou et al. (2012) further support the positive relationship between autonomy and job crafting, examining whether job crafting could be a daily as well as an on-going activity. A weak, but significant positive correlation was found between both daily and on-going job crafting (ranging from 0.13 to 0.16 for day level crafting and 0.15 to 0.25 for on-going crafting). More recently, a meta-analysis of relationships between job crafting and individual differences, job characteristics and work outcomes finds a positive relationship across a range of studies between autonomy and job crafting (Rudolph et al., 2017). However, in common with Leana et al. (2009) study, the authors of both of these studies did not explore the full range of potential crafting activities, focussing instead on the conceptualisation grounded in Job Demands-

Resources theory, articulated by Bakker et al. (2012) to explore activities to seek resources, seek challenges and reduce demands.

There are no studies to date that find that job crafting takes place without autonomy, but a job does not need to contain high levels of autonomy for employees to engage in job crafting (McClelland et al., 2014). Therefore autonomy is positioned as a stable antecedent of job crafting. There are research gaps however. Firstly, despite a flourishing qualitative research strand, quantitative measures of job crafting based more thoroughly on Wrzesniewski and Dutton's (2001) conceptualisation have not yet been carried out, with the exception of the childcare sector specific study by Leana et al. (2009). In addition, many of the existing studies have been based on homogeneous study populations. Therefore, there is an opportunity to strengthen the extant literature with a quantitative study involving a cross sectional sample of staff across various hierarchical job levels, varied educational levels and integrating the Wrzesniewski and Dutton (2001) and Berg et al. (2010b) conceptualisation of job crafting. Finally, although there is emerging evidence from longitudinal studies suggesting causal relationships between autonomy and job crafting, this research is still in its very early stages, with much of the research being cross-sectional. Indeed, the meta-analysis of relationships between job crafting and individual job and work factors specifically highlights this as an area for further attention (Rudolph et al., 2017)

2.4.4.2 *The quality of relationships between leaders and their subordinates*

High quality relationships between leaders and their subordinates are ones which are characterised by mutual trust, respect and loyalty, which in turn lead to a high degree of shared obligations (Van Dam et al., 2013). These can all have a beneficial effect on work performance and on an employee's experience of their job. Because job crafting involves an employee initiating changes to their jobs without first seeking line-management approval, trusting relationships between leaders and their subordinates are fundamentally important. It is however,

outside of the scope of this thesis to review the entirety of the leadership trust literature. Instead therefore, selected examples that are particularly relevant are presented below to provide a case for focusing on leader-subordinate relationships further in this thesis.

Across the trust and leadership literature, trust between leaders and their managers is strongly related to autonomy, with higher levels of trust being associated with higher levels of autonomy (Seppala et al., 2011). One theory that has explored the development processes for trusting leader-subordinate relationships is Leader-Member Exchange (LMX) (Dansereau et al., 1975; Martin et al., 2015). LMX theory proposes that the interactions between a leader and their subordinate over time influences and shapes the quality of working relationship between the two. Leader-Member Exchange (LMX) was first articulated in 1975 by Dansereau et al. (1975) and offers some insights into the relationships between individuals and their performance. In its original conceptualisation, LMX was defined as "*an exchange relationship which develops over time during role making activities" (Dansereau et al 1975, pp 46)* and recent research has confirmed the changeable nature of LMX (Narhgang et al., 2009). The underpinning concept in LMX is that the two way relationship that an employee has with their manager is influential in a range of measures of performance, such as; creative work involvement (Volmer et al., 2012) which is one of the essential elements of job crafting; turnover; job satisfaction and supervisor rated performance (Dansereau et al., 1975). Members who form 'good' relationships with their managers are defined as 'IN', a state which is positively related with increased trust, increased rewards, increased interactions with managers and increased support (Dienesch & Liden, 1986), and the opposite is true with members who form 'poorer' relationships with their managers, defined as 'OUT'.

There are a number of ways in which LMX and trust can be related to job crafting. First, one of the fundamental principles of LMX is that of 'role making'. Role making is based on the idea that a person's job role and expectations are usually ambiguous, leaving room for individual negotiation. In the LMX literature, negotiation is viewed as an informal process, which develops

as the relationship between the leader and the member develops. Whilst this overlaps strongly with the idea of the private role adjustments in job crafting, Dansereau et al's (1975) original research found that this 'negotiation latitude' was related to the strength of relationship between leaders and members, with 'IN' employees being given greater negotiation latitude [negotiated autonomy] than 'OUT' employees. This is further supported by Hornung et al. (2010) who use the term i-deals (idiosyncratic deals) to encapsulate the formally negotiated 'task crafting' that employees undertake, finding that when LMX is higher, successful negotiation of tasks is also higher. Job crafting can be interpreted as representing individual role-making, which is enhanced by good LMX in two ways. First, an employee's ability to customise their job role is fundamental to both LMX and job crafting. Secondly, this ability for customisation is enhanced by the increased autonomy that good LMX relationships generate.

Additionally, LMX is positively associated with a range of performance measures such as creative work involvement (Volmer et al., 2012), job satisfaction and staff turnover (Vecchio & Norris, 1996), and supervisor rated performance (Dansereau et al., 1975; Dunegan et al., 2002). A recent meta-analysis of the influence of LMX on performance found that LMX is positively related to task performance and to citizenship behaviours, and negatively related to counterproductive work behaviours (Martin et al., 2015). All of these performance measures are also associated with job crafting. However direct research linking job crafting and LMX is scarce. For instance, although existing research evidence shows that the explicit and public negotiations that occur in job and task crafting are influenced by the relationships between leader-member dyads, the private role adjustments made during crafting has only one study directly associated with it and two other studies which draw conflicting conclusions about LMX in relation to crafting. In Leana et al's (2009) examination of whether crafting could be a collaborative as well as an individual activity, they find no evidence to support the link between supportive supervision and individual crafting behaviours. This confirms the private and non-negotiated nature of job crafting. However, this is in direct contrast to Van Dam et al. (2013) who, in their exploration of the influence of LMX as an antecedent of crafting, find a significant

positive relationship between LMX and job crafting. They find that employees report more job crafting when LMX relationships with supervisors/managers are of high quality. However, the authors acknowledge that due to the research being conducted at one time only, the direction of the relationship was not able to be shown. In addition, the study population was highly educated (83% with a University education), which could lead to the assumption that the sample is skewed towards professionals, who would, according to Farr-Wharton et al. (2011) be expected to have higher levels of autonomy, but it is not possible to determine this.

Alongside this conflict, Berg et al (2010) find that lower ranked employees who wanted to craft their jobs to create variety or specialisation, deliberately acted to build trust with their supervisors (or alternate supervisors where they perceived a supervisory block), to enable them to exercise greater autonomy and power, thereby creating sustainable opportunities to job craft. This is categorised by Berg et al (2010) as a type of crafting in itself – proactive relational crafting, which subsequently creates opportunities for task crafting. Taken together, these three studies suggest that the relationship between LMX and crafting may not be a simple one, and is not yet clearly understood. It seems that good LMX relationships may give rise to improved autonomy, a core condition for crafting to take place, and may also directly lead to and sustain, crafting. However, further research is needed to extend current understanding of these relationships.

Outside of the LMX research field, broader relationships between trust and autonomy are being examined in job crafting research. For instance, an emerging strand of research is studying the relationship between 'perceived opportunities to craft' and job crafting behaviour. Although grounded within the JD-R model, the items used to measure opportunities to craft in a recently validated scale all include the statement *'at work I have the opportunity to…'*, with opportunities spanning task adjustment, relational adjustment, role expansion and work-meaning adjustment (Van Wingerden & Niks, 2017). Opportunity to adjust implies autonomy within the job role because employees who feel they have freedom and autonomy in their job

roles are likely to perceive these as giving opportunities to craft their jobs (Van Wingerden & Poell, 2017). Further, research around different leadership styles finds that servant leadership is related to job crafting, proposing that some of the ways that servant leaders develop trust contribute towards enhancing the potential for job crafting. This includes empowering their subordinates to maximise their potential by providing autonomy, and by providing support for employees to develop mastery of new skills, thus enhancing self-efficacy (Bavik et al., 2017).

There is therefore, enough evidence to conclude that relationships between leaders and their subordinates are not only important in relation to job crafting, but in light of the ambiguity of findings, this area warrants further attention.

2.4.4.3   *The influence of climate on job crafting*

In order to understand the influence that climate has on work behaviour, analysing the mechanisms through which climates exert their influence is helpful. Two widely accepted definitions of 'work' or 'organisational' climate provide a useful starting point for this analysis;

"*shared perceptions of and the meanings attached to policies, practices and procedures employees experience……and the behaviours they observe getting rewarded and that are supported and expected*" *(Schneider et al., 2013, p362).*

Anderson and West (1998) simplify this with their definition of climate as *"the shared interests that exist and exert influence on employees' behaviour"* (p236). Both of these definitions suggest that a climate is more than just behaviours that are observed, and that employees will also evaluate their own and others' behaviour based on implicit and explicit reactions to differing behaviours, with the results of this evaluation shaping future actions. In effect, a climate is the creation of a series of 'social norms' around a particular action or behaviour. Social norm theories suggest that behaviour has its roots in conformity, and that an individual's

or a group's behaviour is shaped by an understanding of what other people do (Burchell et al., 2012). Reasons for conformity include either an agreement with and approval of others' decision making, or because individuals want to be liked and accepted by others, or because individuals want to avoid negative social consequences of non-conformity (Azar, 2004). Across a range of 'context specific' social norm measures, two types of 'norm' are common; injunctive (or subjective) norms which are influenced by either what our personal values are or what others think of the behaviour in question. Secondly, descriptive norms, which are formed based on our observations or perceptions of the frequency or prevalence of a particular behaviour (Burchell et al., 2012; Lazarus et al., 2012). More specifically, social norms theory divides these two types of norm further, with descriptive norm being made up of 'perceived prevalence' and 'observed prevalence', and injunctive norms being made up of 'gaining social approval' and 'avoiding social disapproval'. Therefore, any measure of context or outcome specific climates should include questions which explore subjective and objective norms around the particular context or behaviour under examination.

The effects of organisational climate have been widely researched and found to exert an influence on work behaviours. For instance, a supportive organisational climate has been found to mediate the relationship between Psychological Capital (PsyCap) and performance (Luthans et al., 2008b), in the manufacturing industry; a 'climate for autonomy' has been found to be linked to antecedents of performance such as stress and work demands (Hirst et al., 2008), and Brown and Leigh's (1996) conceptualisation of 'psychological climate' includes freedom of self expression, flexibility in job roles and job challenge.

2.4.4.3.1   Why climate is important in job crafting

The underlying mechanisms which influence the development of a climate are clearly relevant in relation to job crafting, because job crafting represents creative and self-initiated behaviours that are not explicitly identified in the employees' formal job role. The definitions of climate

suggest that an employee would not engage in job crafting if it was perceived or observed to be an unacceptable behaviour. Thus, the acceptability and normalisation of creative behaviours are important conditions which enable job crafting. Wrzesniewski and Dutton (2001) allude to the role of leadership and management in normalising these behaviours, in their identification of one of the key conditions that enables job crafting; *"the level of discretion or freedom to job craft implied by monitoring systems in the job"* (*pp184).* In relation to job crafting, managers create a supportive climate for crafting by providing supportive supervision, giving helpful feedback and providing employees with the resources and information they need to do their job (Leana et al., 2009; Van Wingerden & Poell, 2017). They also create a supportive climate by developing trusting relationships with their subordinates (Van Dam et al., 2013).

Solberg and Wong (2016) find further support for the relationship between a supportive climate and job crafting with their finding of a positive relationship between leaders who have low needs for structure, defined as a '*personal preference for predictable and unambiguous environments*' (p716) and job crafting. Thus, leaders who are more comfortable with uncertainty will be more tolerant of job crafting behaviours, which contribute towards creating a supportive climate for crafting. This combination of supportive supervision and trust enables the development of psychological safety for innovation and creativity, which are two concepts that are not only embedded within climate research (see Climate for Psychological Safety (Brown & Leigh, 1996), Team Climate Inventory (Anderson & West, 1998) for examples), but are fundamental to employees feeling able to job craft.

The influence and normalisation of expectations of others on work behaviours which is seen in the definition of a climate provided by Schneider et al. (2013) (see above), is clearly apparent in the results of recent qualitative research into job crafting carried out by Berg et al. (2010b). This study finds that both higher and lower ranked employees report that expectations of their job role restrict the extent to which they can craft. Lower ranked employees reported feeling constrained by the expectations of *how others feel* they should spend their time, and higher

ranked employees report constraints due to *their own* expectations of how they feel they should spend their time.

Despite the conceptual alignment between job crafting activities and work climates, no research to date has examined whether a climate for crafting may exist, and if it does, whether it acts as an antecedent of job crafting.

2.4.4.3.2   Differentiating a 'climate for crafting' from other measures of climate

The challenge with using existing climate measures is that the dimensions included within them are not necessarily compatible with the self-initiated and private nature of job crafting. Taking supervisory support as an example, Gershon et al. (2004) review of climate measures related to healthcare organisations finds that leadership is a key dimension in six out of the ten climate instruments analysed, leadership facilitation is found to be a dimension of a Psychological Climate (Brown & Leigh, 1996), supervisory support is proposed as a dimension in the 'organisational climate measure' (Patterson et al., 2005). Thumin & Thumin (2011) do not position management support as an element of their proposed Organisational Climate measure, however, this measure is based on the broader definition of climate proposed by Schneider et al. (2013), which examines organisational attributes, rather than a focussed conceptualisation which can be used to explore climate related to specific issues, such as 'climate for safety', and in this case 'climate for crafting.

Because job crafting is an individually and privately managed work behaviour, while there is some overlap between the conceptualisation of a climate for crafting and those for innovation, teamwork and psychological climate, there are distinct differences too. The emphasis on ownership of organisational decision making, and problem solution evident in other constructs of climate is not emphasised in this conceptualisation. The construct of 'climate for work group innovation' includes a strong emphasis on shared objectives and vision, and frequency of

interaction. Whilst interaction frequency is also relevant in the LMX literature, this concerns interactions between leaders and members rather than interactions between teams and colleagues, and due to the 'private' nature of job and task crafting, frequency of interaction is not relevant.

Therefore, in this thesis I propose that a climate for crafting may exist which can be conceptually separated from other existing measures of climate, drawing on the private and self-initiated nature of job crafting, but specifically focussing on the extent to which it might encourage crafting behaviours.

2.4.4.4   *Uncertainty as a stimulator for job crafting*

Uncertainty can occur at a number of different levels. There is external uncertainty, where the market environment, raw materials or technology change, either due to advancements in technology, changes in the availability of raw materials or changes in market led demand. The impact of these external changes can be drastic, resulting in large macro level changes which aim to minimise the impact of uncertainty and maintain productivity at the organisational level. These changes may include strategies such as job re-design, socio-technical design, human resource management, high performance management and total quality management. Alternatively, uncertainty can occur at a more individual (micro) level, when the impact of 'macro' level changes mean that an individual's work tasks or immediate work structure need to change in response (Nelson et al., 1995).

At an individual level, which is the level at which job crafting activity takes place, 'uncertainty results in variability and lack of predictability in work tasks and requirements, including what has to be done and how to do it' (Wall et al., 2002). The general idea is that uncertainty causes changes in an individual's tasks, specifically in the extent to which a task can be 'routinised'. This causes a problem because when the causes of challenges do not follow a set pattern, the

solutions to these challenges are more difficult to identify, analyse and solve (Wall et al., 2002). This inability to address changes in tasks is defined as 'operational uncertainty'. An additional challenge that employees face during uncertain times is the "*level of strain associated with levels of ambiguity about the existence and nature of [an employee's] future role in the company*" (Nelson et al., 1995). Taken together, an individual focus on uncertainty concerns an employee's perceptions of their role, and also the challenges that they face in carrying out their role.

Research exploring the effects of uncertainty has taken two approaches. Firstly, an approach which is based on the idea that in uncertain times, there is potential for it to have deleterious effects on employee outcomes, such as job satisfaction (Nelson et al., 1995; Cullen et al., 2014), which may impact negatively on performance. However, uncertainty is not necessarily always a negative factor. Uncertainty may provoke individual responses, and there is increasing evidence that job crafting may be provoked by uncertainty. To elucidate, the idea that emotional stress or dysfunction provokes creativity (Amabile et al., 2005) aligns with a research strand which focusses on the positive impact of micro level uncertainty in relation to the individual strengths that employees may utilise to perform at their best in challenging times (Nelson et al., 1995). For instance, operational uncertainty requires an employee to use their initiative to be more creative and adaptable in how they go about their job, as the routinisation of both problems and solutions has been reduced (Griffin et al., 2007). In relation to job crafting, this suggestion draws on the extant research which finds that individual attributes such as readiness to change, proactive personality and creativity are antecedents of job crafting (Lyons, 2008; Tims & Bakker, 2010; Demerouti et al., 2015). Thus, a work environment which is more uncertain may stimulate greater creative behaviours to address the challenges in this environment, of which job crafting is an example. Furthermore, there is evidence that the actions that employees take to job craft change with uncertainty. Lu et al. (2014) find that the relationship between relational crafting and engagement strengthens under conditions of high job insecurity, indicating that when employees are fearful for their jobs, they will actively seek to develop different

relationships at work. However Lu et al. (2014) found that this strengthening effect did not hold for physical job crafting, which they define as '*changing task boundaries*' (p144).

In addition to individual responses however, Wall et al. (2002) argue that, in some circumstances, specific interventions (variables) are needed to maximise the potential for performance improvement in the presence of operational uncertainty. For instance, although uncertainty may stimulate creativity, enacting this creativity can only occur when an employee has the space [autonomy] to be creative in their jobs. Wall et al. (2002) suggest that employers recognise this, as, during uncertain times, employers often respond to operational uncertainty by considering job design and human resource management. Popular amongst changes is the move towards empowerment, such as giving employees (usually lower ranked rather than senior ranked) more decision making authority and autonomy over the execution of their primary tasks, with the goal being to improve performance by improving engagement. Thus, in conditions of high operational uncertainty, increasing autonomy has great potential to increase an employee's ability to carry out their job with more creativity. This relationship has been found by Wall et al. (2002), who show that in the relationship between employee 'control' and performance, where there is a high level of operational uncertainty, the performance improvement is high, but where there is a low level of operational uncertainty, there are no relationships between control and performance. They therefore position operational uncertainty as a key contextual moderator in the 'control-performance' relationship. They further find that the effect of empowerment initiatives (focussing in increasing the levels of control of the workforce) on performance are influenced by uncertainty, in the same way as the relationship between control and performance identified above. Therefore, instability and operational uncertainty seem to create conditions for performance improvement under some circumstances. The same relationship is true also of job crafting. To date, there are no studies which find that job crafting takes place in the absence of autonomy, and most studies show that, within the boundaries of the job, higher levels of autonomy lead to higher levels of job crafting (Berg et al., 2010b; Wrzesniewski & Dutton, 2001; Leana et al., 2009; Petrou et al., 2012; Solberg & Wong, 2016).

Furthermore, although enhancing autonomy is one strategy used by organisations to support high performance during uncertain times, another strategy is to empower employees through enhancing their knowledge. Wall et al (2002) suggest that one of the reasons that operational uncertainty influences the 'empowerment-performance' relationship is due to the psychological interpretation of operational uncertainty. They suggest that a lack of knowledge (caused by the unpredictability of difficulties and the subsequent problems in analysing and addressing the causes of these) means employees' problem solving skills have to be high. One way of developing employees' problem solving is to give them more knowledge, thereby empowering them to be able to respond to the challenges. Therefore, they argue that empowerment techniques including knowledge development, knowledge application and also proactive orientations, enable operational uncertainty to be overcome, with the subsequent improvement in performance. This relates well to the finding that supportive management relationships, which can include ensuring employees have the information they need to do their job, is an antecedent of job crafting (Leana et al., 2009). It also relates well to recent findings which show that having a manager who has a high tolerance for ambiguity and uncertainty is positively related to subordinates' job crafting (Solberg & Wong, 2016).

2.4.4.5 *Bringing it all together – conceptual linking of antecedents*

To summarise, section 2.4.4 has presented evidence to support that leader-subordinate relationships, the work climate, autonomy and uncertainty are all important correlates of job crafting. With the exception of autonomy, which has been integrated into the formative definitions of job crafting and widely studied, the impacts of the other three correlates are only now beginning to be studied. However, in this literature review, I argue that all four of these are related to one another. I have presented evidence to support the position that job crafting is one of the ways that employees and employers respond to the challenge of uncertainty and have shown that managers' and employees' responses to uncertainty are strongly linked to autonomy.

I have shown that management actions to respond to uncertainty may contribute towards creating a climate for job crafting. I have also shown that, irrespective of the level of uncertainty, managers play a central role in creating positive and supportive climates that encourage job crafting behaviour. Finally, I have shown that having trusting relationships between leaders and their subordinates exerts a positive influence on the integration of autonomy into job roles, on the development of a climate for crafting, and on the responses to uncertainty.

2.4.5 Positive outcomes of job crafting

Understanding correlates and antecedents of job crafting is important for both individual employees and employers, in order that they can create and utilise the conditions for job crafting to take place. However, a clear understanding of potential outcomes contributes towards creating a compelling case for actions to adjust the work environment, the work processes or individual work behaviours. This section of the thesis will now consider the current evidence in relation to outcomes of job crafting and identify potential gaps in this evidence base. Before moving into considering outcomes however, it is worth a brief reminder that the core motivations for job crafting are to enhance work meaningfulness or strengthen work identity, and it is through this mechanism that many of the outcomes arise.

The current evidence around outcomes of job crafting is separated very clearly into those which utilise the Job Demands-Resources (JD-R) conceptualisation developed by Tims et al. (2012), and those which utilise a conceptualisation more closely grounded in Wrzesniewski and Dutton's (2001) original conceptualisation. This creates a difference in relation to outcomes, as the research based on JD-R focuses on the outcomes arising from reducing demands and increasing resources, whereas this intermediary step is not included in studies outside of this conceptualisation.

There are a limited number of studies which examine outcomes of job crafting within Wrzesniewski and Dutton's (2001) conceptualisation, the first of which finds that job crafting increases wellbeing (Slemp & Vella-Brodrick, 2014). However, this study was cross-sectional and thus, further research is needed to be able to be confident with attributing causality. A second study was longitudinal and found that job crafting improved person-job fit (Niessen et al., 2016), but used an as-yet-unvalidated scale to measure job crafting. However, similar findings were also reported in a cross sectional qualitative study by (Berg et al., 2010b). The association between person-job fit and job crafting was also expected as this is clearly identified as one of the important motivators of job crafting within Wrzesniewski and Dutton's (2001) conceptualisation.

Within the JD-R conceptualisation, increasing challenges and reducing demands is positively associated in cross sectional studies with increased creativity (Demerouti et al., 2015), and in longitudinal studies with increased engagement (Harju et al., 2016; Petrou et al., 2012; Tims et al., 2012), reduced boredom (Harju et al., 2016), and performance improvement based on both colleague ratings of performance (Bakker et al., 2012) and supervisor ratings of performance (Cheng et al., 2016; Rudolph et al., 2017). However, as previously argued, this conceptualisation does not capture all the dimensions of job crafting and therefore, more research examining outcomes of job crafting is still needed.

2.4.6 The darker side of job crafting

Across the literature on job crafting, both within and outside the JD-R conceptualisation, there are hints about potential negative outcomes arising from job crafting, and it is important to note here that these are suggested rather than actual evidence based findings. The first is the relationship between work meaningfulness and job crafting. Johns (2010) draws attention to the conflict which arises when a job has such high significance or importance, that opportunities to change that job are restricted as this could expose the job holder or the recipient of the job

holder's work to unacceptable consequences. Thus, job crafting in this type of role would be perceived as a negative deviation from the formal and structured requirements of the role. Therefore, although the job holder may understand the value of the job, the opportunity to shape the job to better align with their individual values may not exist or may be strongly discouraged.

Furthermore, the association between autonomy and performance is not always positive and thus, job crafting which enhances autonomy may not automatically lead to improved performance. This is particularly seen at team, rather than individual level (Langfred, 2004), with high individual autonomy being found to have a negative effect on team performance, even when there was high trust between leaders and their subordinates. Chua and Iyengar (2006) also highlight a number of potential negative consequences of high levels of autonomy, including choice overload which particularly affects employees who have lower levels of education and is related to the capacity of the employee to interpret and act with autonomy. They also highlight the difficulty that empowerment and autonomy may create for employees for whom a cultural norm of collective benefit and collective goals is dominant, such that individual autonomy represents a deviation from the cultural norm.

Other potential negative effects are related to the positive effect that job crafting has on engagement. Despite acknowledgement of varying conceptualisations of engagement (Anthony-McMann et al., 2016), engagement is commonly characterised in relation to the energy that one is able to apply to ones job, which is typified by vigour, dedication and absorption (Bakker et al., 2008). The potential for, and circumstances under which job crafting seems to be implicated in negative outcomes is considered by Halbesleben (2011) and Bakker et al. (2011), with conclusions being drawn that this arises where employees are so engaged in their work that they are not able to detach psychologically from it. This causes problems at work and spills over into the home life. This negative relationship is suggested by Carse et al. (2017) in interpreting their finding that the 'absorption' aspect of engagement is negatively associated with health behaviours and with retirement planning for older workers. Halbesleben (2011) suggests that

care needs to be taken with regards to job crafting, to ensure that employees, in maximising their engagement, do not increase their risk of burnout.

2.5 TASK CRAFTING AS A SPECIAL CASE

Up to this point, this literature review has focussed on job crafting as a whole. However, with reference to the literature previously presented, I now make the case that the task crafting dimension of job crafting is particularly important in relation to promotion, and warrants the specific focus in this research. To begin, I present a brief rationale for the focus on task crafting as opposed to cognitive or relational crafting. Then I present an overview of the current evidence which supports a conceptual link between task crafting and promotion, based on the potential mechanisms by which task crafting leads to two different types of performance improvement. Finally, I present a synthesis of known correlates and antecedents of task crafting that have informed the development of the theoretical model.

2.5.1 A focus on task crafting rather than relational or cognitive crafting

Fundamentally, task crafting concerns changes to work tasks that employees voluntarily undertake (Wrzesniewski & Dutton, 2001). Examples of task crafting include employees taking on additional roles that are not explicitly included in their job description because they enjoy them, with the consequence that this becomes part of their job (Berg et al., 2008), or employees developing additional resources to support their job and their colleagues (Lyons, 2008), or employees changing the amount of time, effort and creativity they exert in their tasks (Lin et al., 2017). Drawing on the original conceptualisation of job crafting by Wrzesniewski and Dutton (2001), tasks are the key elements by which individual employees achieve their job goals and, as such, form the "*building blocks of the relationship between employees and the organisation*" (Wrzesniewski & Dutton, 2001, p179). Such job changes require creativity and innovative thinking, which make task crafting a very active form of job crafting which allows an employee to demonstrate that they are able to work above and beyond their current level.

There are four key reasons why task crafting forms the focus of this study, rather than relational or cognitive crafting. First, there is good evidence that task crafting is associated with performance improvement (McClelland et al., 2014; Lin et al., 2017). Second, there is also good evidence that improved task performance leads to more positive supervisory appraisals (Weseler & Niessen, 2016, McClelland et al., 2014). Third, because task crafting involves making changes related to task completion, it is a visible form of job adjustment that may be noticed by both managers, and colleagues, thus contributing towards the development of a work climate where such creative and proactive behaviour is accepted and normalised (Bakker et al., 2016; Mäkikangas et al., 2016). Finally, task crafting type actions are typical among theories which explore actions taken to enhance career development, implicating task adjustment in promotion outcomes (Bayl-Smith & Griffin, 2015; Bayl-Smith & Griffin, 2018). The current research evidence supporting each of these aspects forms the next section of this chapter. However, I will first set out a rationale as to why both relational and cognitive crafting are not being pursued in this thesis.

Relational crafting is another dimension of job crafting, which involves employees changing who they interact with at work or how they interact with others at work (Wrzesniewski & Dutton, 2001). The results of these changes are alterations in the social environment at work, which contribute towards changing the employees' sense of work meaningfulness and work identity. However, I suggest that although relational crafting is an important element of job crafting, it does not have the same potential to influence individual promotion prospects as task crafting.

This is because the visibility and personal attribution of task and relational crafting actions is subtly different. For instance, Vough et al. (2017) highlight an example where an employee who identifies inefficiencies in her work may identify a solution to resolve the inefficiencies, but in order to implement the solution, may need to involve others in the process of making the change, to avoid resistance or refusal to implement the changes. This example is used by Vough et al.

(2017) to illustrate the importance of social processes and understanding of social contexts in making proactive changes at work. However, although the visible actions that arise from the task alteration can be directly attributed to the individual employee, the social behaviour and social processes that enable this change may not be directly attributed back to the individual employee and as such, may enhance team visibility rather than individual visibility. Thus, this example illustrates that task crafting, rather than relational crafting, has greater potential to enhance individual visibility, and is easier for managers to attribute to individual performance improvement.

Additionally, the motivations for relational crafting are linked to changing the social environment at work, and this may not be directly linked to task performance. For instance, an employee may choose to interact with a different team, as they identify something that has meaning to them in relation to their work identity within the new team. This is demonstrated with Wrzesniewski and Dutton's (2001) example of hospital cleaners interacting with patients and their families in order to position their work identity as contributing to care. However, while this may result in a change in the employees' sense of work meaningfulness and work identity, the work tasks remain unaltered. Other examples of relational crafting from within the JD-R conceptualisation include *"eat[ing] lunch with other employees or meet[ing] with other employees for social drinks after work"* (Tims et al., 2013a, p232). However, increasing social resources in this way has been found to lead to higher levels of employee wellbeing (Tims et al., 2013b), which as previously stated, could enhance employee visibility to those involved in promotion decisions. On balance, however, relational crafting may not be associated with higher levels of individual visibility, and may not result in actual changes to work tasks. Considering this in relation to promotion, my proposition here is that task performance is an important contributor to promotion decisions, and thus, task crafting has greater potential to influence this aspect than relational crafting.

Cognitive crafting is separated out from these two other dimensions of job crafting, as it represents a change in thought processes rather than direct actions. It is clear that cognitive crafting is an important process of job crafting, however while such a change in thought processes could lead to action (such as task or relational crafting), the reflective and adaptive nature of cognitive crafting means it is the least likely of all three forms of job crafting to be visible to others. For example, Wong and Tetrick (2017) position cognitive crafting in particular as a strategy used by older workers, to create more meaning in their job when opportunities for task or relational crafting are not available. Such reframing may lead to an employee experiencing enhanced engagement and the associated positive outcomes of improved engagement (Bailey et al., 2017; Griffin et al., 2007). However, recent research exploring the impact of the three dimensions on performance find only task crafting is positively associated with supervisor rated performance, with neither relational nor cognitive crafting showing significant positive associations (Weseler & Niessen, 2016).

2.5.2   Task crafting and promotion

Within this thesis, I propose that task crafting may be linked to promotion because task crafting improves performance. However, the ways in which task crafting enhances performance are diverse, and subsequently, the impact of performance improvement is also diverse.

To illustrate this, I draw on Borman and Motowidlo's (1993) two dimensions of performance; task performance and contextual performance. Task performance concerns activities that are directly related to the duties required by the job and are usually found within the job description. Contextual performance represents employee behaviours that contribute towards the social and psychological context of the organization and are not directly related to core job and task functions. Evidence from within and outside the task crafting literature demonstrates that task crafting enhances both task and contextual performance.

2.5.2.1 Linking task performance, task crafting and performance appraisal

Fundamentally, because task crafting involves making changes to actual job tasks, it is the most likely of the three forms of job crafting to have outcomes that are visible. In relation to task performance, there is early evidence that task crafting leads to enhanced task performance (McClelland et al., 2014). Following on from this, there is strong evidence that enhanced task performance is associated with more positive supervisor appraisal (Weseler & Niessen, 2016; McClelland et al., 2014). Thus, if task crafting leads to enhanced task performance, this may lead to enhanced supervisor appraisals, which links to promotion where the appraisals are positive.

2.5.2.2 Linking contextual performance, task crafting, and performance appraisal

Contextual performance outcomes involve employees engaging in discretionary behaviours which are beneficial either to the organization as a whole or to individuals within the organization, but which are outside of their formal job roles. Such behaviour is referred to as organizational citizenship behavior (OCB) (Borman & Motowidlo, 1993; Podsakoff & MacKenzie, 1997) and it is typically associated with positive managerial appraisals of work related performance (c.f., Podsakoff et al., 2009). Antecedents of OCB include person-job fit (Han et al., 2015; Lin et al., 2014; Farzaneh et al., 2014), and employee engagement (Babcock-Roberson & Strickland, 2010; Runhaar et al., 2013). Therefore, if task crafting has a positive effect either on OCB's directly, or on the antecedents of OCB's, then it is plausible that task crafting contributes to enhanced performance through its effect on OCB's.

The evidence in support of a link between OCB and task crafting is as follows. In relation to direct effects, OCB are found to be an outcome of task crafting, particularly under conditions of under-employment (Lin et al., 2017). Indirectly, task crafting affects OCB by improving person-job fit (Farzaneh et al., 2014). Additionally, task crafting affects OCB indirectly through engagement, characterised by a sense of vigour, absorption and dedication (Demerouti et al.,

2001). A recent study of contact centre teams found that task crafting relates positively to engagement which, in turn, was found to predict supervisor rating of performance (McClelland et al. (2014). Evidence suggests that the positive relationship between engagement and positive appraisal is due to the effect of engagement on contextual performance. For instance, engagement is associated with a range of positive work outcomes including employees feeling energised, motivated, and enthusiastic (Bakker et al., 2011). Engaged and enthusiastic employees are more likely to 'go the extra mile' in their jobs and work beyond their immediate job descriptions, which results in enhanced task and extra role performance (Bailey et al., 2017; Griffin et al., 2007). Further, engaged employees are also more likely to have good work-related psychological wellbeing, which, in turn, is associated with extra-role performance such as organizational commitment and OCB (Avey et al., 2011; Wright et al., 2007). It is not surprising therefore, that work-related wellbeing and engagement are associated with positive supervisor appraisals (Daniels & Harris, 2000)

Taken together, when employees are enjoying their jobs, and are enthusiastic and motivated at work, they are more likely to be creative in how they go about their jobs, more likely to go beyond their job role to make a positive contribution to the organization, and are more likely to have improved performance. Each of these is visible within the workplace and contributes towards receiving positive supervisory appraisals. Thus, I have shown that task crafting has potential to affect OCB both directly, and indirectly through the pathways of person-job fit, engagement and wellbeing. Given the links bewteen OCB and positive appraisals, it is therefore plausible that employees who are task crafting will be more likely to be promoted.

2.5.2.3   Clarifying the meaning of promotion

It is important at this point to provide some clarity as to the meaning of promotion. Defined in the Oxford English Dictionary as *'the act of raising someone higher to a more important position or rank'* (Oxford English Dictionary, 2007), promotion is when an employee gains a

formal lift to a role of higher status, responsibility, and rank. Usually, promotion is accompanied by an increase in pay, but not necessarily so according to this definition. As such, promotion is a very visible outcome which may be initiated through a formal application process by the employee, or may be initiated by a recommendation from a manager. Such definitions however, do not take account of the potential for differences in understanding of promotion across different work sectors. Therefore, an exploration of the potential for different understandings of promotion has been included in the explanation of measures used in this study (see Section 4.4.2.6). This is supported with an analysis of different promotion procedures used within the organisational context for this study (see Appendix B).

2.5.3 Climate as a contextual enabler of task crafting

In addition to the individual and contextual factors affecting work performance, I also propose that an employees' work climate may have an effect on individual employees' task performance, and in fact may stimulate task crafting. What makes task crafting particularly relevant in relation to work climates is the emphasis, as seen in current definitions of climate, on observable behaviours. If an employee changes how they behave in relation to their tasks at work, this is likely to be noticed by their colleagues, and as previously mentioned, their managers. If, as a consequence of this change, the employee appears more engaged, is performing at a higher level, and is being rewarded for this by their manager, as previously mentioned, it is also likely that this will be noticed by colleagues. In this way, task crafting has potential to create new norms around task completion which will contribute towards creating a climate that is supportive of task crafting.

There are two research areas that provide support for this relationship. The first concerns mechanisms for enabling employee proactivity. Proactivity is a form of work behaviour that an employee engages in to change their job situation (Parker et al., 2006), and task crafting is identified as a form of both proactive and adaptive work behaviour (Berg et al., 2010b). When

managers step back from detailed involvement in an employees' task behaviour, and create a supportive and encouraging environment, proactive behaviour increases (Wu & Parker, 2017). Therefore, individual managers' behaviours influence employees' proactive behaviours, and contribute towards creating a work climate where employees have the latitude to make changes to their tasks.

However, although the above example concerns the impact of leadership and management behaviour at an individual employee level, the research on task conflict at team level provides support for the influence of a work climate on proactive task behaviours at a broader level. Task conflict at team level is generally defined as disagreement among members of a team that concerns decision making, differences of opinion and different viewpoints about task completion (Bradley et al., 2012). There is potential for task conflict to have a negative effect on performance, as it disrupts team communication and information sharing, as well as increasing the potential for interpersonal conflicts (De Clercq et al., 2017). However, as long as the level of task conflict is not too high, it can stimulate creativity and improved decision making (Bradley et al., 2012; Li et al., 2018), which subsequently enhances task performance. Consistent with the fundamental motivations for job crafting, task crafting represents an employee both adaptively and proactively making changes to their work tasks where they perceive a mismatch between their experienced and desired work meaningfulness or work identity. This mismatch is in essence a form of task conflict for the employee, with task crafting being used as a means to resolve this conflict.

At a team level, when task conflict is present, there is already evidence that the work climate affects task performance. For instance, at team level, task conflict has been found to improve performance, where a climate for psychological safety is present (Bradley et al., 2012). The importance of a climate for psychological safety here is that it provides an environment where individual members of a team can take greater risks, in the knowledge that risk taking behaviour will not be damaging to the cohesiveness of the team and consequently, will not have a negative

effect on team performance. A climate for psychological safety also creates safety for voicing ideas, seeking feedback, giving honest feedback, collaborating in new ways and experimenting in the workplace (Newman et al., 2017; Edmondson, 1999; Brown & Leigh, 1996).

At an individual level, if people who are task crafting are being positively rewarded at work as well as being happier, more productive and more engaged at work, both their task crafting actions and the rewards associated with this (personal and those associated with positive management appraisals) will be noticed by colleagues. Applying social norm theory to this cycle of action and outcome suggests that task crafting will become something that people want to do at work, and a climate which is supportive of crafting will begin to develop.

Research is beginning to consider the impact of job and in particular task crafting on the work climate, but this is not yet explicit and is inferred from the focus on the impact of job and task crafting on work and team performance. This focus on team crafting has been a feature of job crafting research since its early inception. Leana et al (2009) was the first to propose and find that not only does collaborative crafting take place, but it is influenced by the extent to which an employee's job is interdependent on others' roles, and the extent to which the employee is integrated into the social structure of their organisation. Both task and social interdependence are features which influence the development of a work climate, as previously explained.

Recent research more specifically attributes the impact of collaborative crafting on performance to the development of a climate which is supportive of crafting (Mäkikangas et al., 2016), although such a climate is defined more around one which provides clarity of team targets and supportiveness for innovation (Mäkikangas et al., 2017), rather than focusing specifically on a climate for crafting. These two studies also focus on the conceptualisation of job crafting which is located within the JD-R model, and thus do not specifically separate out task crafting actions from job crafting as a whole. Also from within the JD-R conceptualisation, recent research again implicitly suggests the development of a climate for crafting with the finding that when

crafting behaviour is modelled by one member of a dyad, it positively influences the crafting behaviour of the other member (Bakker et al., 2016). The focus on the impact of task crafting on team work-performance is also present in research by McClelland et al. (2014) which examines the impact of collaborative crafting on work team performance. This focus on team level outcomes strongly embeds Schneider et al.'s (2013) recommendation for using attitudinal data, but aggregating analysis of outcomes to team or work unit level. In this sense, McClelland et al.'s (2014) research is the first to concentrate specifically on task crafting and although not explicitly measuring the climate, is the first to find positive evidence that indicates the existence of a climate for task crafting, rather than job crafting as a whole.

As indicated above, it is now timely for research to begin exploring the existence of a climate for crafting explicitly rather than implicitly. As identified by Schneider et al. (2013), there are two potential avenues for this exploration. First, data could be gathered and analysed in groups relating to work teams/units and concentrating on organisational outcomes. Second, data could be collected from individuals, to explore their perceptions of the work climate in relation to their work unit/team. Because job and task crafting are individual activities, which are self-initiated and privately enacted, it is plausible that crafting activities are influenced by individual employees' perceptions of their working climate. As such, an approach which seeks to explore perceptions of the work environment in relation to crafting is appropriate for this research. However, for consistency with Schneider et al.'s (2013) recommendations, exploration of perceptions should be grounded within a 'work unit' or 'team' context. Adopting a perception based approach to measuring climate is not new within climate research. A number of previous climate measures have adopted this approach, including the 'team climate inventory' (TCI) (Anderson & West, 1998), the 'psychological climate scale' (Brown & Leigh, 1996) and the 'climate for innovation' (Siegel & Kaemmerer, 1978). Each of these climate measures incorporate elements that measure psychological safety for doing things differently and this is an important concept in relation to job and task crafting because task crafting actions are variations from the usual or agreed way of carrying out tasks at work.

2.5.4 Task crafting as an activity that is achievable by all

Throughout the extant literature on job crafting, and particularly the qualitative literature, there are examples of task crafting being carried out by employees. Wrzesniewski and Dutton (2001) position boundary conditions of autonomy and task interdependence as enabling and restricting job crafting respectively, but they do not propose that job crafting activity can be completely curtailed by a lack of autonomy or by strong task interdependence. Rather, they propose that these aspects will moderate the extent to which an employee is able to job craft. I will now briefly present the evidence in support of the case that task crafting activities can be carried out by all employees, irrespective of the amount of autonomy an employee has, the level of seniority, or the level of task interdependence their work incorporates.

Focusing first on autonomy, it was initially proposed that an employee needed to have a certain amount of autonomy to be able to change how they go about completing their tasks (Wrzesniewski & Dutton, 2001). For this reason, early research often focused on work groups or professions that traditionally have high levels of autonomy embedded within their roles. Teachers and childcare workers are good examples of this and have high levels of autonomy to task craft. Lin et al. (2017) identifies task crafting activities in high school teachers as going beyond the 'formal curriculum' to integrate e-conversations with students into their teaching sessions, and by celebrating students' achievements using a 'school-family sharing platform'. Slemp and Vella-Brodrick (2014) also studied workers who could be assumed to have high levels of autonomy, such as university staff, banking sector human resource employees, and healthcare insurance employees, and identified task crafting activities as introducing new approaches, introducing new tasks, taking on additional tasks and giving preference to tasks that suit individual interests. Whilst this study did not explicitly measure levels of autonomy, it was included in the measure of self-determination and the study found a positive relationship between task crafting and satisfaction of the need for autonomy (Slemp & Vella-Brodrick, 2014).

However, employees with lower levels of autonomy are also able to task craft. A simulation experiment using low autonomy electronics assembly line workers found that when the workers perceived that they were underemployed, they moved away from their assembly brief to alter how they completed a task to design and build an object, by altering either the number of component pieces, the number of objects built, or the design of the object itself (Lin, B. et al., 2017). A second study using low autonomy call centre workers found that self-reported task crafting took place in collaboration with colleagues, although this study did not identify what forms the task crafting took (McClelland et al., 2014).

Moving onto task interdependence, this is closely linked to seniority within an organisation because the tasks required of those in more senior roles are often more dependent on the tasks of others as the roles become more complex (Leana et al., 2009). In addition, task interdependence is also linked to autonomy via seniority, because more senior employees are likely to have greater levels of autonomy, but conversely greater levels of task interdependence. For this reason, Wrzesniewski and Dutton (2001) proposed that task crafting would be more difficult for employees who had greater levels of seniority despite their enhanced levels of autonomy, because of the greater levels of task interdependence embedded into more senior roles. While this relationship has been shown by Berg et al. (2010b), task crafting examples were still given by employees at all levels of seniority. For instance, a non-profit company director identified that they took on an additional task of organising part of an annual company luncheon because they were good at it and liked it, despite it being something that would normally be delegated to a more junior staff member (Berg et al., 2010b). Further, a more junior staff member reported helping to train new staff members on high speed equipment because they enjoyed it and found they were good at it (Berg et al., 2010b). Other studies also demonstrate that seniority is not related to task crafting activity. Leana et al. (2009), in a study of childcare workers, found that while task interdependence was not related to individual task crafting, seniority was, with a stronger relationship found among teachers than among teaching assistants. Within this study however, although task crafting was measured separately, it was not analysed separately from

other forms of job crafting and thus, it is difficult to extrapolate the effect of seniority and task interdependence on task crafting activity alone. Examples of task crafting in the Leana et al. (2009) study include childcare workers introducing new approaches, changing routines, rearranging equipment, organizing special events or bringing in new equipment.

In summary, whilst the conceptual framing of task crafting identifies that it is likely to be related to having higher autonomy, and that it may be more difficult for senior staff or for staff with high task interdependence, evidence shows that task crafting is still able to be carried out across staff of all ranks irrespective of autonomy, seniority or task interdependence.

2.5.5 Current task crafting research

2.5.5.1 *Known antecedents and outcomes of task crafting*

Although there are clear indicators of antecedents of task crafting from the job crafting literature, specific research evidence on known antecedents and outcomes of task crafting is scant. There are to date only four papers that explore task crafting explicitly and, of these four, only one explicitly considers antecedents, and two others consider antecedents as part of alternative hypothesis testing only.

The only study to consider antecedents of task crafting specifically, focuses on the impact of perceived underemployment on task crafting (Lin et al., 2017) and the effect of this on creativity and organisational citizenship behaviours (OCB). This paper positions perceived underemployment as having a negative effect on an employee's creativity and OCB, and finds support for the hypothesis that task crafting is something that employees do to buffer this negative effect. However, the paper also explores the impact of organisational affiliation, which is defined as the level of oneness or belongingness that an employee feels to their organisation, as affecting the extent to which an employee engages in task crafting, when they perceive that they are underemployed. Thus, organisational affiliation is also positioned as an antecedent to

task crafting. The study finds a positive relationship for both of these antecedents of task crafting. What is interesting here is the importance of feeling a sense of belonging in creating the conditions for task crafting to take place, and this aligns well with the ideas around the influence of the work climate on task crafting. If an employee feels a sense of belonging, they feel that they fit within their organisation and, as social norm theory shows, individuals conform because of a desire to fit with the norm. Thus, there are indications within this study that the work climate may influence task crafting.

Of the two studies that consider antecedents of task crafting when testing alternative hypotheses, Slemp and Vella Brodrick (2014) find that both intrinsic needs satisfaction and wellbeing are outcomes of job crafting, with task crafting in particular being positively associated with Intrinsic Needs Satisfaction. In acknowledgement of the cross-sectional nature of their data and in order to rule out reverse effects, Slemp and Vella-Brodrick (2014) test an alternative model which positions job crafting as an outcome, and INS and wellbeing as antecedents. Their analysis produces data which demonstrates a good model fit for the reverse model, but model fit improves when INS and wellbeing are positioned as outcomes. Further, in conducting their reverse model analysis, the three dimensions of job crafting are not separated out and thus, their positive model fit statistics do not provide strong evidence for INS and wellbeing being antecedents of task crafting specifically.

McClelland et al. (2014) also focus on outcomes of task crafting, including perceptions of control, team efficacy and team interdependence, finding strong support for their hypotheses that these would be outcomes of task crafting. In exploring the models however, McClelland et al (2014) also conduct reverse model testing, in order to rule out the possibility of these factors being antecedents of task crafting. Again, their analysis produces good model fit statistics, but inferior to the fit statistics for their hypothesised model. What is interesting about McClelland et al,'s (2014) findings is that, in testing the reverse model, the relationship between team control and task crafting becomes non-significant, and they infer from this that low levels of team

control might provoke task crafting as a means of enhancing levels of perceived control. This is entirely consistent with Wrzesniewski and Dutton's (2001) conceptualisation, which identifies the need for control as a key motivator for job crafting. This research however, focuses on collaborative rather than individual task crafting. What the collaborative focus of this research does do is to give insight into the potential for task crafting to influence the development of a climate which is supportive of task crafting, as it finds task crafting is a team and shared activity.

The final paper purely focuses on performance (self and supervisor-rated) as an outcome of job crafting, but does separate out task crafting as one of the three dimensions. This paper provides good evidence of a positive outcome in relation to performance of task crafting but does not add to understanding of antecedents of task crafting at all.

2.5.5.2   *Summary of known antecedents and outcomes of task crafting*

In summary, the current evidence base on antecedents of task crafting specifically provides robust evidence that perceived underemployment influences task crafting, but that the negative effects of this are buffered by an employees' sense of belonging. The current evidence also indicates that a supportive climate is an important antecedent, and that autonomy and a need for control is associated in some way with this. There are also indications that intrinsic needs satisfaction may be an antecedent of task crafting. With regards to outcomes, there is strong evidence that OCB's, creativity, performance improvement (at a team-level), and an enhanced sense of psychological wellbeing are outcomes of task crafting.

2.5.6   **Current research gaps related to known antecedents and outcomes**

At the current time, due in part to the limited range of research exploring task crafting specifically, there is a mismatch between the current known antecedents of job crafting and task crafting that does not make conceptual sense. For instance, good and trusting relationships between leaders and their subordinates has been strongly implicated as a condition that both

enables job crafting, and as something that employees seek to manipulate as part of job crafting. Such positive relationships are also implicated in the development of a climate supportive of both job and task crafting. However, to date, consideration of the impact of relationships between leaders and their subordinates is entirely absent from research into task crafting. Furthermore, and linking to the relationships between leaders and their subordinates for both job and task crafting, the existence of a supportive work climate is implicated but has not been specifically researched. Additionally, for task crafting in particular, the role of autonomy appears to be important and may also be complex, as shown in the presentation of current evidence around the links between job crafting and autonomy. Again however, autonomy as an antecedent has not yet been researched. Finally, in relation to outcomes, there has been some focus in existing research on performance improvements that are mainly attributed to improved visibility. However, an objective measure of performance improvement such as promotion has not been explored.

2.6   CONSIDERING CAREER DEVELOPMENT IN RELATION TO TASK CRAFTING

Career development and employee promotion benefits employees and organizations alike. For employees, career development and promotion can offer challenge and recognition of enhanced ability and competence (Duffield, Baldwin, Roche, & Wise, 2014). For organizations, promotion can enhance employee engagement (Sturges, Conway, & Liefooghe, 2010; Vogt, Hakanen, Brauchli, Jenny, & Bauer, 2016), commitment (Crawshaw, van Dick, & Brodbeck, 2012), and trust (Crawshaw, 2011), while reducing grievances (Allen, 1997), turnover and intentions to quit (Chang, Chou, & Cheng, 2007). Previous theoretical and empirical research has identified numerous predictors of promotion, including person-job fit (Chen, Yen, & Tsai, 2014; Dawis, 2002; Holland, 1997; Savickas, 2005), proactivity (Bertolino, Truxillo, & Fraccaroli, 2011; Crawshaw et al., 2012), adaptivity (Lent, Ezeofor, Morrison, Penn, & Ireland, 2016), employer-employee relations (Crawshaw & Game, 2015; Crawshaw et al., 2012; Sturges et al., 2010; Sturges, Guest, Conway, & Davey, 2002), training provision (Lambooij, Flache,

Sanders, & Siegers, 2007), organizational citizenship behaviors (Hui, Lam, & Law, 2000), career stage (Bertolino et al., 2011; Sturges et al., 2010; Super, 1992), and career identity (Praskova, Creed, & Hood, 2015).

In relation to career development and promotion, there are three strong indicators that these might be related to task crafting. First, when examining the correlates of promotion, there are clear commonalities with the outcomes of task crafting. At its simplest level for instance, OCB's are an outcome of task crafting (Lin, B. et al., 2017), and are antecedents of promotion (Hui et al., 2000). Performance improvement is both an outcome of task and job crafting (Leana et al., 2009; McClelland et al., 2014; Weseler & Niessen, 2016; Cheng et al., 2016) and an antecedent of promotion (Chung & Leung, 2010). Finally, the good relationships between an employee and their employer/manager that could be inferred from the positive effect that job crafting has on organizational commitment (Cheng et al., 2016), are also antecedents of promotion (Crawshaw & Game, 2015; Crawshaw et al., 2012; Sturges et al., 2010; Sturges, Guest, Conway, & Davey, 2002).

The second indicator of a link between career development and task crafting is the level of overlap in the underpinning constructs embedded within career development theories that have relevance to task crafting behaviours. In the next section of this thesis, I will briefly review a range of career development theories, will explore the overlaps between them and job crafting theory, and I will argue that there is a good justification for considering these two as-yet unrelated fields together.

2.6.1   Links between career development theories and task crafting

Career development theories attempt to explain the factors which influence and shape career development, and these focus on the actions and processes that organisations and employees take to either enhance personal career development or to create structural opportunities for career development. Broadly speaking, career development theories fall into four key categories.

First, a group of theories which are concerned with an employee's personal traits and the processes of matching these with specific occupations (person-job fit theories). These theories are used to inform recruitment and promotion processes, as a high level of person-job fit is associated with lower employee stress, lower turnover, higher performance and higher job satisfaction (Edwards, 2008). Second, those which are concerned with personality types and the alignment of these with organisations in relation to working practices, ethos, mission and goals (person-environment fit theories). These include Holland's Theory of Vocational Personalities in Work Environment (Holland, 1997), the Theory of Work Adjustment (TWA) (Rounds et al., 1987; Dawis, 2002) and Career Construction Theory (CCT) (Savickas, 2005). Third, those which focus on career decision making and employee self-efficacy, such as Social Cognitive Career Theory (Lent et al., 1994; Lent et al., 2016; Brown et al., 2011) Finally, those which focus on how an individual's career motivations might change over their lifespan, and the consequent impact that an employees' lifespan or lifestage has on career development decision and actions. These include the Self-Concept Theory of Career Development (Super, 1992). Of these four, in addition to actions taken by employees or prospective employees, the first two integrate actions on the part of the organisation, to enhance career development. The final two consider only those actions taken by individual employees to enhance their career development.

However, there is overlap between these four theories, as can be seen in the integration of personal characteristics as an important factor in three out of the four groups of theories, and in the integration of lifespan considerations specifically within social cognitive theories and in the self-concept theories. The following section therefore presents a brief critical synthesis of the most common career development theories and a consideration of their relevance in relation to task crafting.

2.6.1.1 Person-Environment fit theories

The Theory of Work Adjustment (TWA) is a person-environment correspondence theory which is located within the individual difference tradition of vocational behaviour. The theory positions career choice and development as a continual process of adjustment and accommodation on the part of the employee and the employer (Rounds et al., 1987; Dawis, 2002). In essence, the theory proposes that employer/employee relationships and subsequent career development are both affected by the extent to which the needs of each party are met by the other party. The relevance of this theory in relation to task crafting is that it explicitly addresses the dynamic nature of the relationship between the employer and their organisation, acknowledges that this changes over time and therefore requires ongoing adjustments (Bayl-Smith & Griffin, 2018). The starting point of the theory is that employees will look to work for organisations that match their personal and individual requirements, and in turn, employers will look for employees that match their organisational requirements. In this instance, the needs of the organisation are positioned as the skills, abilities and knowledge needed to achieve organisational goals, whereas the needs of the employee are positioned as their psychological and physical needs or values (Leung, 2008). Whilst this may be a static starting point for an employee/employer relationship, the theory proposes that career development is a dynamic process that continues throughout the employment relationship whereby both parties in this relationship will evaluate their ongoing level of fit, and if they perceive a mismatch, will make adjustments. Fundamentally, misalignment and needs satisfaction are the drivers for changes made by employers and employees within this theory.

Before exploring the theory in more detail, it is clear that these two drivers for adjustment align with the drivers for job and task crafting actions. For instance, as has already been shown, motivations for job crafting include a desire to improve person-job fit (Niessen et al., 2016). Further, intrinsic needs satisfaction is both a key driver for job crafting (Wrzesniewski & Dutton, 2001) and a specific outcome of task crafting (Slemp & Vella-Brodrick, 2014).

The theory then proposes four adjustment styles that can be held by both employees and employers that lead to specific adjustments, in order to address perceived mismatch (see Table 1, adapted from Leung, (2008)). These are flexibility, activeness, reactiveness and perseverance.

In regards to an employees' self initiative and individual behaviour, with the exception of perseverance, each of these adjustment styles also relate to task crafting, as follows. Task crafting is stimulated by an employee's desire to change how they go about their tasks, to achieve personal (intrinsic) needs (Wrzesniewski & Dutton, 2001; Slemp & Vella-Brodrick, 2014). This desire to change can be taken as an indicator that an employee is able to think in a flexible way about their work tasks.

Table 1: Summary of adjustment actions in TWA

Adjustment Style	Employee attributes or actions	Employer attributes or actions
Flexibility	Employees level of tolerance for mismatch	Employers level of tolerance for mismatch
Activeness	Employees tendency to act to change something about their employer to reduce the mismatch	Employers tendency to actively change aspects of their employee, e.g. through staff development
Reactiveness	The extent to which the employee would change aspects of themselves, to reduce the mismatch	The extent to which an employer would make changes to their own processes/procedures to reduce the mismatch
Perseverance	The level of persistence the employee as to continue making adjustments before deciding to leave the employer	The level of persistence the employer would have to continue making adjustments before coming to a decision to end the relationship.

However, it can also be taken as an indicator that the employee's tolerance for continuing with the status quo is low. In these circumstances, the stimulation to make changes is high. Thus, employees who have high levels of flexibility are more likely to task craft. With regards to activeness and reactiveness, task crafting requires an employee to be minded [motivated] to take action to change specific elements of their work tasks, and to follow this up with specific action

to implement the changes. The same is true for relational crafting, in that this type of change requires specific and planned action to change relational boundaries at work. However, research exploring TWA frequently considers these four adjustments styles in relation to completion of 'work tasks', such as the recent research examining work styles as an element of TWA (Bayl-Smith & Griffin, 2015; Bayl-Smith & Griffin, 2018). This focus on task completion indicates that TWA theory situates task adjustment as central to career enhancing actions.

Within Career Construction Theory (CCT), the ability of an employee to evaluate and subsequently identify and implement adjustments to enhance their person-organisation fit or to enhance their career decision making is framed as adaptability and adaptiveness (Savickas, 2005; Xie et al., 2016; Hirschi & Valero, 2015). This theory positions adaptive behaviours as actions undertaken by employees to enhance their level of fit, and this has been applied most recently to research on callings (Xie et al., 2016). Again however, the current focus in much of CCT research is exploring tendencies towards adaptive and proactive behaviours, without considering what these behaviours might entail. Task crafting involves both proactive and adaptive behaviours (Berg et al., 2010b) and therefore offers a potentially valuable contribution to the practical application of CCT.

The emphasis on individual differences and the fit between types of individual and types of organisation is continued in the Theory of Vocational Personalities in Work Environment (VPWE) (Holland, 1997). However, rather than focusing on adjustment styles, this theory identifies six personality types, as well as six corresponding organisational environments. The theory proposes that both employees and organisations will exhibit a number of different typologies, and that the level of congruence for an employee with their employer's typology will determine an employee's career development choices. In contrast to TWA, this theory focuses predominantly on the actions of the employee, and positions the evaluation of fit as a process which employees go through when coming to decisions about vocational stability and job satisfaction. In relation to task crafting, the VPWE is less relevant as the focus on its

practical application is on its use in career development as a tool to support prospective employees to identify the right employer for them, rather than on career development while in post (Leung, 2008). There is some research which identifies actions taken by employers to create a closer person-environment fit, such as job enrichment, policy adjustment and staff development (Duffield et al., 2014; Lopez-Andreu & Verd, 2013), but conceptually, the link between task crafting and this VPWE theory of career development is limited.

2.6.1.2   *Career decision making and self-efficacy based theories*

Social cognitive career theory (SCCT) (Lent et al., 1994) proposes that an organization's work environment influences employee perceptions of self-efficacy, outcome expectations, and personal goals, which in turn lead to specific actions on the part of the employee to inform their plans for, or improve their chances of, career progression. The theory comprises four models that separately focus on interest, choice, performance, and more recently career self-management (Lent et al., 2016). Of particular relevance to task crafting is the most recent SCCT model of career self-management (CSM) as this model, in contrast to the preceding ones, focusses on the processes by which individuals manage their career development, rather than focusing on the attitudes and outcomes arising as a result of cognitive evaluations of career progress (Lent & Brown, 2013). The CSM model has a number of core underpinning principles, the first of which is that an employee is able to exert some control, or agency over their career development (Lent & Brown, 2013). The second is that the employee uses self-reflection to identify appropriate actions to take. Finally, CSM acknowledges that irrespective of the amount of agency and reflective capacity an individual has, their ability to make changes will be influenced by the external structural, social and environmental context in which they work (Lent & Brown, 2013). These three principles mirror those which underpin task crafting behaviours.

In developing the CSM model, Lent and Brown (2013) identify a range of actions which employees engage in, amongst which examples that appear to be task crafting can be found. For

instance, task crafting is clearly identifiable in the list of adaptive career behaviours, which include *'engaging in self-advocacy, such as seeking raises, promotion or new tasks'* and *'building job niches'* (Lent & Brown, 2013, p 560). Furthermore, the CSM model positions the adaptive behaviours as malleable and dynamic, in response to changing work contexts, situations and challenges (Lent & Brown, 2013). This again draws parallels with emerging evidence of the situationally responsive and on occasions, daily fluctuating nature of job crafting, of which task crafting is one aspect (Petrou et al., 2012; Petrou et al., 2015). Recent applications of CSM to career development behaviours have tended to consider adaptive behaviours in relation to intent (Ireland & Lent, 2018), or outcome expectations (Lent et al., 2017), rather than pursuing the variation in adaptive actions specifically. Thus, job and task crafting offers a potential valuable theoretical contribution to SCCT-CSM.

2.6.1.3   Lifespan theories of career development

Finally, the dominant lifespan theory of career development is the Self-Concept Theory of Career Development (Super, 1992). This theory proposes that an individual's perceived or desired self-concept is the driver for career choice and career development, and that this self-concept is to some extent biologically driven (Super, 1992; Leung, 2008). Thus, an individual's career development actions are positioned as being influenced by their current life stage. This concept is not uncommon in career development theories and is seen in TWA (Dawis, 2002) as well as in the changing adaptive actions identified in SCCT-CSM (Lent & Brown, 2013). Task crafting is implicitly rather than explicitly relevant to this theory because of the impact of life stage on motivations with regards to career development. Career progression motivations and actions are influenced by non-work circumstances such as work-home-life balance, family commitments, career and life stage (Litano & Major, 2016; Rodrigues et al., 2013). Thus, the positive effect of task crafting on intrinsic needs satisfaction (Slemp & Vella-Brodrick, 2014) has relevance here, because career progression evidenced by promotion may not be the only goal of career development activities.

As can be seen from this synthesis of career development theories, although the theories vary, the majority contain aspects that indicate that task crafting could be an important element of career development activities. However, although there is explicit acknowledgement of the importance of proactive and adaptive behaviours, as well as some examples of behaviours that align with task crafting, none of the theories pursue this specific aspect of career development further. This section of the literature review therefore serves to position task crafting as having potential to be aligned to the career development theoretical literature, on the basis of parallels between task crafting and career development theoretical frameworks and underpinning concepts. However, in addition to theoretical overlaps, there are also common features across both career development theories and career development actions that further strengthen the proposition that these two literature streams could be linked. Fundamentally, this concerns underpinning concepts which drive career development and their alignment with task crafting.

2.6.2   Links between career development motivations and task crafting

The recent changes to job design typified by job crafting, which place the employee in an active position with regards to their job design, have also been mirrored within career development. The decline of a 'job for life' and the rise of the boundaryless career (Arthur & Rousseau, 1996) which have been driven by changes in the labour market, have resulted in the need for employees to be more protean (Briscoe & Hall, 2006). Consequently, employees are now required to be much more actively involved in designing and enabling their own career progression. This shift from being passive recipients to active participants in career development means that both employers and employees need to behave in different ways in order to ensure that their prospective goals are achieved. Thus, the third indicator linking career development and task crafting is in the actions taken by individual employees to enhance their careers. Whilst some of this can be inferred from examining career development theories (see above), there is also direct evidence that employees take action to change their tasks when trying to achieve career progression.

2.6.2.1   Exchange relationships in career development

As can be seen above, much of the career development literature focuses on exchange relationships, which are also found to be important in job crafting behaviour (Crawshaw, 2011; Crawshaw & Game, 2015; Van Dam et al., 2013). Social Exchange Theory (Blau, 1964) and the work on psychological contracts (Sturges et al., 2005) suggests that there is a reciprocal relationship between an employee and their organization such that an employee's work attitudes and behaviors such as commitment, proactivity, and engagement are dependent on a perception of being treated positively at work (Crawshaw et al., 2012). At an individual level, employees who have positive and trusting exchange relationships with their line managers are more likely to have positive perceptions about career development opportunities (Crawshaw & Game, 2015), and to use such relationships as a source of practical help in career planning (Sturges et al., 2002). Employees who enjoy such relationships are also more likely to continue to work proactively even when perceptions of career development opportunities are unfavourable (Crawshaw et al., 2012). At an organizational level, the provision of good organizational support can lead to increased engagement in activities that promote internally focussed career development behaviours (Sturges et al., 2010). Applying social exchange theory to career development activity suggests, therefore, that organizations should engage employees in activities that will enhance their careers and provide the environment in which this can take place.

In relation to task crafting, individual and organisational exchange relationships are also important. If an employee wants to customise the way they carry out their work tasks (task crafting), they need both the space to do this, in the form of task autonomy, and a trusting relationship with their manager/s. Thus, although task crafting is clearly a personal and individually rather than managerially initiated series of actions, the role of managers in creating the environment where employees are able to task craft is embedded throughout both job crafting and career development practice, as follows. Managers determine the level of supervision and monitoring in the job, both in terms of the job description and also in terms of

their own management style. This influences the level of actual and perceived autonomy in the role. Each of these has been positioned as a proximal antecedent of job crafting (Wrzesniewski & Dutton, 2001). Their management style will influence the development of trust with their subordinates, which contributes towards creating a climate where employees feel safe to do things differently (Brown & Leigh, 1996; Anderson & West, 1998). Additionally, the development of trusting relationships is seen in career-self management practices in which an organisation develops an employee's skill to manage their own career (Bambacas & Bordia, 2009; Wesarat et al., 2014).

Mechanisms for achieving this include mentoring (Scandura & Williams, 2004), transformational leadership (Scandura & Williams, 2004), practicing 'caring' leadership which develops an employees' attachment to, or trust in their manager (Crawshaw & Game, 2015; Scandura & Schriesheim, 1994), practicing *fair* promotion practices which enhance employee proactivity (Crawshaw et al., 2012), practicing family-supportive supervisor behaviour to build quality LMX and enable employees to manage their careers over changing life-events (Litano & Major, 2016) or simply by managers creating quality LMX relationships with their subordinates (Sturges et al., 2010). Additionally, as previously discussed, the perception and observation of acceptable behaviours and actions at work influences the development of a supportive climate where job crafting can take place (Leana et al., 2009; Van Dam et al., 2013), and managers can enhance the development of a supportive climate in relation to both job crafting and career development by acting as positive role models (Gibson, 2004).

2.6.2.2   Person-job fit and career development

Second, the level of congruence or alignment between employees, and either their job, or their organisation is important for task crafting and career development actions, and is dominant within career development theories. For the employees, the alignment is in relation to their personal, psychological or professional values. The alignment fit is important because greater levels of alignment are related to staff staying in their jobs, to higher levels of job satisfaction

(Peng & Mao, 2015) and to higher levels of individual and organisational performance (Lin et al., 2014). The responsibilities for making changes to enhance career development are equally positioned as lying with the employee and the employer, but the approaches taken to enacting this are subtly different depending on whose position it being considered. For example, much of the early and ongoing research into career development and career development theories focuses on the individual attributes of employees, such as personality traits, and how these might be utilised by employees to make changes to enhance their careers. This relates to circumstances of person-environment incongruence as well as to creativity and proactivity for career development.

Examining these evidence supporting a relationship between job crafting, promotion and person job fit, job crafting enhances personal-work congruence (Vogel et al., 2016; Berg et al., 2010b), and enhanced person-job fit is a known predictor of promotion (Chen, Yen, & Tsai, 2014; Dawis, 2002; Holland, 1997; Savickas, 2005). There is good evidence that employees want to improve their engagement and person-job fit and that they use job crafting as a means to do this (Bakker et al., 2012; Bakker et al., 2011; Lu et al., 2014; Tims et al., 2013a; Slemp & Vella-Brodrick, 2014; Brenninkmeijer & Hekkert-Koning, 2015). On its own, this may not necessarily lead to promotion, but there is also evidence that employees with greater person-job fit perform better, remain in their posts and are happier in their work, benefitting both the organization and individual employees. This idea draws on both the Person-Environment Fit model proposed by Edwards (2008) and on research on unanswered callings by Berg et al. (2010a). Person-job fit is grounded within motivational theories of job design and job performance which suggests that personal motivating factors influence work behaviours. In relation to career development, Sturges et al. (2010) find that employees are more likely to be motivated to take action to advance their careers if their goal is clearly aligned to their personal values.

2.6.2.3 *Work identity and career development*

Third, both job crafting and career development position work identity as a core concept, as follows. Good person-job fit contributes towards the formation of a dynamic 'career identity' (Hoekstra, 2011), in which an individual actively and cognitively positions themselves in relation to their workplace and their present and potential future career. The career development literature suggests that the process through which individuals form this career identity, or close alliance between person-job fit and their career, is through reflection and decision making. Thus, the more accurately people understand both themselves and their working environment, the more likely they are to make decisions that lead to their jobs having greater meaning, being more fulfilling, and more responsive to their needs and talents (Singh & Greenhaus, 2004). Reflection and subsequent decision making are precursors to task crafting, as an individual cannot take action to craft their job without first reflecting on the reasons and mechanisms for doing this. Consequently, career development and career progression are more likely, and career decision making and actions in support of this are more likely to take account of this knowledge, again resulting in improved person-job fit. It is therefore likely that task crafting contributes towards career development through maximising engagement and person-job fit, which subsequently enhances work identity.

2.6.2.4 *Proactivity and career development*

Fourth, task crafting requires an employee to be proactive in how they carry out their tasks and, as such, there is strong alignment between task crafting as an active, employee-led process of job design, and the core concepts of proactivity, adaptivity and creativity. At the heart of job crafting theory is the idea that an employee who wants to improve their work meaningfulness will creatively find ways to achieve this, whether or not they have explicit management support to do so. Such changes require an employee to think creatively about their job and to both proactively and reactively consider adaptations to it. Indeed, there is strong evidence that having a proactive personality is a precursor of such job crafting (Bakker et al., 2012) and that both

proactivity and adaptivity underpin job crafting actions (Berg et al., 2010b; Leana et al., 2009). This aligns very clearly with the literature around proactivity and adaptivity for career development goals, particularly Hoekstra's (2011) suggestions that proactively learning to work in different roles (adaptivity) contributes to the dynamic development of a career identity.

Proactivity features extensively in the existing research around career development and is an underpinning principle in the Theory of Work Adjustment (TWA) (Dawis, 2002), as demonstrated by the tendency for activeness and reactiveness. Proactivity is also closely related to perceptions of fairness in promotion processes (Crawshaw et al., 2012), such that individuals who perceive promotion criteria to be fair are more likely to continue to work proactively, even if they believe that their chances or promotion are low. However, there is some evidence that age moderates the relationship between proactive personality and career development activities, specifically career development learning. Bertolino et al. (2011) found that the relationship between proactive personality and both perceived career development from training and training motivation is more positive for younger than older participants. They suggest that this effect could be due to the differing importance placed on career advancement for younger and older people, such that as employees' age, occupational achievement may play a smaller role in their lives and is therefore less motivating than for younger employees. This argument provides a link back to motivation as a factor influencing career development behaviours. Other examples of proactivity are identified by Hirschi et al. (2014) in their 'career engagement scale'. This scale specifically focuses on actions taken by an employee to manage their own career and is relevant to task crafting because of the focus on behaviours rather than on attitudes. The study finds that two specific behaviours that can be conceptually linked to task crafting are carried out to enhance career development. These are 'undertaking things to achieve their career goals' and 'assuming duties or positions that will help professional progression' (Hirschi et al., 2014, pp 579).

2.6.2.5 Boundary management and career development

Boundary management as an underpinning concept of job crafting is also related to career development. Boundary changing is at the heart of job crafting and this again aligns clearly with career development behaviors. Drawing on the career development motivational analysis provided by Sturges et al. (2010), validating behavior, positioning behavior, and visibility behavior all contribute towards changing task boundaries though employees visibly placing themselves in a positively viewed (validated and visible) position, particularly when aiming to move from generalist to specialist job roles. These behaviors are closely aligned with the types of job crafting outlined above. Specifically, building human capital and influencing behavior can be seen as actions to shift relational boundaries; work-nonwork boundary management can be seen as cognitive boundary crafting; and, finally, expertise development can be related to self-initiated skill development boundary changing. Thus, these job crafting processes already appear in the career development literature, providing a sound rationale to integrate these two theoretical perspectives.

In summary, there is strong conceptual evidence that task crafting may be important in relation to career development, practically, behaviourally and theoretically. Despite these links, this relationship has not yet been explored in either the career development or job crafting literature.

2.7 SUMMARY OF INITIAL LITERATURE REVIEW

The preceding chapter has brought together evidence to support the focus in this thesis on the links between task crafting and career development. The review began by presenting an overview of the importance of work behaviour for career development, and then reviewed a range of factors that influence work behaviour. Although individual characteristics are important, the review highlighted that there is a wealth of evidence and extant research in this area and thus, this is not a current research gap. However, the review then argued that job design and job design theories have particular relevance in relation to work behaviour because of the

way that they are able to consider the impact of interactions between personal behaviours and physical, contextual and structural work environments.

Following a brief review of the history of job design theory, including an overview of the influence of job design on performance, the review then introduced job crafting as a new process for job design that challenges the historical focus on management involvement and control over job design by positioning employees as active agents in their own job design. In order to demonstrate the relevance of job crafting to career development, the next section of the review presented a synthesis of the underpinning concepts informing job crafting theory, and presented the case that these concepts appear and are important in career development.

The review then presented a synthesis of the current evidence around antecedents of job crafting, and demonstrated that firstly there are inconsistencies and research gaps, many of which arise from either the use of cross-sectional research which means causal inferences are not able to be made, or from basing research on definitions of job crafting that do not represent the original conceptualisation presented by Wrzesniewski and Dutton (2001). The review argued that although autonomy is a known antecedent of job crafting, the evidence for its effect varies and thus further research would be beneficial. The review presented the evidence in support of good relationships between leaders and their subordinates and job crafting, but again showed that this evidence could be strengthened with longitudinal research. As a new contribution to the field, the review presented the case for a focus on a climate for crafting, and identified where this had been implicated in extant research but not yet focussed on specifically. Finally, the evidence behind uncertainty as a stimulator for job crafting was examined, with the conclusion that there are many indicators, but little specific research. To bring a sense of balance to the review, the potential for negative effects of job crafting was considered.

Next, the review presented a case for a specific focus on task crafting as one dimension of job crafting, arguing that task crafting has great potential to have a positive effect on career

development. The theoretical basis for this position was presented with reference to career development theories, and the conceptual basis was presented with reference to the underpinning concepts informing both task crafting and career development actions

To summarise, research into job crafting has been growing, particularly in the last ten years. However, despite commonalities of many of the antecedents and outcomes of task crafting with antecedents and outcomes of career development and promotion, the link between the two has not yet been explicitly researched. This thesis addresses this evidence gap, contributing towards both job crafting and career development theories.

CHAPTER 3: THEORY AND MODEL DEVELOPMENT

3.1   THEORY AND HYPOTHESES

My consideration of both the literature review and the exploration of task crafting as a special case have led to the development of a conceptual model of the relationships between task crafting, its correlates, and promotion (see Figure 1) that offers new contributions to job crafting theory. Discussion of my model begins with an examination of the selected correlates of task crafting: autonomy, leader-member exchange, and climate.
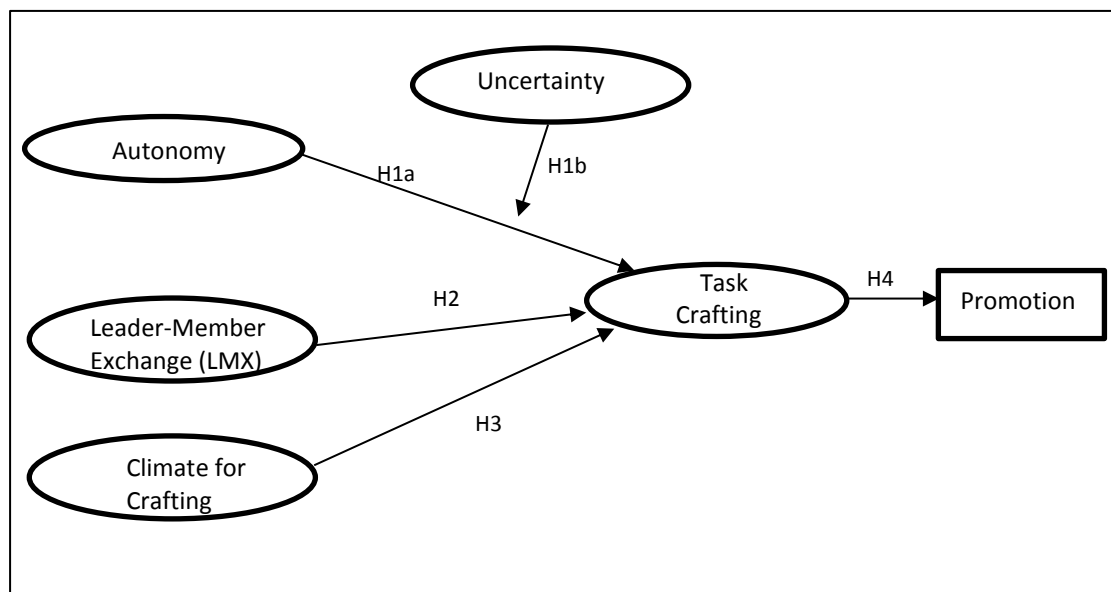
Figure 1: Hypothesised model of correlates and outcomes of task crafting

3.1.1   Autonomy

Given the independent and self-initiated nature of job crafting, the relationship between autonomy and crafting has been of key interest to researchers (Berg et al., 2010; Leana et al., 2009; Lyons, 2008; Wrzesniewski & Dutton, 2001). In relation to task crafting, autonomy is important because it creates the space in which individuals can adjust the number, range, or type of tasks carried out at work (Berg et al., 2010; McClelland et al., 2014; Wrzesniewski & Dutton, 2001). In other words, autonomy affords individuals the latitude to make changes to their work tasks.

Broadly supporting this argument, Lyons (2008) found that autonomy was positively associated with job crafting (comprising task and other forms of crafting). More specifically, Leana et al. (2009) found that employees with greater autonomy reported more individual and collaborative task crafting behavior, although the study population were from one employment sector only (early childhood education). Furthermore, Berg et al. (2010) found that employees across a range of job roles used their job autonomy to alter aspects of their tasks, either adding additional tasks or changing the nature of assigned tasks. Autonomy is also implied in recent research carried out by (Lin et al., 2017), who explored the relationships between task crafting and underemployment. Lin et al.'s (2017) study finds that employees who perceive their job underutilises their skills and abilities will task craft as a strategy to more closely match their job with their preferences and competences, and in this study measured task crafting through the use of a questionnaire and also through a practical creative task. In each of the measures, task crafting was positioned as an extension or adaptation of current tasks, and thus, although perceived autonomy was not measured, the changes made suggest that study participants perceived they had autonomy to make these changes.

Task crafting was also a particular focus of the study on collaborative crafting by McClelland et al. (2014). However, this study positioned and measured perceived job control [autonomy] as an outcome of task crafting, and implied, rather than measured, autonomy as a correlate. McClelland et al. (2014) did provide a justification for this implication, as their study participants were call centre workers in a low autonomy environment. They also supported their implication with evidence from the study by Berg et al. (2010b) which found that employees with varying levels of autonomy found ways to job craft. Weseler and Niessen (2016) controlled for autonomy in their study exploring the links between task crafting and task performance. This was to remove the impact of variations in autonomy that have been found to influence job crafting in previous studies, but an inclusion of this as a correlate would have been useful. However, as this was a cross-sectional study, conclusions would not have been able to be drawn regarding the directional relationships even if this had been included. Taken together, these

studies suggest that autonomy is an important correlate of task crafting, but specific testing of this relationship with a focus on task crafting alone, rather than job crafting as a whole, has yet to be carried out. This study therefore tests the following hypothesis:

H1a: Autonomy will be positively associated with task crafting.

In addition to considering the impact of autonomy on task crafting, this thesis argues that uncertainty or a lack of predictability concerning the execution of work tasks (Wall, Cordery, & Clegg, 2002) will moderate the autonomy-crafting relationship. Higher levels of autonomy are assumed to have performance-related outcomes (Hobfall, 2002). However, such outcomes have been found to be dependent on the prevailing degree of contextual uncertainty (Cullen, Edwards, Casper, & Gue, 2014). Under conditions of low uncertainty or stability, there are naturally fewer problems to solve and fewer decisions to be taken than under conditions of high uncertainty. Accordingly, when work conditions are stable, autonomy is unlikely to benefit performance because employees will have little scope to apply their skills; the converse applies to conditions of uncertainty (Cordery, Morrison, Wright, & Wall, 2010). For instance, Wall, Jackson, and Davids (1992) concluded that the gains in performance following an increase in autonomy for operators of a robotics line (high technological uncertainty / unreliable machine operation) were due to a quick response (operators were on-hand to manage faults) and also to fault prevention (i.e., operators had developed the knowledge and skills to prevent faults − see also Leach, Wall, & Jackson, 2003). Wall et al.'s (2002) elucidation of fault prevention reflects a specific example of task crafting, being undertaken on a voluntary basis and, arguably, to improve work interest and meaning.

The emphasis in task crafting on creativity and problem solving are particularly relevant when considered in relation to uncertainty. Uncertainty has the potential to create challenges in relation to work identity, self-efficacy and work meaningfulness, each of which may stimulate an employee to initiate task related changes in their jobs. To elaborate, uncertainty, as

previously explained, introduces unpredictability into the job role. Successful task crafting, leading to higher levels of self-efficacy and INS, may give the employee an enhanced sense of control when their job role or job security is uncertain. They have already found ways to solve problems, and thus uncertainty can be viewed as another problem, for which the employee has previous successes to draw on in identifying solutions (mastery and self efficacy). Solberg and Wong's (2016) exploration of the impact of job crafting as a response to role overload acknowledges that although uncertainty may arise from externally initiated job changes, an employees action to change their tasks may be driven by a desire to resolve these problems.

Accordingly, this thesis proposes that because uncertainty has the potential to create new opportunities or ways of working, it is likely to affect the relationship between autonomy and task crafting. My study will therefore test the following hypothesis:

> H1b: Uncertainty will moderate the relationship between autonomy and task crafting
> such that when uncertainty is higher, the positive relationship between autonomy and
> task crafting will be stronger.

3.1.2   Leader-Member Exchange (LMX)

LMX theory proposes that the interactions between a leader and his/her subordinates differ in regard to quality (Dansereau, Graen, & Haga, 1975; Ilies, Narhrgang, & Morgeson, 2007). As previously explained, higher quality interactions typically comprise mutual trust, respect, and loyalty, which in turn lead to shared obligations (Dienesch & Liden, 1986). Studies have found a positive association between LMX quality and, for instance, subordinate's creativity (Volmer, Spurk, & Niessen, 2012) and job satisfaction (Vecchio & Norris, 1996), and lower staff turnover (Griffeth, Hom, & Gaertner, 2000). Furthermore, a recent meta-analysis indicates that LMX is positively related to subordinate's task performance (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2015).

As I have shown in the justification for the specific focus on task crafting, I propose that quality LMX creates the conditions for task crafting to take place in three ways. First, the trust, respect, and loyalty inherent in these relationships are likely to give employees the confidence to make independent changes to their tasks (task crafting) without fear that they will be punished for doing so (Wu & Parker, 2017). In addition, higher levels of trust between leaders and subordinates are associated with lower levels of subordinate monitoring and higher levels of autonomy (Seppala, Lipponen, Pirttila-Backman, & Lipsanen, 2011), thereby creating further space for employees to enact task crafting behaviors. Furthermore, the highly visible nature of task crafting is more likely to attract the attention of supervisors and managers, and thus, a trusting relationship between the two creates the conditions for task crafting to occur.

As far as I am aware, no studies have examined the relationship between LMX and task crafting based on the Wrzesniewski and Dutton (2001) conceptualization of job crafting (see above). Therefore, this study will test the following hypothesis:

H2: LMX will be positively associated with task crafting.

3.1.3   Climate for Crafting

As has been previously explained, organisational climates are important because of their association with well-being and performance outcomes. Positive relationships have been found between supportive climates and performance, including financial and staff performance, and customer satisfaction (Jing, Avery, & Bergsteiner, 2011). Furthermore, a positive association has been found between a supportive organisational climate and employee satisfaction and commitment (Luthans, Norman, Avolio, & Avey, 2008).

My theoretical model proposes that a climate for crafting is a correlate of task crafting, and there is good evidence indicating rather than testing this relationship within the job and task crafting literature. For instance, Berg et al. (2010) found that employees' engagement in crafting

activities was largely socially determined, creating norms regarding how they should spend their time. Furthermore, the recent finding that job crafting can be undertaken collaboratively (Leana et al., 2009; McClelland et al., 2014) implies the development of shared norms around communication, coordination, and behavioral expectations. Fundamentally, I propose that if employees see their colleagues (and managers) task crafting, and see that this type of proactive and creative behavior is recognized and supported, then they are likely to engage in task crafting themselves. However, the existing evidence indicates rather than tests this supposition. My theoretical model contributes to task crafting theory by explicitly positioning and testing the relationship between a climate for crafting and task crafting and tests the following hypothesis:

H3: Climate for crafting will be positively associated with task crafting.

3.1.4   Task Crafting and Promotion

As reviewed above, I have presented evidence that job crafting relates to a range of outcomes, including performance, engagement, psychological wellbeing, person-job fit, and a sense of control. Consequently, I propose that task crafting in particular has the potential to enhance promotion prospects because of the positive individual and organizational consequences that such behavior might yield. More specifically, task crafting is positively related to intrinsic needs satisfaction (Slemp & Vella-Brodrick, 2014), to team performance (Leana et al., 2009; McClelland et al., 2014), to person-job fit (Lu et al., 2014), and to self and supervisor ratings of performance (Weseler & Niessen, 2016). Such outcomes naturally have the potential to increase the perception of an employee's value to their colleagues and managers (Podsakoff et al., 2009). This link between task crafting and promotion is a new contribution to the job crafting literature. With this in mind, my study tests the following hypothesis:

H4: Task crafting will be positively related to promotion.

Together, these hypotheses form the basis of my conceptual model of the relationships between task crafting and promotion (see Figure 1).

CHAPTER 4: METHODOLOGY

4.1   METHODOLOGICAL POSITIONING

Although conceptualised in 2001, job crafting is a relatively recent field of study that is located within the 'organisational psychology' research area. It concerns the behaviour of individuals within their work setting and the motivations, meanings, outcomes and enablers that influence work behaviour. As previously explained, within the research in this area, both positivist and interpretivist methodologies have been used in an integrated way, broadly following the integrated framework proposed by Lee (1991). Initially, interpretivist methodologies were used to more clearly understand the nature of job crafting and its motivations. However, following clarification, more recent research has begun to use positivist methodologies, including the development of a number of instruments to measure job crafting. Again, as previously explained, the development of instruments has followed preferred conceptualisations of job crafting and as such, there is a division within the research field. This study uses the extensive qualitative work that has been carried out to build understanding of each of the dimensions of job crafting as a foundation, and aims to advance this by identifying and testing specific correlates and outcomes of task crafting, one of the processes of job crafting, using a quantitative approach. It has already been shown that job crafting has a number of specific antecedents, but task crafting itself has not been examined in this way, in the existing literature.

The study takes as its starting point that task crafting is a distinguishable and discrete aspect of job crafting that can be identified by employees in the workplace and is able to be measured. As such, this study adopts a positivist methodological position, as it seeks to test relationships between factors that are indicated in job and task crafting. Positivist methodologies are appropriate where the variables in question are already known and where evidence of relationships at more than an individual level, both in terms of existence and direction, is sought. In its purest form, positivist research believes that knowing comes from objective observation of phenomena such as behaviour and that by observing and interpreting such observations, then a

larger truth can be determined. Within the positivist tradition, it is commonly held that if a large enough, and representative enough group of people demonstrate similar patterns of observable behaviour, then these patterns will be a fairly close representation of the truth, not only for a majority of people within that group, but also for the wider population that the group is taken to represent. Positive research applies this principle, and seeks to collect enough data, and subject this data to carefully checked analytical and modelling methods, that the general (or statistically significant) truth can be identified. In positivist research, statistical significance is identified as the point at which the findings or relationships are highly unlikely to have occurred by chance alone, and thus, the researchers conclude that their relationships represent the truth.

This conclusion is not without its flaws and its opponents. In relation to flaws, whilst empirical, medical trials are able to determine true objectivity in their observations, for instance in determining the extent of change within a blood lipid profile as a result of the administration of certain chemicals [drugs], behaviour and perceptions are much less easy to not only observe, but also to measure. As a consequence of this, within work psychology and many other branches of social sciences, respondent perception is taken as a proxy for an observed and objective fact. Whilst the use of perceptions appears to blur the positivist focus of this research, philosophers examining observation provide alternative interpretations. Observation in its purest form requires sensory receptors to be able to take in information about the object/s or situations in question. However, whilst individuals with such receptors can observe, understanding what is being observed requires context and this is defined as 'observing' or 'perceiving' (Paller, 1989). An example provided by Paller (1989) is that one can observe a pen, but unless one knows that this is a type of writing implement, then the former observation will be purely descriptive rather than functional. Taking this further, Dilworth (2005) acknowledges that the contextual perception of an observation may vary according to the individual. This approach is explained as the 'double content of perception' whereby an individual has the ability to observe something objectively [eg their workplace, their behaviour], but their perception of the objects of their observation varies according to the context (Dilworth, 2005). The integration of perception into

observation moves observation as a pure empirical form of data collection towards a theory-laden interpretation of the observations (Votsis, 2015). The principle of generalisation still applies, in that the researchers attempt to gather enough data from a large enough sample, that the truth as applied to the majority can be discerned through the use of robust statistical tests and analysis.

This study adopts a positivist approach on the basis of the following. Firstly, the state of research in the area is now such that conceptual understanding is robust. For example, the seminal work which first presented the development and identification of job crafting as a new approach by Wrzesniewski and Dutton (2001), was arrived at as a result of extensive qualitative studies involving interviews with job holders. The initial conceptualisations and processes identified through this approach were subsequently explored, again using qualitative interviews, to build understanding of the nuances in both interpretations of job crafting, and the differential actions taken to enact job crafting by staff at different job ranks (Berg et al., 2010). Qualitative research at this stage was essential, as understanding the personal motivations for, and actions taken by, individuals in shaping their jobs was central to surfacing the theory for this new, bottom-up process of job design. As highlighted by Atieno (2009), understanding of process, personal meaning, and context are important, particularly at the start of new theory development.

However, a natural progression of this understanding is to explore whether the personal perspectives that are exposed through such qualitative work are applicable to a broader population, and are therefore more generalizable. It is acknowledged here, however that although generalisability is not the goal of qualitative research, the development of theory from interpretivist methods does, by its very nature imply some generalisability as it seeks to surface conditions which may be applicable to more than one person (Schrag, 1992). However, for positivist researchers, being able to establish generalisability of experience, relationships and effect is a precursor towards being able to predict, and therefore understand how to influence

behaviours. The ability to predict, and influence work behaviours is particularly pertinent to organisational research which focuses on performance and productivity.

Within job crafting research, specific questions are now beginning to be raised about the strength of relationships between job crafting behaviours and work related antecedents and outcomes. For instance, Weseler and Niessen (2016) suggest that the relationship between the job crafting dimensions and objective performance should be explored further, indicating positivist methodologies (Weseler & Niessen, 2016). Lin et al (2017) conclude that task crafting depends on a job role containing a degree of flexibility (decision latitude), but acknowledge that their study did not measure the strength of the relationship between task autonomy and task crafting. In progressing these areas of enquiry, for many of the antecedents and outcomes being considered in relation to job crafting, there are existing validated quantitative research instruments with strong construct validity. Thus, tools with which to explore the existence and the strength of relationships between job crafting and relevant antecedents and outcomes, have already been subjected to academic scrutiny.

That is not to say however, that positivist approaches do truly capture objective and reproducible relationships, as the nature of employee interpretations of their workplace, and the social relationships and norms that shape these interpretations, mean that there is always a degree of individual variation in the meaning of the responses given (Marsh & Stoker, 2002). This point is acknowledged by Slemp and Vella-Brodrick (2014) in their interpretation of the finding that job crafting enhances wellbeing. It is also not the case that the use of positive approaches represents a finishing point for research, as both positivist and interpretivist research have a place in the cycle of research and have long been positioned as mutually supportive (Lee, 1991). Following the establishment and testing of relationships, there is potential to extend understanding further by returning to interpretivist research, to develop deeper understanding of what is underpinning the relationships that have been shown to be applicable across broader populations.

In line with the positivist methodological positioning, a closed, structured questionnaire was developed and administered to survey participants at two time points.

4.2   STUDY DESIGN

4.2.1   Repeated measure study design

Much of the early quantitative research into job crafting was testing the existence of relationships between job crafting as a whole, or the individual dimensions of job crafting, and other independent or dependent variables. Cross-sectional research is an important part of early research when a new concept or construct is being explored. However, as research and knowledge of an area matures, the need to develop a deeper understanding of the nature of these relationships begins to emerge, and at this point, continuing to use cross-sectional research exposes the findings to criticisms of being flawed. With regards to cross-sectional research, the most common criticism with regards to the validity of research findings is causal inference (CI), which is where cross-sectional data is interpreted incorrectly as demonstrating causation (Rindfleisch et al., 2008). Cross sectional studies are able to demonstrate the existence of statistically significant relationships, but the causal direction of such relationships is impossible to determine without carrying out longitudinal studies (Diener, 2009; Rindfleisch et al., 2008; Podsakoff et al., 2003).

Despite this limitation being widely known and acknowledged within behavioural research, cross-sectional research continues to be interpreted as suggesting causal relationships both outside and within the job crafting field (c.f. Slemp & Vella-Brodrick, 2014; Weseler & Niessen, 2016; McClelland et al., 2014). There are some studies that adopt longitudinal designs. For instance, recent research by Lin et al (2017) uses a time-lagged design to explore the relationship between underemployment, task crafting, OCB and creativity which, whilst only measuring task crafting at one time interval, does explore directional relationships between the antecedent variables of underemployment and the outcome variables of OCB and creativity.

Further strengthening of the validity of this research is provided by alternate model testing, which tests whether the positioning of the causes and outcomes of task crafting produces a stronger model fit. Vogel et al. (2016) also use a longitudinal design in their study exploring the relationship between job crafting, leisure activity and value incongruence, but this study focuses on job crafting as a whole rather than task crafting.

As set out in the preceding literature review chapter, knowledge on relationships affecting or arising from both job and task crafting is growing. A new contribution to extant research therefore is the continuation of the early work exploring causal relationships through integration of more than one time period for data collection. This study therefore adopted a repeated-measure design to enhance the validity of conclusions drawn in relation to causal inference. This design involved collecting data from participants at Time 1 for all measures in the survey, and then, after a predetermined time interval, collecting repeat data on participant promotion only. This was to enable the impact of task crafting on promotion over time to be examined.

In determining an appropriate time interval for the different data collection points in this prospective study, the dependent variable of promotion was a key influencing factor. Whilst task crafting activity may change on a daily or weekly basis, as seen in studies which explore daily (Petrou et al., 2012) and weekly (Niessen et al., 2016; Tims et al., 2016) changes in job crafting activity, larger changes such as promotion do not occur with the same frequency. For instance, Petrou et al. (2015) used a one year time interval for their study exploring the impact of organisational restructure on job crafting behaviours, as the changes implemented during organisational change needed such a time interval to both play out and for the effects to be felt. Further, a study exploring the relationship between boredom, work engagement and job crafting utilised a three year time gap between data collection on the basis that job boredom becomes a key challenge if it persists over time, more-so than if it occurs infrequently (Harju et al., 2016). However, the authors of this particular study acknowledged that such a lengthy time interval had a detrimental effect on organisational attrition between the two time intervals.

Within my research study, I take account of the fact that the frequency of promotion may be limited by the opportunities for promotion within an organisation, or by the time of year in relation to appraisal processes. Furthermore, as I have indicated in the suggestion of a positive relationship between task crafting and positive supervisory appraisals, although Lin et al (2017) show that positive supervisor appraisals can be closely linked in time to task crafting activity, the opportunity for managers to act on this in a way which leads to promotion does not normally occur over a short time period. Therefore, the time interval between the two data collection points was set at six months, which gave enough time for actions which might enhance visibility to be noticed, alongside being within a one year time frame over which promotion opportunities may become available as a result of an employees' enhanced visibility and acted on either as one-off promotions or as an outcome of normal appraisal and advancement processes.

4.3   POPULATION SAMPLE

4.3.1   Population selection

The UK university sector was chosen as the employment sector for this research. From the 2015/16 Higher Education Statistics Agency (HESA, 2015/16) data, the UK university sector at the time of data collection employed 410,130 staff, of whom 201,000 were academic and almost 209,000 were non-academic staff. Of the non-academic staff, 75% were aged between 25 and 56, and 63% of non-academic staff were female. Staff categories for this group ranged from senior management through to administrative, technical and ancillary occupations. Administrative and secretarial occupations accounted for the largest proportion of staff in this non-academic group. For the academic staff, 45% were female, and 66% were employed on either permanent or open ended contracts, with 34% being employed on fixed term contracts. Academic staff categories predominantly sit within the professional, managerial or associated professional occupational classifications within standard occupational classifications.

The university sector was chosen for the following reasons. First, universities employ staff across a range of job categories, types, and specialisms, many of which fit within the category of 'knowledge workers'. Knowledge workers typically either deal with knowledge or information in their work, may work in high tech industries or companies, or may use computers and information technology regularly as part of their work (Huang, 2011). There has been a keen research interest in understanding the attributes and characteristics of knowledge workers and the environments in which they work, as they are often at the forefront of creativity, economic productivity and, as in this instance, education provision. This research has shown that knowledge workers' often require their job or work context to embed motivating work characteristics, such as autonomy, significance (or the feeling that the work carried out has value), and opportunities for learning (Huang, 2011; Morgeson & Humphrey, 2006). If these characteristics are embedded, evidence shows that such employees will have greater job satisfaction, and consequently lower levels of turnover intention (Huang, 2011). These motivating work characteristics align well with the motivations for job and task crafting, as previously highlighted. This is particularly true for the desire for a sense of meaningfulness related to ones work.

However, there is a risk in focusing purely on one type of worker [e.g. knowledge workers] that the data will be subject to respondent bias because the characteristics of the participants or work context closely align with the aspects under investigation. Thus, the second reason for choosing the university sector was precisely because of the variety of work roles undertaken in university. As is shown from the breakdown of staff presented above, the range of job roles undertaken by staff in universities is broad and there are large numbers of staff who would not fit the categorisation of knowledge workers, despite working within a 'knowledge based institution'.

4.3.2   Participant recruitment

Participants were recruited initially via convenience sampling. The author, as part of wider work to improve wellbeing across the HE sector, had positive working relationships with Human Resources Directors at a number of UK institutions that enabled a discussion to be initiated about the study and about potential distribution of the survey. This approach resulted in five UK universities consenting to the survey being distributed to staff. Smaller institutions were able to give consent to the survey being distributed widely, and supported the distribution via 'all staff emails', along with distributing paper copies of the survey for staff who did not have regular access to computers as part of their work. Larger institutions were able to give consent for the author to speak with identified faculty deans and heads of department, with a view to gaining permission for survey distribution across their area, using either email or paper copy distribution. In addition, the survey was distributed more widely through to academic staff across the UK via a Universities and College Union (UCU) e-newsletter posting.

4.3.3   Sample size requirements

Prior to beginning the survey, the required sample size in relation to the proposed model and also the proposed methods of analysis (Structural Equation Modelling (SEM) and regression analysis) was considered. Guidance on required sample sizes for SEM varies depending on whether the variables are scale, interval or dichotomous. Schumacker and Lomax (1996) suggest that 100 – 150 subjects is the minimum required to conduct SEM. Guidance provided by Bartlett et al. (2001) suggests a formula which uses Cochran's equations to provide a means of calculating and justifying sample sizes. Other research for both regression analysis and SEM suggests a 'rule of thumb' ratio of respondents to parameter, varying firstly from five to one, to ten to one (Hu & Bentler, 1999), and also varying in the use of 'parameter' or 'item'. Within SEM, there are more parameters than items, as parameters also represent relationships between observed and latent variables, and between independent and dependent variables, whereas items represent questions asked. Given the disagreement around required sample size, the formula set

out by Bartlett et al (2001) using Cochran's equations, was selected as a means to calculate and justify sample size decision making that is robust and can be applied to both categorical and interval data. A further 'rule of thumb' check was carried out based on a respondent to parameter ratio of five to one. These two methods identified that a sample size of between 215 and 320 were required (see Table 2).

Table 2: Application of Bartlett et al's (2001) Sample Size Calculations

Data type & equation	Variable	Number of response options	Calculation	Estimated sample size
Continuous $$n_0 = \frac{(t)^2 * (s)^2}{(d)^2}$$	Job Crafting Uncertainty LMX	5 response options	$$n_{0=} \frac{(1.96)^2 \times (1.25)^2}{(0.15)^2}$$	260
	Autonomy Climate for Crafting	6 response options	$$n_{0=} \frac{1.96^2 \times 1.2^2}{(0.18)^2}$$	172
Categorical or dichotomous $$n_0 = \frac{(t)^2 * (p)(q)}{(d)^2}$$	Gender Promotion	2 response options	$$n_0 = \frac{(1.96)^2 * (0.5)(0.5)}{(0.05)^2}$$	320

4.4 MEASURES

4.4.1 Questionnaire design

The questionnaire wording and structure was carefully considered in order to maximise respondent completion, to minimise ambiguity and misunderstandings, and to minimise respondent bias. Firstly, because the questionnaire was introducing and exploring concepts which are at the forefront of organisational research, terms within the questionnaire such as job and task crafting may not have been understood by respondents. To overcome this, for each section where a new concept or term was introduced, an explanatory sentence or paragraph was used to clarify, and this explanation included examples where appropriate. To ensure the respondents focus was on their own experiences and perceptions at work, these introductory

sentences or paragraphs included personal pronouns, such as '*in your work environment*' and encouraged personal reflection, such as *'thinking about your work over the last six months....'*. To give structure to the questionnaire without using technical terminology, the headings giving the title of each of the variables, such as 'autonomy, job crafting, climate' were not used, and instead headings indicated the general focus of the section, for instance, the demographic questions section was headed '*About you*'. Finally, ordering of the questions and question sections aimed to maximise completion, by avoiding asking difficult or personal questions at the start of the questionnaire, and building up the complexity of the questions as the questionnaire progressed. A direct example of this is in the location of the demographic questions at the end of the questionnaire. The questionnaire began with a brief contextual introduction, an ethics statement and a thankyou, and finished with an additional thank you and a reminder of who to contact for further information.

4.4.2   Approach to choosing and managing measures

For this study, validated measurement scales were sought for each measure, where they were available. However, an important consideration was keeping the number of items used to a number which was small enough to allow a realistic sample size to be sought, but which would also meet the extended sample size criteria for needed to carry out structural equation modeling. For some validated scales, a larger number of items were available than would be able to be used in the study, and had each scale been used for the analysis in its entirety, the number of response items would mean that the sample size needed would be unfeasibly large in order to accommodate the number of parameters that a large number of items generates, when using SEM. Thus, using fully validated scales would have meant that the study would not have been able to use SEM analysis, introducing the drawback of being unable to explore relationships between individual study variables that is one of the key justifications for using SEM instead of simple linear regression (Byrne, 2010). At this point, a decision was taken to collect data using

the full number of items for validated scales, and then subject the scale to an item reduction process.

Following deciding to use a reduced number of items, item reduction strategies were reviewed. Initially, parcelling was considered as a means of condensing the data, as it enables larger constructs to be captured using composite measures. Two methods of parcelling were considered. First, internal consistency parcelling, whereby items which concerned a similar theme would be grouped together into one parcel, and thus the parcel represented the mean of that theme (Little et al., 2002; Cole et al., 2016). Alternatively, domain representative parcelling, whereby items from across the domains which make up a latent construct were combined into each parcel, and thus each parcel represented a composite of the entire scale (Little et al., 2002; Cole et al., 2016). In this way, measures with, for instance, nine items could be condensed into a three item scale, thus meaning analysis and modelling with a smaller number of participants was possible. This method of reducing the number of items for analysis is considered to be academically acceptable, as long as there is explicit clarity for the rationale and methods (Little et al., 2002).

Recent analyses of the strengths and limitations of parcelling finds SEM has reduced power to detect model misspecification when parcelling is used (Rhemtulla, 2016). Further, when data has higher levels of non-normal distribution, parcelling produces higher levels of Type II error (Bandalos, 2008). Parcelling can produce stronger model fit indicators in SEM, but only when the latent variables are unidimensional, rather than multidimensional (Bandalos, 2002). Further, errors due to model misspecification are not as consistently identified using model fit statistics when parcelling is used, with greater strength being found for RMSEA and SRMR model fit indicators than maximum likelihood indicators (Rhemtulla, 2016). Consideration of the drawbacks and potential errors that could be inflated when using parcelling led to the decision to choose an alternative method for selecting relevant items from the scales used.

I decided to use three items from each of the validated scales in the SEM analysis as this approach reduced the number of total items in the model to a level where a feasible sample size for the study could be attained. Whenever the scale contained more than three items, respondents were asked to complete all items from the validated scale as part of the questionnaire. To identify which items to use in the SEM analysis, scale items were analysed for firstly for construct validity, and subsequently reviewed by academic colleagues for face and construct validity. Following this, principal component analysis was carried out to identify items that loaded strongly onto the overarching latent variable. Items were then selected for use in SEM analysis where they exhibited strong face and content validity and also loaded most highly onto the latent variable. Where available, published scale validation studies were utilised to support identification of items with the highest factor loadings for each key construct, where a measure contained more than one construct.

4.4.2.1 Autonomy

Autonomy was measured using three items from Breaugh's (1985) nine item autonomy scale. However, all nine items were completed by respondents at Time 1, and subsequently, these items were subjected to face and construct validity checking, to identify items which ones most closely represented task autonomy. Additionally, all of the items were examined for their loading onto the latent autonomy variable using principle component analysis, with items loading most strongly onto the latent variable of autonomy being selected, where they also met the construct validity criteria of being related to task completion. These two levels of examination identified items three, five and nine as representing autonomy of method, sequencing and objectives that was most relevant to task completion. For all items, the response scale ranged from "strongly disagree" (1) to "strongly agree" (7). Cronbach's alpha for the three item scale was .84 and for the full nine item scale was .94. The three items selected for inclusion in SEM were as follows:

- I am free to choose the method(s) to use in carrying out my work.

- I have some control over the sequencing of my work activities (when I do what).

- I have some control over what I am supposed to accomplish (what my supervisor sees as my job objectives).

The additional items that formed the nine item autonomy scale were as follows:

- I am allowed to decide how to go about getting my job done (the methods to use).

- I am able to choose the way to go about my job (procedures to utilise).

- I have control over the scheduling of my work.

- My job is such that I can decide when to do particular work activities.

- My job allows me to modify the normal way we are evaluated so that I can emphasise some aspects of my job and play down others.

- I am able to modify what my job objectives are (what I am supposed to accomplish).

Although, as explained above, due to the limitations of sample size requirements when carrying out structural equation modelling (SEM), it was not possible to use these additional items in the SEM analysis, the full scale mean scores were able to be used for initial correlation analyses, which enables the findings from this study to be compared with other studies that also used the full autonomy scale (Breaugh, 1985).

4.4.2.2   Uncertainty

Uncertainty was measured using the three items from Leach et al.'s (2012) uncertainty scale that focused on task certainty. The response scale ranged from 'not at all' (1) to 'a great deal' (5). Cronbach's alpha was .86. The three items were as follows:

- Do your tasks vary on a day-to-day basis with little or no warning?

- Do you come across unexpected problems in your work?

- Does the order in which you do tasks change with little or no warning?

4.4.2.3 Leader-Member Exchange

LMX was measured using three items from Graen and Uhl-Bien's (1995) LMX-7 measure, chosen for their strong face validity. Initially, respondents completed all seven items from the LMX-7 measure. In line with the planned analysis strategy, the items were then subjected to face validity analysis to identify items that related specifically to task completion, followed with factor analysis using principal component analysis to explore how strongly each of the items loaded onto the latent variable of LMX. Items that loaded most strongly onto the latent LMX variable were reviewed and selected where they had strong face validity. Because the items in this scale did not relate as clearly to task completion as other scales used in this study, factor loading was used as the main selection criteria. Response scales differed between items and respondents were asked to focus on their leader/supervisor. Cronbach's alpha for the three item scale was .91, and for the seven item scale was .94. Items selected were:

- How well does your line manager understand your job problems and needs? The response scale ranged from "not at bit" (coded 1), to "a great deal" (coded 5).

- How would you characterise your working relationship with your line manager? The response scale ranged from "extremely ineffective" (coded 1), to "extremely effective" (coded 5).

- I have enough confidence in my line manager that I would defend and justify his or her decision is he or she was not present to do so. The response scale ranged from "strongly disagree" (coded 1), to "strongly agree" (coded 5).

Items that were also completed by respondents were:

- Do you usually know how satisfied your line manager is with what you do? The response scale ranged from "rarely" (coded 1), to "very often" (coded 5).

- How well does your line manager recognise your potential? The response scale ranged from "not at all" (coded 1), to "fully" (coded 5).

- Regardless of how much formal authority your line manager has built into his or her position, what are the chances that your line manager would use his or her power to help you solve problems in your work? The response scale ranged from "none" (coded 1), to "very high" (coded 5).

- Again, regardless of the amount of formal authority your line manager has, what are the chances that he or she would 'bail you out' at his or her expense? The response scale ranged from "none" (coded 1), to "very high" (coded 5).

4.4.2.4 Climate for Crafting

Items for the 'climate for crafting' measure were created, based on the following two aspects of social norm theory (Bandura, 1986):

- Injunctive (subjective) – influenced by personal values (IPV) *or* what others think of a behaviour (IOT)

- Descriptive – based on our observations (DOB) *or* perceptions (DPB) of frequency or prevalence of behaviour.

Social norm theory is an appropriate theoretical background due to the potential for task crafting and reactions to it, to be both observed and, to influence task behaviours. This contagion of behaviour is demonstrated in research finding job crafting takes place at team level (Tims et al., 2013b; Leana et al., 2009). To inform the development of items, I first reviewed existing measures of climate in relation to their integration of descriptive and subjective norms. Measures reviewed included Psychological Climate (Brown & Leigh, 1996), the Climate for

Teamwork measure of Team Climate Inventory (Anderson & West, 1998) and its shortened version (Kimivaki & Elovainio, 1999), the Scale of Constructive Controversy (Tjosvold et al., 1986), and the Climate for Innovation (Siegel & Kaemmerer, 1978). My review of these measures found that both subjective and descriptive norms were integrated throughout all measures, but items measuring descriptive norms (both types) norms influenced by personal values were more frequently included than items measuring what others' think of a behaviour. This review confirmed that the approach to integrating social norms was appropriate. I then reviewed the existing measures again to evaluate their fit in relation to the conceptualisation of a climate for crafting. This second review identified that although each of the existing measures integrated the concept of 'psychological safety for doing things differently', the strong integration of management support into each of the measures positioned them as conceptually different from the private and self-initiated actions that are undertaken in job and task crafting.

Therefore, three new items were created to measure climate for crafting, drawing on subjective and descriptive norms. However, in order to accommodate the broader social and behavioural norms that makes up a work climate, this measure focussed on job rather than task crafting. This enabled the measure to capture and measure the general acceptability of fine tuning at work, in whatever form that might be. In my opinion, this was an appropriate *a priori* approach as the nature of a climate is such that it does not only apply to one form of work behaviour (Schneider et al., 2013) and to separate out task crafting as a specific activity would have introduced an artificial and unsupported boundary. The items therefore measured observed behavioral norms for job crafting. To ensure participants understood what job crafting involved, a definition was provided before the questions. The response scale ranged from "strongly disagree" (1) to "strongly agree" (6). Cronbach's alpha was .91.The three items were:

- In my work area, job crafting is a normal work behaviour.
- In my work area, job crafting is an acceptable work behavior.

- In my work area, job crafting is a common work behaviour.

4.4.2.5   Task Crafting

At the time of carrying out the study, there were no validated instruments that had been developed to measure task crafting. Therefore, to inform the development of a measure for task crafting, an analysis of existing measures of job crafting was carried out. As identified in the literature review, the existing measures varied as a result of being based on different conceptual interpretations of job crafting. Tables 2 and 3 present a synthesis of the current three instruments that are being used, two of which are based on Wrzesniewski and Dutton's (2001) conceptualisation (Slemp & Vella-Brodrick, 2014; Niessen et al., 2016), and one that is based on the JD-R conceptualisation measure (Tims et al., 2012). The comparison here focuses specifically on items used to measure task crafting. Appendix 1 presents a broader comparison of each measure against the four processes of job crafting identified by Wrzesniewski and Dutton (2001) and Lyons (2008).

To offer a brief critique of each instrument in turn, the Tims et al. (2012) instrument is not as clearly focused around task crafting, relational crafting, cognitive crafting and self-initiated skill development due to its location within the JD-R framework. However, task crafting is identifiable from the items in the measure (see Table 3 and Table 4). In relation to task crafting, the items have two foci. Firstly a focus on the extent to which the employee reduces their exposure to work that is intense, emotional or overly difficult, and secondly a focus on the extent to which an employee is proactive in either getting involved in, or initiating new work tasks/projects. The overarching framework of reducing hindering demands and increasing challenging demands is clear in these items. The measure more closely represents what could be called a 'demand and resource adjustment measure rather than a job crafting measure. The emphasis on person-job fit and work meaningfulness is almost entirely absent from this measure.

Slemp and Vella-Brodrick's Instrument (2014) is firmly grounded within the three constructs of Self-Determination Theory (SDT) (Deci & Ryan, 1985) and, in contrast to the other two instruments, integrates the concept of change into the measure. The measure has an accompanying introduction which sets the context for changes as the desire to make work more engaging and fulfilling, thus encouraging respondents to focus on enhancing meaningfulness as the purpose of job crafting, an approach that was adapted within my questionnaire as task crafting was likely to be a new concept for respondents. For task crafting, the measure focuses on the extent to which the employee makes changes to enhance and improve their work and match their work with their own skills and interests. This measure is strongly located within positive psychology and overtly examines factors which have potential to create positive wellbeing for employees. There is no inclusion of self-initiated skill development, with the emphasis in the task crafting items being on utilising existing skills to their best advantage.

Neissen et al's Instrument (2016) is the most concise of the three instruments and, with it's introductory statement for each of the processes being *'So that the job I do suits me….',* the emphasis on person-job fit is clear. The response items range from 'not at all' to 'absolutely' which does not give an indication of whether changes are being made, and may be difficult for respondents to choose their response category, as 'absolutely' is not an opposite to 'not at all'. For task crafting, the items focus on employees' concentration, intensity and seeking additional tasks. Both concentration and intensity are similar and thus the task crafting measure appears to define task crafting as concentrating hard and seeking additional tasks.

This analysis shows that although task crafting as identified by Wrzesniewski and Dutton (2001) can be identified within the various measurement instruments, the variation between the instruments is complicating and confusing research around job crafting rather than consolidating it. Of the three current instruments, one has moved away from the original conceptualisation of job crafting and although useful and interesting, appears to represent a measure of demand and resource adjustment (Tims et al., 2012). The most recent measure (Niessen et al., 2016) does

embed the concept of person-job fit strongly, but the measurement items are a little vague and potentially difficult for respondents to complete. The Slemp and Vella-Brodrick (2014) measure appears to have retained the focus on work meaningfulness and offers potential for future research. The measure has, as yet however, not been subject to the extensive testing that the Tims et al. (2012) measure has, which would strengthen its validity.

Table 3: Comparison of current task crafting measurement items

Tims et al Instrument (2012)	Slemp and Vella-Brodrick Instrument (2014)	Neissen et al Instrument (2016)
Increasing Structural Job Resources • I decide on my own how I do things. **Decreasing Hindering Job Demands** • I try to ensure that I do not have to make many difficult decisions at work. • I organise my work in such a way to make sure that I do not have to concentrate for too long a period at once. **Increasing Challenging Job Demands** • When an interesting project comes along, I offer myself proactively as project co-worker. • If there are new developments, I am one of the first to learn about them and to try them out. • When there is not much to do at work, I see it as a chance to start new projects. • I regularly take on extra tasks even though I do not receive extra salary for them.	'Please indicate the extent to which you engage in the following behaviours…' **Task Crafting** • Introduce new approaches to improve your work. • Change the scope or types of tasks that you complete at work. • Introduce new work tasks that you think better suit your skills or interests. • Choose to take on additional tasks at work. • Give preference to work tasks that suit your skills or interests.	**Task Crafting** So that the job I do suits me … • I concentrate on specific work tasks. • I undertake or seek for additional tasks. • I work more intensively on tasks I enjoy.

Table 4: Synthesis of concepts arising from analysis of task crafting items

	Tims et al (2012)	Slemp & Vella Brodrick (2014)	Neissen (2016)
Task Crafting	The extent to which employees reduce their exposure to work that this intense, emotional or overly difficult. The extent to which employees are proactive in getting involved in or initiating new projects/tasks.	The extent to which employees make changes to enhance and improve their work. The extent to which employees make changes to better match their work with their own skills and interests.	The extent to which employees concentrate hard and work with intensity. The extent to which employees seek additional tasks.

In selecting the measure for this study, the instrument developed by Tims et al. (2012) had only just been published and, as previously explained, adopted a conceptualisation of job crafting that was located on the very fringes of positive psychology, and as such, was incompatible with the more positively focused aims and nature of this study. There had been one study which had measured task crafting, and had used a series of three questions (McClelland et al., 2014), although these had not been subjected to validation as they focussed only on task crafting rather than job crafting as a whole, and within the job crafting literature, the identification and separate measurement of each of the processes of job crafting was not yet being carried out. In light of this, the three items used by McClelland et al. (2014) were adapted for use in this study, and were preceded with an explanatory statement to firstly give respondents a context in which to consider their answers, and secondly, contributed towards overcoming common method variance. The statement read:

"The following questions concern job crafting, which is when an employee makes self-initiated changes to how they go about doing their job. This can include changing how tasks are carried out or changes to the tasks that they do. It can include changing how they interact with others at work, or who they interact with. It can include the employee changing how they think about their work or work tasks. It can also include making changes to the level of demand or challenge in the job, for example by taking on new challenges, or by reducing workload or tasks. **The main thing that makes job crafting different to other forms of job change is that these changes are self-initiated and voluntary."**

The response scale ranged from "not at all" (1) to "a great deal" (5). Cronbach's alpha was .85.The three items used were:

- During the past six months, to what extent have you <u>voluntarily</u> changed the skills you use in your work?

- During the past six months, to what extent have you <u>voluntarily</u> changed the kind of work tasks you do?

- During the past six months, to what extent have your <u>voluntarily </u>changed the variety of work tasks you perform?

4.4.2.6 Promotion

Across the University sector, progression within a grade is recognised with salary increments that conform to a sector-wide unified pay framework (UCU, 2014). Promotion, however, is generally and distinctly understood to mean progression from one role to a more senior role, achievement of which requires evidence of fulfilling specific criteria (Wiley et al, 2016). Promotion applications are generally assessed formally in relation to productivity, research, and achievement of organisational goals (Wiley et al, 2016). Recent research on early career researchers finds that objective career success is consistently understood in terms of formal promotion, with research productivity, status and salary also being identified as objective measures of success (Sutherland, 2017).

Within this study, promotion, as defined in Section 2.5.2.3, was measured using the single item "Have you been promoted within the last six months?" Participants responded either "yes" (1) or "no" (0). As this question concerned a factual dichotomous event, it was unlikely to be affected by bias and therefore represented a distinct and objective outcome variable (Podsakoff et al., 2003). However, because only one question was asked about the dependent variable of promotion, it was important to be confident that respondents had a common understanding of promotion that was separate from other indicators of progression such as salary increments. To achieve this level of confidence, a comparative analysis of UK university policies, procedures and guidance relating to promotion was carried out. This analysis included universities representing all of the main university collaborative groups such as Million+, GuildHE, Russell Group, Worldwide Universities Network, Coalition of Mainstream Universities (CMU), Universitas21, and University Alliance (see Appendix B). Across all of the university policies reviewed, promotion and incremental progression were clearly separated, with formal criteria,

application processes and approvals panels being needed for promotion, compared with automatic, often work-related anniversaries determining incremental progression. The analysis showed that within HE institutions, promotion is consistently and clearly related to performance, whereas for incremental progression, performance is mentioned but is a minor aspect or in some instances absent. In fact, incremental reward is predominantly part of a normal employee advancement journey within a grade boundary, which recognises the enhanced experience that an employee has within their grade, without adding additional responsibility to that employee. It is a financial rather than responsibility based reward. This implicit linguistic construct consistency for promotion is also demonstrated within research exploring academic promotion, where the term is used without any additional definition or clarification (*c.f.* Dobele & Rundle-Theile, 2015; Smith et al., 2014; Subbaye & Vithal, 2016; Thannasoulis et al., 2018).

This analysis of published research, policy and practice across the university sector demonstrated a clear and significantly different process being applied to promotion to a higher grade, compared with incremental progression within a grade (see Appendix B). Due to the consistency and formality of the promotions process, it is therefore unlikely that within the HE sector, respondents to this question would have had different understandings of the term promotion.

4.4.2.7   *Demographic characteristics*

I also asked respondents to report on their age, gender, tenure, highest educational level and job category. This was to allow these characteristics to be controlled for in the model analysis. Age is important as there is good evidence that promotion focused motivations change over the lifespan (Rodrigues et al., 2013; Litano & Major, 2016). This sits alongside evidence that an employees' promotion orientation is associated with job crafting (Brenninkmeijer & Hekkert-Koning, 2015). Educational level is closely associated with job seniority, such that one would expect employees with higher levels of qualifications to be in jobs that have higher levels of

autonomy and responsibility, and thus potentially greater opportunities for task crafting. However, as McClelland et al. (2014) has already shown, employees with low levels of autonomy also carry out task crafting and therefore, inclusion of educational level allows this aspect to be controlled for in the modelling. Information on tenure is important as employees who have newly joined an organisation are less likely to be promoted than those who have worked for longer. However, there is also evidence that employees' promotion focus and subsequently promotion focussed activities change across the lifespan (Litano & Major, 2016) and therefore, being able to control for tenure allowed this to be taken into account.

4.4.3 Approach to dealing with method bias

Method bias was a particular concern in the development of this questionnaire, drawing on the broader conceptualisation of method bias adopted by Podsakoff et al. (2012). This type of bias was a particular concern because all of the measures used in this study were self-rated. In order to reduce the impact of method bias, both procedural and statistical remedies were implemented as follows.

4.4.3.1   Procedural remedies

First, common rater effect bias with the participant as the source was possible because individual respondents completed all of the survey measures, which exposed the questionnaire responses to bias including consistency motif, implicit theories, social desirability, and transient mood state (Podsakoff et al., 2003). Following Podsakoff et al. (2003) and Podsakoff et al. (2012) consistency motif bias was countered by structuring the questionnaire to ensure that no two measures with the same response scale were asked consecutively, creating a methodological separation between both individual measures in the questionnaire and between the independent and dependant variables. Further, where new terms were introduced (such as task crafting), implicit theory bias was countered by providing explanations to avoid ambiguity. Finally, the dependent variable asked participants to report on the occurrence or not of promotion. As this

was a factual, dichotomous response, the likelihood of social desirability bias in relation to this response was low (Podsakoff et al., 2003). Furthermore, the time-lagged nature of the study which introduced a six month time gap in the collection of the time 1 and time 2 dependent variable of promotion created a temporal separation between the independent and dependent variables at time 1 and the dependent variable at time 2 which is recommended as a means to reduce method bias (Podsakoff et al., 2003). The risk of transient mood state bias was countered by using items from validated scales whereever possible, although any questionnaire asking respondents to report their *current* perceptions is vulnerable to this type of bias.

Second, item characteristic effect bias due to item social desirability, common scale formats and common scale anchors was possible because in considering the ease of completing the questionnaire for respondents when designing the questionnaire, reverse coded questions and hugely varied response options were rejected, as a part of the strategy to maximise respondent numbers. Podsakoff et al. (2013) argue that this type of bias has high potential to introduce error into the results because the requirement for respondents to cognitively process each item or scale independently is reduced. To address common scale formats and common scale anchors, although two of the measures used the same response scales, they were not positioned adjacent to one another on the questionnaire and therefore, respondents had to reconsider their response options for each measure. Utilising items from previously validated scales aimed to reduce item social desirability bias.

Item context effect bias was a particular risk in this questionnaire for the task crafting and climate for crafting measures. However, although one response to this could have been to have utilised clearly distinct methods and response scales, it is theoretically likely that these items will be related, as one is measuring task crafting activity and the other is measuring acceptability of activities including task crafting. Therefore, the potential for bias was reduced by ensuring that the response options for these two measures were different, even though the measures were physically located adjacent to eachother in the questionnaire.

Finally, measurement context effect bias was possible in the first time period for questionnaire completion, as all measures were completed at the same time and using one instrument. Again, the study design including a repeat collection of the dependent variable measure at a later point in time reduces the likelihood of this error (Podsakoff et al., 2003).

4.4.3.2   Statistical remedies

The first stage of implementing a statistical remedy to address common method bias was to subject the survey items to exploratory factor analysis, as a means of exmaining the discriminant validity of the latent variables. The Harmans' single factor test was first used, applying principal axis factoring and fixing the number of factors to be extracted to 1. Following Podsakoff et al. (2003), no rotation was used in this analysis. The results of this analysis indicated that a one factor solution explained 25.81% of the variance in the model, which provided a first indication that common method bais was not accounting for a signficant proportion of the variation in the data.

Next, the single-method-factor approach was used to statistically estimate method variance at measurement level and control for this (Podsakoff et al., 2003). Whilst this has the disadvantage of only being able to control for single sources of method bias at a time, the conceptual and procedural remedies already applied identified that the key significant source of common method variance remaining in the survey instrument after these measures had been implemented was item context effect bias, and thus, this method of identifying and controlling for bias was appropriate. Common latent factor analysis was carried out, with a constrained common latent factor applied to every observed variable in the model. Comparison of the difference in regression weights with and without the common latent factor in the model showed that common method bias was not a problem within this model as none of the regression weight

differences exceeded 0.2. Thus, application of imputation to control for common method bias was not necessary.

Finally, the discriminant validity of the latent variables was examinined by running a confirmatory factor analysis using principle component analysis and a varimax rotated solution (Hu & Bentler, 1999; Field, 2015). In running the analysis, the number of factors was unconstrained, a threshold for eigenvalues greater than 1 was applied, and coefficients below 0.3 were supressed (Stevens, 2009) The resulting scree plot identified five factors above both the selected eigenvalue and above the elbow in the plot (Figure 2). The factor matrix (Table 5) showed that each of the observed variables loaded onto the appropriate latent variable at or around the .71 loading, indicating an excellent fit to the factor (Robinson, 2017). All five factors explained 71% of the variance in the model. This analysis confirmed that the latent variables in the model were distinct from one another.
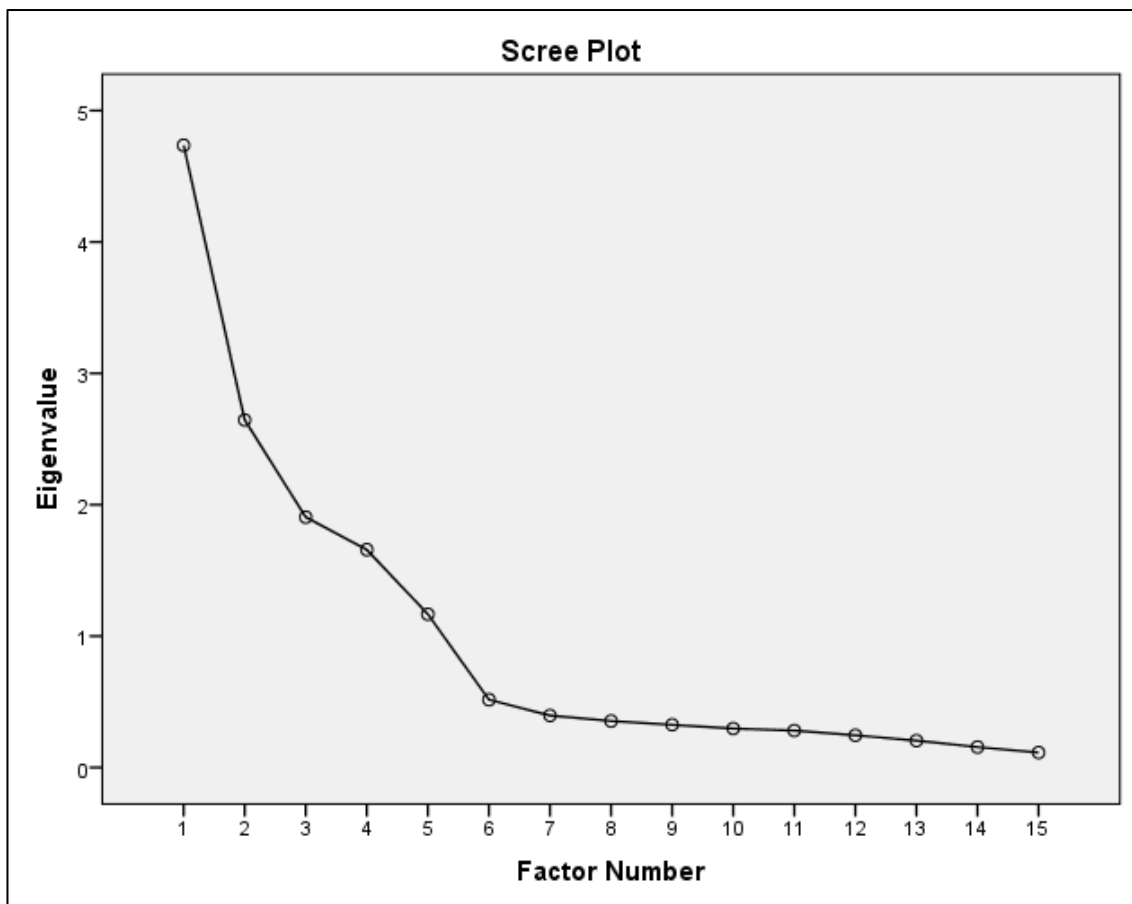
Figure 2: Scree Plot from Factor Analysis

Table 5: Factor analysis results

	Factor				
	1	2	3	4	5
CLIMCR2	.963				
CLIMCR3	.837				
CLIMCR1	.755				
LMX3		.887			
LMX2		.816			
LMX1		.807			
CRAFT2			.918		
CRAFT3			.795		
CRAFT1			.673		
UNCER3				.867	
UNCER2				.790	
UNCER1				.777	
AUT2					.822
AUT1					.742
AUT3					.665

4.5 PROCEDURE AND SURVEY DISTRIBUTION

4.5.1 Survey distribution

At the first time interval, both on-line and paper based methods were used for the survey distribution, and with the exception of the consent information, both questionnaires contained the same questions, asked in the same order. An on-line method was chosen as primary delivery method as the sample population included a number of different organisations, each of whom employed staff for whom on-line survey completion was a familiar task. However, to take account of the diversity of job categories required for the sample population, a paper copy of the survey was also made available to participating organisations. This enabled staff who did not regularly work with computers to participate in the study.

The electronic version was prepared using the 'Bristol On-line Survey Tool', a tool which is used across the HE sector for many staff surveys, and thus, was a familiar platform for potential respondents. The paper copy of the survey was printed at both A4 and A5 size, and distributed along with a stamped addressed envelope, to ensure staff completing paper copies could return the survey directly to the researcher. This was important as the survey promised confidentiality and anonymity of responses. Both the electronic and the paper surveys had an introductory page which outlined the nature of the study, and also set out the ethical framework under which the research was being conducted. For the electronic survey, respondents were informed that by continuing with the survey, they were giving informed consent. For the paper survey, respondents were asked before answering any questions, to tick a box to indicate that they understood the nature and ethical framework of the study and give their informed consent. Each institution was given a unique survey completion code, to ensure that completed responses could be separated by institution. This was in response to HE institution requests for feedback from their staff completions of the survey, and parameters around confidentiality and participant anonymity were agreed, so that none of the participating institutions would have access to the raw data, and that the analysis would anonymise respondents. Further, it was agreed that there would be no analysis of any group size of less than ten respondents, to further protect respondent anonymity. Both paper and electronic surveys instructed respondents to complete all questions, and the electronic survey design instructed respondents to complete any missing answers before allowing progression to the next page in the survey. Respondents were given the option of not providing their contact details.

The survey was distributed by the participating institutions, through their departmental or faculty distribution lists. The survey was accompanied with a supporting introductory email or information sheet, which introduced the researcher to the respondents and clearly identified that the research was not being carried out on behalf of their employing institution, but was part of a PhD study. The accompanying information also set out the process for completing the study (see Appendix D). Two weeks after distributing the initial survey, respondents were sent an

email reminder, along with the survey link. Within each institution, the survey remained open for four weeks. Because the survey process involved a follow up request related to promotion after six months, respondents were asked to provide their email addresses. This option was set as voluntary rather than compulsory, and clear explanation was provided that this was to enable the follow up question to be sent to respondents. Six months after completing the Time 1 survey, respondents who had provided their email addresses were emailed a link to the follow up survey, along with their unique identification number (see Appendix E).

4.6   DATA SCREENING AND ANALYSIS STRATEGY

4.6.1   Initial data preparation strategy

Following data collection, I entered the data from all paper copies of the survey onto the on-line survey tool, using the relevant institution's survey link. All data were then uploaded initially into a series of separate excel spreadsheets, with one for each institution. Data added at this stage included the date of completion, an institution code and a unique response code for each respondent. Date of completion was essential as all respondents who had provided their contact details were invited to complete a second survey, six months after completion of the first. As the survey was distributed over a staggered time-period, this enabled the intervals between the two surveys to remain consistent. The unique response code for each respondent was required as the follow up survey identified respondents using this code and allowed the two responses to be paired. This code was emailed to respondents with the request to complete the follow up question and they were asked to enter this code along with their response.

During uploading, I instructed Bristol On-line Survey to code all responses, and produce a key. This translated the data into numerical form. I then analysed the key to ensure that the codes allocated were appropriate in terms of the direction of response and also consistent across all institutions. I then combined all uploaded data into one excel spreadsheet, and subsequently uploaded this data into IBM SPSS® Version 21 for analysis.

Once the data had been uploaded into SPSS®, to ensure the analysis controlled for demographic variables, I created dummy variables for job category and educational level. Following visual analysis of the number of responses in relation to job category and educational level, I divided job categories into three categories: academic and research; professional and administrative; clerical, ancillary and technical. I recoded each job category into a dichotomous variable of 1 = belonging to the staff group, and 0 = not belonging to the staff group. I recoded educational qualifications into two groups, one representing having a degree or higher level of qualification, and a second representing having qualifications that were lower than degree level. Because the range of institutions that respondents worked at varied, and in some instances was not recorded, I did not include this demographic variable in the analysis.

To prepare the dichotomous dependent variable of promotion for analysis, I duplicated the variables and transformed them into ordered categorical variables (Arbuckle, 2014), to enable AMOS™ to be able to incorporate them into the analysis. This transformation rescales the variable and enables it to be treated as if it has an underlying numeric scale with a normal distribution.

Next, for each of the latent variables, I calculated the mean of the subscale, along with a Z score. I then checked all of the data for normality of distribution by examining histograms, stem and leaf plots and normal Q-Q plots. For the latent variable means, I used bootstrapping analysis based on 1000 samples to enable identification of the sample distribution mean and identify the proportion of responses that fell within 95%, and to calculate an accurate standard deviation for this mean. I then compared this mean to the Z-scores, to identify specific outlying cases. Outliers ±3SD were identified and removed as it is recognised that in a normally distributed sample, 99.87% of data points will fall within this range (Howell, 1990), and SPSS was instructed to replace missing data with the mean score for that scale. Whilst multiple imputation is generally recommended for retaining variability and minimising standard error when dealing

with missing data, the number of outliers was small enough that mean replacement was an appropriate strategy (Field, 2015). Retaining a full dataset then ensured that bootstrapping techniques could be used later in the analysis, as bootstrapping requires there to be no missing data (Field, 2015).

I then performed correlation analysis of the study variables, using the independent variable means, the dependent variable scores, and the respondent demographic information including dummy variables. I used Pearson Correlation, to identify initial relationships and compare them with the proposed model, as this correlation is appropriate for normally distributed data. The inclusion of demographic variables enabled important and significantly correlated demographic factors to be identified and subsequently controlled for in the model testing.

4.6.2 Time 1 analysis using Structural Equation Modelling

4.6.2.1 Model testing

Structural Equation Modelling (SEM) using IBM SPSS® AMOS™ version 22 was selected to test the hypothesised model from the first round of data collection. SEM offers a means of calculating the overall strength of a multi-dimensional model, along with the strength of relationship between the separate variables within the model (Byrne, 2010). This gives the researcher the ability to compare models and draw confident conclusions as to the explanatory power of one model over another, taking account of error and the complexity of the model (Tomarken & Waller, 2005).

Normally, structural equation models which incorporate continuous observed or latent variables are analysed using maximum likelihood estimation (MLE). This type of estimation assumes a normal distribution for each of the variables in the model, and assesses the likelihood of the model producing the data that is observed. However, the inclusion of the dichotomous variable of promotion within the model, for which a normal distribution is unlikely to occur, required additional analysis using Bayesian Estimation. Bayesian Estimation and Maximum Likelihood

Estimation are frequently used in conjunction, with each type of analysis providing a means of validating and checking the results of the other. Additionally, MLE as integrated into AMOS™ cannot analyse categorical data and thus, following good practice guidelines (Byrne, 2010), a dual approach to analysis was used.

Bayesian Estimation is based on the principle that the researcher has prior information about the expected distribution of the data in the model, and thus, the model can accommodate non-normal distributions because these prior known distributions are entered into and subsequently inform the analysis. This prior information is then used as a baseline against which to compare subsequent analysis iterations, with a resulting 'posterior distribution' figure being generated that has reduced the amount of uncertainty in the model (Gelman et al., 2004; Van de Schoot & Depaoli, 2014; Zyphur & Oswald, 2015).

The 'posterior distribution' is arrived at through a process which applies a computerised Markov Chain Monte Carlo (MCMC) simulation processes whereby each subsequent iteration and analysis of the model takes account of the preceding iterations, thus enhancing the credibility of the results (Arbuckle, 2014). Where this process is particularly useful for non-normally distributed data however, is in the ability to specify the 'prior distribution'. Where the researcher has clear and evidence based data about what the 'normal' and expected mean and standard deviation for the variable is, this can be entered into the model, thus overcoming the limitations of non-normal distributions. Additionally, for new data for which identification of a 'prior' distribution is not yet available, the programme offers the use of a 'diffuse prior distribution' which provides as little information as possible to the analysis, thus allowing the prior to be spread over as wide a distribution as possible and enabling the data to lead the identification of both 'prior' and subsequent posterior distribution means.

For non-normally distributed data, the inclusion of prior estimations in the model allows for the variable to be subsequently treated as if it were normally distributed, as the prior gives a frame

of reference against which to interpret the data analysis. One of the strengths of Bayesian Estimation is that it is suited to working with relatively small sample sizes, as it enables both testing of null hypotheses, and can handle experimental and newly conceptualised data (Zyphur & Oswald, 2015). It is particularly useful when the researcher is able to apply a large amount of precision to the specification of the prior distribution, with the analysis being stronger for much smaller sample sizes in this instance.

In this way, Bayesian Estimation (BE) is able to treat dichotomous variables as if they were continuous variables in the analysis, and following subjecting the data to thousands of model analysis iterations, produces a credibility interval for each pathway in the model. This credibility interval is interpreted in relation to the pathway mean (which represents the regression weight), and provides an upper and lower figure within which the true mean of the measure is likely to fall. The width and positioning of this credibility distribution can be determined by the researcher. Similar to confidence intervals, if zero falls within the lower and upper credibility distribution figures, it is then plausible that the true mean for the pathway of interest could be zero also. Thus the pathway is judged to be the equivalent of 'non-significant' (Van de Schoot & Depaoli, 2014).

4.6.2.2   Selection of model fit indicators MLE

For SEM using MLE, model fit is assessed through examination of a range of model fit indices. There are four categories of fit indices and at least one from each category was selected as appropriate.

1. Goodness of fit tests
   a. Chi Squared (CMIN/DF in AMOS). But this is affected by large sample size and therefore can give significant readings (indicating model rejection) when the model fit is good.

    b.   SRMR – this does not penalise for large sample sizes and presents the average distance between predicted and observed variables.

    c.   GFI and AGFI will not be used as these are no longer preferred measures of fit.

2.   Goodness of Fit tests comparing the model with a second model (or Null model)

    a.   NFI or NNFI (reported as TLI in AMOS) is acceptable

    b.   CFI less susceptible to sample size error but where covariances are close to zero, the measure becomes redundant.

3.   Parsimony adjusted measures

Parsimony concerns model complexity. Parsimony adjusted measures penalise for a lack of parsimony, so more complex models are more likely to fit the data. In any model there will be effects caused by the model, and irrelevant 'noise' or error. A model which is too simple may leave out some of the effects, whereas a model which is too complex may include too much of the noise. Parsimony adjusted measures capture the extent to which the model discriminates the actual effect from the irrelevant 'noise' or error.

    a.   RMSEA is the most popular, it doesn't require a null model or bootstrapping and is least affected by sample size.

4.   Goodness of Fit tests used for competing models

    a.   AIC is a statistic that can be compared to previous models. There is no absolute number but AIC becomes smaller in comparison to previous models as the model fit improves. This is only used when comparing models, and not when considering models independently.

In addition to the chi-square statistic (x^2) which is presented as CMIN/DF in AMOS™, the analysis assessed model fit using the standardized root-mean-square residual (SRMR) as this does not penalise for large sample sizes and presents the average distance between predicted and observed variables. I used comparative fit index (CFI) to compare the model with a null model, and root mean square error or approximation (RMSEA) to measure parsimonious fit. Where two similar models were being compared, I used the Chi-square difference test to identify the best

fitting model. The cut off values for these fit indices were as follows; SRMR <.08, CFI >.90, RMSEA <.06 (Hu & Bentler, 1999; Byrne, 2010; Kline, 2011).

4.6.2.3 Selection of model parameters and fit indicators Bayesian Estimation

Bayesian Estimation in AMOS™ requires the specification of parameters that are applied to the analysis. Critical parameters include specification of the 'prior', to either known means and standard deviations, or to wider diffuse distributions that allow the data to speak for itself. For this analysis, diffuse 'prior' distributions were applied to all pathways in the model. This was an appropriate approach as some of the measures in the model were newly developed and thus, identifying a prior distribution with confidence would not be possible from existing research. Additionally, promotion rates, means and standard deviations vary hugely according to sector, by age and particularly by gender (Blau & Devaro, 2007) and as such, specifying a set mean and standard deviation for this measure could have introduced error into the model. Thus, the expected prior distribution for the model utilized the AMOS™ provided uniform distribution which ranged from -3.4×10^{-38} to 3.4×10^{38}, as recommended by Arbuckle (2014).

Evaluation of Bayesian Estimation model fit when conducted in AMOS™ involves examination of three different types of outputs. First, because the analysis outputs are the result of numerous comparisons of the distribution of the data against the prior distribution, the analysis does not complete until there is convergence of the data. Convergence means that repeated analyses of the fit of the data to the model do not generate any new data patterns and thus, the model is said to have converged. A convergence statistic for the model is produced and an acceptable convergence threshold of 1.002 is applied, such that the model is said to have converged when the convergence statistic is lower than 1.002 (Gelman et al., 2004; Arbuckle, 2014; Byrne, 2010).

Next, the AMOS™ programme produces a series of plots that can be used to check the stability and validity of the model convergence. These plots are diagnostic and include polygon plots,

trace plots and histogram plots (Byrne, 2010; Van de Schoot & Depaoli, 2014). Visual inspection of these plots gives an indication of problematic convergence pathways and can be used to aid in the identification of potential pathway adjustment. This is particularly useful in model adjustment where identifying potential pathways changes is important, as follows. Because the analysis is looking for convergence, if convergence is proving difficult and taking many iterations (more than 100,000), the AMOS™ programme begins a second analysis of the 100,000 models already iterated, but selects only every other iteration to reanalyse. This process is known as 'thinning' (Arbuckle, 2014) and will normally eventually produce a converged model. However if a model needs to be thinned before convergence, this indicates a problematic pathway. Thus, once convergence is achieved, the stability and reliability of the convergence can be checked by visually analysing the series of convergence plots that are generated for each pathway.

Thirdly, the credibility distribution parameters were set at 95%, which required a 95% probability that the mean for the pathway would fall within the upper and lower bounds of this distribution. 95% was selected to bring the strength of the credibility in line with confidence intervals seen in other methods of statistical analysis and again followed best practice guidelines (Zyphur & Oswald, 2015).

Fourthly, on achievement of a model which contained no problematic credibility distributions, two additional checks were made to evaluate model fit. First, the closeness of the estimated mean for each pathway was compared with the MLE unstandardized estimate for that pathway. A close match for all pathways indicated a good model fit (Byrne, 2010). Second, the posterior predictive p value (*PPP)* was computed. This value indicates the "*proportion of times that the data that has been observed in the model are more probable than the observed data*" (Zyphur & Oswald, 2015, pp402). A *PPP* value of .50 indicates a good fitting model. A final indicator of model fit, the Deviance Indicator Criterion (DIC) was unable to be used as this measure cannot be produced where a model contains non-numerical data.

4.6.2.4 Procedure for model testing and model amendment

In determining model fit, best practice guidelines suggest evaluating the outputs of Bayesian Estimation in comparison with the outputs of maximum likelihood estimation (MLE) (Byrne, 2010; Arbuckle, 2014). A close match between MLE and Bayesian Estimation indicates a good model fit, particularly where the model fit indicators for MLE are good. Thus, each model and all subsequent iterations were analysed using both Bayesian Estimation and MLE.

For every model tested, the following process was applied. First, the model fit statistics from MLE were analysed. For poor fitting models, non-significant regression pathways were identified by examining the standardised regression weights and their significance levels. I then examined the Modification Indices (MI) to identify whether the analysis suggested any new pathways and the projected impact the new pathway would have on improving the model fit.

Before taking any action to adjust the model however, I then analysed the outputs from the Bayesian Estimation, including identifying credibility intervals that included zero, and examining the convergence plots for the problematic pathways. In determining the order of changes to make to the model, I applied the following principles. First, changes which involved removing control variable pathways were prioritised, to ensure that future analysis of latent and observed study variables was not contaminated by errors resulting from the inclusion of non-significant control variables. Next, non-significant pathways were removed one at a time. Only one parameter was changed at a time, and the model was re-run after every parameter change. Parameters for removal were selected where they appeared problematic in both types of analysis (i.e. had a credibility interval that included zero in BE and were non-significant in MLE). Once all pathways in the model were within acceptable boundaries, further model improvement pathways were identified through examining MI and parameter change statistics to determine the effect that changing a parameter would have on the model fit. In line with guidance on structural equation modelling in AMOS™ from Byrne (2010), two conditions had to be met before making any adjustments on the basis of MI and parameter change values. First, the

direction of any new pathway being proposed had to fit with the direction of the model. Second, any changes made had to be theoretically plausible. In selecting modifications to make from the list of proposed modifications, I selected those with the highest potential change first if they met the above two conditions. Finally, when all possible and plausible adjustment had been made to the model, model fit was analysed by comparing the regression weights from BE and MLE analyses.

4.6.2.5   Hypotheses testing and model adjustment

To test the model hypotheses, I first tested the proposed model in its entirety using time 1 data. In order to meaningfully interpret the result, I began with testing a model which examined the direct effects of the associated variables in the model on task crafting and the effect of task crafting on promotion at time 1. Following this, I tested and interpreted the fully hypothesised model, and made subsequent revisions to the model. Control variables that were significant in the correlation matrix were included in the first iterations of the model, and only removed when non-significant or when their credibility interval included zero. After each amendment, I reran the model and compared the results of the model fit for the new model with previous iterations, following the previously explained process.

In order to check whether the change in Chi-square was significant, I carried out Chi-square difference tests and considered the results of this test alongside the new model fit statistics to determine whether the new model represented a better fit to the data.

Finally, because the data at time 1 was cross sectional, I explored alternative models where they were theoretically plausible. This included placing promotion as a proximal antecedent of task crafting, from which outcomes included LMX, climate for crafting and autonomy. Again, I examined model fit after each amendment. Finally, I compared the best alternative models with the best original model to determine the best model fit and answer the hypotheses, using

comparison of model fit statistics, and chi-square fit analysis of nested rather than independent models.

4.6.3 Time 2 analysis using logistic regression

Logistic regression enables analysis of the effect of continuous independent variables on dichotomous dependent variables. As this study was concerned with the effect of task crafting, measured as a continuous independent variable, on promotion, measured as a dichotomous dependent variable, hierarchical regression was not appropriate as it is not able to handle the complexity of the two different types of data (Field, 2015). As promotion was measured using only two outcomes (promoted in the last six months, not promoted in the last six months), I used binary logistic regression rather than multinomial logistic regression. Logistic regression in effect enables the expression of a categorical dependent variable in a linear way, therefore enabling it to be analysed in relation to the linear independent variables (Field, 2015). Thus, the outcomes of logistic regression are a probability score, which give the probability of the outcome (in this instance promotion) arising from the independent variable (in this instance task crafting).

In carrying out the logistic regression, I used time 1 task crafting as the independent variable, and time 2 promotion as the dependent variable. In this way, the effect of task crafting on promotion over time could be analysed. Maximum likelihood estimation was used to set the parameters for the predictor variable (task crafting). Following Field (2015), I evaluated the fit of the model using five key indicators. First, I used log-likelihood to evaluate the amount of unexplained variance in the model (Tabachnick & Fidell, 2012). I then analysed the deviance statistic ($-2LL$), as this incorporates a chi-square distribution and therefore enables the significance of any difference to be calculated. Next I analysed the *R*-statistic in combination with the Wald statistic, to evaluate whether an increase in task crafting was likely to lead to an increase in promotion, thus evaluating the stability of the relationship between the two variables.

Finally, in interpreting the outputs from the logistic regression, I examined the odds ratio. This ratio indicates the odds of a change in promotion resulting from a change in task crafting, with a value of >1 indicating a positive effect.

4.7 ETHICS

4.7.1 Data security and identity protection

As the survey instrument asked respondents to provide their email address if they wished to complete the follow up question, there was potential for respondents to be identifiable within the data. To avoid this, I instructed the Bristol On-line Survey instrument to allocate each respondent a unique respondent number when transforming respondent's data into code for entry into SPSS. A record was kept of unique respondent numbers and email addresses in a separate, password protected file, and this file was used to contact respondents at time 2. The respondents' email addresses were not stored in the same file as their response data. Additionally, because respondents were invited and encouraged to complete the questionnaire through either HR or structural management pathways at their place of work, I provided a commitment to respondents to not analyse or report results from groups with less than ten respondents, to avoid the potential for individual or group identification.

To ensure the data was stored securely, all data collected was stored on University of Leeds secure servers, with password protection throughout the duration of the study. Duplicate copies of the data were made as back up in case of data corruption, and these were stored on a remote storage device, again with password protection.

4.7.2 Ethical approval and informed consent

Prior to distributing the survey, institutional ethics approval was sought and gained. Informed consent was sought from all participants in two ways. Firstly, an introductory email and printed message was created which outlined briefly the nature of the study and contained an invitation

to participate. This was followed with a statement on both the paper copy of the survey and as part of the email introduction to the on-line survey which outlined the nature of the study and the protection for both institutional and individual anonymity. All participants then had to either sign a paper copy of the survey or select a 'consent' box on the on-line version of the survey to indicate they were aware of the nature, purpose and use of the study data and consented to their data being used as described (see Appendix C for all of the relevant approvals, communications and consent statements).

CHAPTER 5: ANALYSIS AND RESULTS

In this chapter, I present the results of the data analysis. The chapter is structured into three parts, each addressing one aspect of the analysis. Section 5.1 presents the results of analysis of the Time 1 data including sample demographics and descriptive statistics for Time 1 and Time 2 respondents, and correlation analysis for the study variables. The section then presents model fit and hypothesis testing, concentrating on the cross-sectional rather than prospective relationships. My analysis used systematic procedures for making adjustments to the model and this section presents both the procedures and the findings thereof, concluding with the presentation of a revised model.

In Section 5.2 I explore the stability and validity of the various correlates of task crafting that are presented in the theoretical model. I examine the potential for alternative models, to address the limitations of cross-sectional data by analysing alternative regression pathways for variables in the model at Time 1. I conclude the section with a comparison between the new revised model presented in Section 5.1, and the strongest alternative model.

In the final Section 5.3, I present the results from the repeat analysis of the Time 1 and Time 2 data, exploring the prospective relationship between task crafting and promotion. The section begins by presenting the descriptive analysis of the Time 2 data and exploring potential correlations between Time 2 promotion and demographic characteristics, to identify whether any of the demographic characteristics need to be controlled for in the prospective regression. Then, rather than structural equation modelling, the results from binary logistic regression are presented. Again, the stability of the findings is evaluated by comparing alternative models.

I conclude this chapter with a summary of the key findings, which lead onto and inform the subsequent discussion chapter.

5.1.1 Descriptive statistics – Time 1 respondent demographics

Two hundred and forty one respondents completed the survey at time 1. As a result of the clarity of instructions in the questionnaire, and the removal of non-completion options from the on-line survey, there were no missing data for any of the questions asked.

Of the 241 Time 1 respondents, 29.9% (n=72) were male and 70.1% (n=169) were female. The proportion of males to females in the sample is not in line with employment data which shows that the 46% of employees in universities in England are male and 54% are female (HESA.ac.uk data 2013-14). It is not clear from the existing evidence base whether this pattern of more female respondents is normal within educational institutions. Some evidence from the education sector in general indicates that women are more likely than men to complete surveys, irrespective of whether they are on-line (Yetter & Capaccioli, 2010). The gender distribution was not evenly spread across the respondents' job categories, with less than 1/3 of respondents being male (see Table 6).

Respondents' level of qualification ranged from GCSE/O Level (4.1%, n=10) through to postgraduate degree (62.7%, n=151), with 12% of respondents qualifications being below degree level and the remaining 88% being at or above degree level (see Table 7). Consideration of the distribution of qualifications in relation to the distribution of job categories shows that these figures are broadly in line with employment statistics for university staff nationwide (HESA.ac.uk, 2016) where 73% of staff employed in the higher education sector in England are either academic, research, or managerial/professional – all of which require high levels of qualifications. However, the qualifications data in the sample indicates that the sample is more representative of staff with higher levels of qualifications and may not be taken to represent the views of staff with lower levels of qualifications with as much confidence.

Gender Table 6: Cross tabulation of T1 respondents' job category and gender	Job Category			Total
	Academic & Research	Professional administrative	Clerical, Technical and Ancillary	
Male	32	25	15	72
Female	66	83	20	169
Total	98	108	35	241

Table 7: Time 1 respondents' qualification levels

Highest Qualification	Frequency	Percent	Cumulative Percent
GCSE/O Levels	10	4.1	4.1
A Levels (or equivalent)	5	2.1	6.2
HNC/HND or equivalent	14	5.8	12.0
Undergraduate degree	61	25.3	37.3
Postgraduate degree	151	62.7	100.0
Total	241	100.0	

Time 1 participants' age ranged from 20 years through to 64 years, with a normal distribution across the age ranges (see Figure 3).
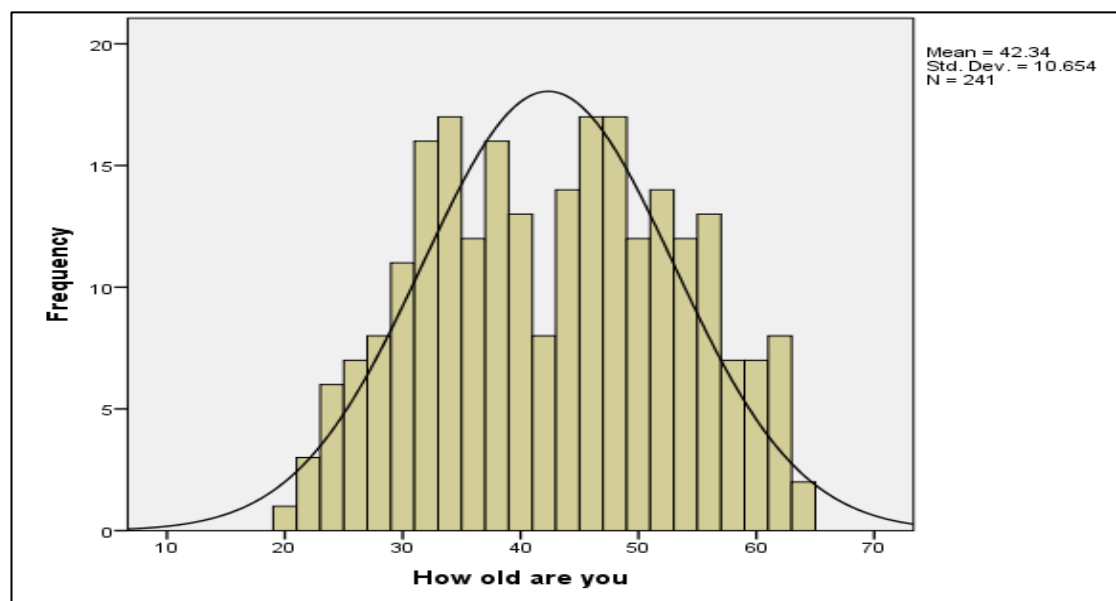
Figure 3: Histogram showing age distribution of Time 1 respondents

5.1.2 Time 1 Descriptive statistics – model variables

Visual analysis of the distribution histograms for the study variables indicated that the data broadly followed a normal distribution curve for all of the associated variables (see Appendix F). However, each of the measures did contain an element of skew and kurtosis (Table 8). Kolmogorov-Smirnov and Shapiro-Wilk statistics were significant, indicating that the data were not normally distributed (Table 6). Analysis of the direction of skew and kurtosis allied with expectations for the sample group, with more positive scores for autonomy LMX, climate for crafting and uncertainty, and slightly negative scores for task crafting (see Table 9). As the sample group contained a higher than normal proportion of respondents with more senior jobs, and with higher levels of qualifications, it would be expected to see higher than normal reported levels of autonomy and LMX. The levels of skew and kurtosis were within acceptable ranges as they did not exceed ±2, and all statistics for skew and kurtosis were clustered around zero (Field, 2015). In addition, the sample size is large enough to adopt central limit theorem and therefore data were considered to be normally distributed (Lumley et al., 2002; Field, 2015).

Table 8: Descriptive statistics for model variables at T1

	AUTONOMY	TASK CRAFTING	LMX	CLIMATE	UNCERTAINTY
Mean	4.47	2.69	3.68	3.52	3.34
Std. Error of Mean	.07	.06	.07	.05	.06
Median	4.67	2.67	4.00	3.67	3.33
Mode	5.00	2.00	5.00	4.00	3.00
Std. Deviation	1.02	.97	1.09	.79	.91
Variance	1.04	.94	1.19	.62	.82
Skewness	-.83	.34	-.72	-.56	-.07
Std. Error of Skewness	.16	.16	.16	.16	.16
Kurtosis	.87	-.44	-.27	.85	-.18
Std. Error of Kurtosis	.31	.31	.31	.31	.31

Table 9: Normality of distribution tests for study variables

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
UNCERTAINTY	.110	241	.000	.969	241	.000
TASK CRAFTING	.111	241	.000	.967	241	.000
AUTONOMY	.117	241	.000	.943	241	.000
LMX	.152	241	.000	.919	241	.000
CLIMATE	.181	241	.000	.924	241	.000

5.1.3   Time 2 descriptive statistics – respondent demographics

A total of 101 respondents replied to the Time 2 survey, which repeated the demographic questions of age, gender, tenure, job category, and education, and also asked whether respondents had been promoted in the last six months. Of these, 26.5% (n = 27) were male and 73.5% (n = 75) were female, repeating the gender imbalance seen within the Time 1 respondent group. Respondents were predominantly educated to degree level (24.5%, n = 25) or postgraduate degree level (69%, n = 71), with the remainder being educated at less than degree level (5.9%, n = 6), and this again is reflective of university employees' educational profiles. The age of the Time 2 respondents ranged from 24 to 64 years, (mean age 44.9 years, SD 10.73), and the tenure of respondents ranged from 6 months to 35 years (mean 8.67 years, SD 7.79 years). Academic and research staff accounted for 38.2% of Time 2 respondents (n = 39), with professional support or managerial staff accounting for 49% (n = 50) of respondents. The remaining respondents were clerical, technical, and cleaning staff (12.7%, n = 13).

Visual analysis of the distribution histogram for age indicated that the data broadly followed a normal distribution curve for this variable (see Appendix F). Levels of skew and kurtosis for age was within acceptable ranges, with no values exceeding ±2, and all statistics were clustered around zero (Field, 2015).

5.1.4 Analysis of differences between respondents

Before beginning correlation analysis or model testing, the respondent demographic data were explored in more detail. This included examining relationships between respondent gender, job category grouping, tenure and age, in relation to the model variables. The results of these analyses were then used to inform the inclusion of demographic characteristics within the model testing.

5.1.4.1 Gender differences in responses

To examine whether responses to the model variables differed according to the respondents' gender, *t*-test analysis was carried out for the continuous study variables, and chi-square analysis for the categorical study variables (job categories only). This analysis showed that the only significant relationship was between staff in the professional/administrative staff grouping and gender (see Table 10).

Table 10: Analysis of differences between males and females across study variables

Measure	*Males* *Mean (SD)*	*Females* *Mean (SD)*	*t*	*X^2*
Age	42.9 (10.1)	42.1 (10.9)	.53	
Tenure	8.12 (78.57)	7.60 (6.73)	.46	
Academic/Research				.61
Professional/Admin				4.23*
Clerical/Tech/Ancillary				3.29
Autonomy	4.35 (.84)	4.41 (.89)	.59	
Uncertainty	3.38 (.83)	3.32 (.94)	.47	
LMX	3.53 (1.07)	3.57 (1.03)	−.24	
Climate	3.55 (.80)	3.51 (.79)	.35	
Task Crafting	2.75 (.99)	2.66 (.96)	.72	

* *p ≤ .05*

5.1.4.2 *Analysis of differences in study variables by job categories*

To determine whether there were significant differences in the responses of staff within the three job groupings of academic/research, professional/administrative, and clerical/technical/ancillary, a one way analysis of variance (ANOVA) test was carried out in two stages. First, the ANOVA examined whether there were significant differences overall across the staff groupings. The results showed that there significant differences related to staff groupings for age, autonomy, uncertainty, LMX, climate and task crafting (see Table 11).

Table 11: Analysis of variance across study variables between the three staff groupings

Variable	*Mean*	*SD*	*f*	*Sig*
Age	42.34	10.65	8.95	.000
Tenure	7.76	7.31	1.68	.190
Autonomy	4.47	1.02	3.80	.024
Uncertainty	3.34	.91	3.80	.024
LMX	3.68	1.09	4.95	.008
Climate	3.52	.79	6.26	.002
Task Crafting	2.67	.97	3.24	.041

f ratio is statistically significant at p ≤.05

Analysis of Homogeneity of Variance showed that the Levene Statistic was not significant for any of the study variables, and thus, the assumption of equal variances across the group was not violated (see Table 12).

Table 12: Levene Statistic for homogeneity of variance

	Levene Statistic	Sig.
AGE	2.162	.117
TENURE	2.583	.078
AUTM	1.576	.209
UNCERM	.128	.880
LMXM	2.940	.055
TASKCRS	2.073	.128
CLIMS	1.804	.167

Having established that there were significant differences across the three staff groupings for the measures in the study, a Tukey Post-Hoc test was carried out to identify which staff groupings differed across the study variables (see Table 13). Considering age distribution, the results showed that academic/research staff had significant differences in age distributions from the other staff groupings, having a higher mean age than professional/managerial staff (MD = .5.01, $p \leq .01$) and clerical/technical/ancillary staff (MD = 7.04, $p \leq .01$). For LMX, mean scores from academic staff again differed significantly from professional/administrative, with scores from academic/research staff being lower than professional/administrative staff mean scores (MD = −.38, $p = .02$). Academic/research staff differed significantly from clerical/technical/ancillary staff for task crafting, with higher mean scores (MD = .50, $p = .02$), and also had a higher and significantly different mean score than clerical/technical/ancillary staff for climate for crafting (MD = .38, $p = .04$). Academic/research staff therefore, rated the quality of their relationships with their line managers as lower than staff within the professional/administrative staff grouping. Academic/research staff also have stronger perceptions of a climate for crafting, and reported carrying out task crafting more than for clerical/technical and ancillary staff. It is surprising, given these findings, that the differences in perceived autonomy between the staff groupings is not also significant, as the academic/research staff grouping reporting higher levels of task crafting and higher perceptions of a climate for crafting might be expected to indicate higher levels of freedom (autonomy) within their job roles.

In addition to the above, professional/administrative staff had a higher and significantly different mean score for LMX and task crafting than clerical/technical/ancillary staff (MD = .50, $p = .03$; MD = .65, $p \leq .01$ respectively). No other significant differences between the staff groupings were identified.

Table 13: Tukey post hoc analysis of variance between staff category groupings

Study Variable	(I) Job Category	(J) Job Category	(MD) Mean Difference (I-J)	Sig.
AGE	Acad+Res	Prof and mgmt	5.097[*]	.001
		ClerTechAncill	7.043[*]	.002
	Prof and mgmt	Acad+Res	-5.097[*]	.001
		ClerTechAncill	1.946	.597
	ClerTechAncill	Acad+Res	-7.043[*]	.002
		Prof and mgmt	-1.946	.597
AUTM	Acad+Res	Prof and mgmt	- .271	.070
		ClerTechAncill	.122	.766
	Prof and mgmt	Acad+Res	.271	.070
		ClerTechAncill	.393	.062
	ClerTechAncill	Acad+Res	-.122	.766
		Prof and mgmt	-.393	.062
UNCERM	Acad+Res	Prof and mgmt	-.268	.083
		ClerTechAncill	.143	.697
	Prof and mgmt	Acad+Res	.268	.083
		ClerTechAncill	.411	.050
	ClerTechAncill	Acad+Res	-.142	.697
		Prof and mgmt	-.411	.050
LMXM	Acad+Res	Prof and mgmt	-.377[*]	.024
		ClerTechAncill	.124	.813
	Prof and mgmt	Acad+Res	.377[*]	.024
		ClerTechAncill	.500[*]	.034
	ClerTechAncill	Acad+Res	-.124	.813
		Prof and mgmt	-.500[*]	.034
TASKCRS	Acad+Res	Prof and mgmt	-.152	.484
		ClerTechAncill	.500[*]	.021
	Prof and mgmt	Acad+Res	.152	.484
		ClerTechAncill	.652[*]	.001
	ClerTechAncill	Acad+Res	-.500[*]	.021
		Prof and mgmt	-.652[*]	.001
CLIMS	Acad+Res	Prof and mgmt	.033	.951
		ClerTechAncill	.379[*]	.039
	Prof and mgmt	Acad+Res	-.033	.951
		ClerTechAncill	.346	.062
	ClerTechAncill	Acad+Res	-.379[*]	.039
		Prof and mgmt	-.346	.062

*p < .05

5.1.4.3 *Analysis of differences in promotion rates across job categories*

To examine whether the differences in promotion rates across job categories was significant, *chi-square* analysis was carried out. Two approaches were used in this analysis. First, the three

job categories were analysed as one variable, with the three job categories of academic/research (coded as 1), professional/administrative support (coded as 2), and clerical/technical/ancillary (coded as 3) each given a different code within the same variable. This approach enabled analysis of whether the differences between the promotion rates for the three job categories were significant. The results of this analysis showed that at both Time 1 and Time 2, the difference in promotion rates across the job categories was not significant (Time 1, $x^2 = 2.31$, *df* = 2, *n = 241, p = .316)*, (Time 2, $x^2 = 0.42$, *df = 2, n = 101, p = .811*) (see Table 14)

Table 14: Chi square analysis of prevalence of promotion by job category

	%	N	X^2	*p*
Job Category & T1 Promotion	8.7	21/241	2.31	.316
Academic/Research	11.2	11/98		
Professional/Administrative	9.4	9/108		
Clerical/Technical/Ancillary	2.9	1/35		
Job Category and T2 Promotion	9.9	10/101	0.42	.811
Academic/Research	7.7	3/39		
Professional/Administrative	11.8	6/51		
Clerical/Technical/Ancillary	9.1	1/11		

However, this analysis only indicates whether there is a significant difference across the three groups in promotion rates, and therefore a more nuanced analysis of promotion rates across the three groups was carried out using dummy coded variables for each of the three job categories. In this analysis, the job category of interest was coded as 1, with all other job categories being coded as zero. Again, this analysis confirmed that there was no significant difference in the promotion rates across the three job category groupings (see Table 15)

Table 15: Chi square analysis of prevalence of promotion by dummy coded job category

	%	N	$X^2(df)$	p
Academic/Research & T1 Promotion	11.2	11/98	1.31(1)	.253
Prof/Admin & T1 Promotion	9.4	9/108	.04(1)	.850
Clerical/Tech/Ancillary & T1 Promotion	2.9	1/35	1.77(1)	.327
Academic/Research & T2 Promotion	7.7	3/39	.34(1)	.556
Prof/Admin & T2 Promotion	11.8	6/51	.40(1)	.741
Clerical/Tech/Ancillary & T2 Promotion	9.1	1/11	.01(1)	.700

This analysis indicates that although promotion levels between the three job categories varied, this variation was unlikely to have been related to the respondent's job category. Examination of the percentages of promotion across the job categories shows that, with the exception of clerical/technical/ancillary staff promotion at Time 1, there is a broad similarity across the three job groupings in the percentage of promotions at Time 2.

5.1.4.4   Differences between Time 2 responders and non-responders

In order to determine whether there was a significant difference between those people who responded to both surveys, and those who responded to the Time 1 survey only, a comparative *t*-test analysis was carried out. In this analysis, respondents were grouped into those who responded to both surveys and those who responded at Time 1 only. The analysis showed that the only significant difference between the two groups was in the age of the respondents, with a slightly older mean age for the group who completed both surveys (see Table 16). The non-significant differences between the two groups across the study variables mean that the Time 2 respondents can be viewed as representative of the Time 1 respondents across all of the study variables except age.

Table 16: Comparison of Time 2 responders and non-responders

Measure	Time 2 Responders Mean (SD)	Time 2 Non-Responders Mean (SD)	t	X^2
Age	44.2 (10.8)	40.9 (10.4)	−2.33*	
Gender				1.85
Tenure	8.17 (7.71)	7.45 (7.03)	−7.48	
Academic/Research				.30
Professional/Admin				2.27
Clerical/Tech/Ancillary				1.85
Autonomy	4.45 (.98)	4.49 (1.05)	.28	
Uncertainty	3.35 (.95)	3.33 (.88)	−.18	
LMX	3.65 (1.14)	3.69 (1.06)	.30	
Climate	3.56 (.71)	3.49 (.84)	−.65	
Task Crafting	2.68 (.96)	2.69 (.97)	.13	

* $p \le .05$

5.2 ANALYSIS OF TIME 1 AND TIME 2 DATA

5.2.1 Correlation analysis

Correlation analysis for the Time 1 data was carried out using the mean scores for each of the independent variables in the model. Effect sizes were interpreted in relation to Cohen's (1988) guidelines, with a small equating to a correlation effect of up to $r = .1$, a moderate effect being $r = .3$, and a large effect being $r = .5$. The correlation analysis for the variables in the model indicated initial support for the proposed model at Time 1 (Table 17). Task crafting was significantly and positively correlated with each of the proposed antecedents, including small positive effect sizes for autonomy ($r= .24, p \le .05$), uncertainty ($r= .22, p \le .05$), climate for crafting ($r= .24, p \le .05$), and LMX ($r= .13, p = .04$), Each of these positive significant associations indicates that the variables in the model warrant further investigation. Furthermore, promotion was also positively correlated with task crafting at Time 1 ($r= .18, p \le .01$), and again the effect size was small (Cohen, 1988). Analysis of the correlations between the study

variables showed a large strength and positive effect between LMX and autonomy ($r= .50$, $p \leq .01$), and a moderate effect between LMX and climate ($r= .33$, $p \leq .01$), and climate and autonomy ($r= .33$, $p \leq .01$).

Time 2 correlations are shown as variable number 9 in Table 17. This line shows the correlations between the data for the 101 Time 2 respondents and the study variables collected at Time 1. The only significant correlation at Time 2 was between task crafting at Time 1 and promotion at Time 2 ($r= .20$, $p \leq .05$). The effect size for this relationship is small (Cohen, 1988), which although again indicating support for the prospective longitudinal effect proposed in the hypothesised model, the effect size may be influenced by the reduced sample size for the Time 2 data.

The results from the initial correlation analysis were broadly supportive of the relationships hypothesised in the proposed model, and the correlations indicated that age needed to be controlled for in the modelling. The significant variations in responses by staff in different job categories also supported the inclusion of job category as a control variable in the model testing.

Table 17: Correlation matrix of study variables and demographics at T1 and T2 using shortened scales for LMX and Autonomy

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age (Years)	42.34	10.65	1								
2. Tenure (Years)	7.76	7.32	$.49^{**}$	1							
3. Autonomy	4.47	1.02	-.08	-.09	1						
4. LMX	3.68	1.09	-.10	-.10	$.50^{**}$	1					
5. Task Crafting	2.69	.97	-.06	-.09	$.24^{**}$	$.13^{*}$	1				
6. Climate	3.52	.79	-.10	.01	$.33^{**}$	$.33^{**}$	$.24^{**}$	1			
7. Uncertainty	3.34	.91	.01	.05	.11	.01	$.22^{**}$	.04	1		
8. T1 Promotion†	.09	.28	$-.13^{*}$	-.03	$.15^{*}$	.10	$.18^{**}$	.01	.04	1	
9. T2 Promotion†‡	.10	.30	-.14	-.19	.05	-.05	$.20^{*}$	-.17	-.01	.13	1

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

† Promotion was recorded as 1= promoted in the last 6 months, 0= not promoted in the last 6 months.

‡ Correlations for T2 promotion with T1 variables shown for 101 T2 respondents only.

5.2.1.1 Comparison of mean scores for LMX and autonomy short and long scales

Although shortened measures were used for the structural equation modelling for both LMX and autonomy, data were collected using the full autonomy scale (Breaugh, 1985), and the full LMX-7 scale (Graen & Uhl-Bien, 1995). Therefore, a second correlation analyses was carried out using the full scales (Table 19). This approach enabled the results from the correlations to be compared to existing research findings. However, an additional *t*-test analysis was carried out to compare the mean scores from the shortened scales with the full scales, to identify whether there were significant differences between the two means. Table 18 presents the results of the *t*-test analysis and shows that the mean scores for both of the shortened scales was slightly higher than for the full scale, and that this difference was significant.

Table 18: T-Test analysis of difference in mean scores for short and full autonomy and LMX measures

Measure	Mean for full scale (SD)**	Mean for shortened scale (SD)***	t
LMX	3.56 (1.04)	3.68 (1.09)	−6.44*
Autonomy	4.40 (.88)	4.54 (.92)	−7.36*

* = p ≤ .01, **LMX full scale = 7 items, Autonomy full scale = 9 items.
***Shortened scales = 3 items.

Comparison of the two correlation matrices shows that the significant relationships found in the correlations using the shortened scales remain when using the full scales for autonomy and LMX. There are some small changes in the strength of relationships however. When using the full scale for LMX, the relationship between LMX and task crafting becomes very marginally stronger than when using the shorter scale *(r= .16, p= .01*; compared with *r= .13, p= .02)* but the effect size remains small but significant. Additionally, when examining relationships between study variables and autonomy using the full scale, the correlation matrix shows that the relationship between climate and

autonomy has a moderate effect size and remains positive and significant, but the effect size is marginally weaker than when using the shortened scale ($r =.27$, $p \leq .01$ for shortened scale; compared with $r = .33$, $p \leq .01$ for the full scale). One new significant change is that the relationship between LMX and promotion is positive and significant when using the full scale for LMX ($r = .14$, $p = .03$), but non-significant when using the shortened scale. This finding in particular indicates that analysis of direct relationships between the model variables and promotion should form a part of the structural equation model testing process. Furthermore, all of the correlation analysis findings provide initial support for the model hypotheses.

5.2.1.2   Sample size considerations in relation to correlation analysis

The size of the significant relationships between the study variables needs to be considered in relation to the sample size for both the Time 1 and Time 2 data. It is clear that the larger the sample size, the easier it is to achieve statistical significance (Field, 2015). Strategies to ensure that significant results accurately reflect relationships within the data include increasing the threshold for significance where the dataset is large. This does however, introduce the drawback of potentially ruling out practically useful significant relationships, particularly if significant correlations are used to guide further analysis (Field, 2015). For this study, the sample size, whilst being large enough to accept central limit theorem in relation to normality of distribution, is not so large that it could result in increased presentation of significant correlations. Thus the threshold for significance was held at 0.05 for 95% significance and 0.01 for 99% significance.

Table 19: Correlation matrix of study variables and demographics using full scales for LMX and Autonomy

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age (Years)	42.34	10.65	1								
2. Tenure (Years)	7.76	7.32	.49**	1							
3. Autonomy	4.47	1.02	-.15*	-.10	1						
4. LMX	3.68	1.09	-.12	-.11	.50**	1					
5. Task Crafting	2.69	.97	-.06	-.09	.24**	.16*	1				
6. Climate	3.52	.79	-.10	.01	.27**	.33**	.24**	1			
7. Uncertainty	3.34	.91	.01	.05	.13*	.01	.22**	.04	1		
8. T1 Promotion†	.09	.28	-.13*	-.03	.15*	.14*	.18**	.01	.04	1	
9. T2 Promotion†‡	.10	.30	-.14	-.19	.01	-.03	.20*	-.17	-.01	.13	1

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

† Promotion was recorded as 1= promoted in the last 6 months, 0= not promoted in the last 6 months.

‡ Correlations for T2 promotion with T1 variables shown for 101 T2 respondents only.

5.2.2 T1 Model fit and hypothesis testing

The following section presents the evolving process of data analysis in relation to the hypothesised model. The logic and reasoning supporting subsequent iterations of the model is explained in relation to how the changes build on, or respond to the results from the previous iterations of the model. For each section of results, the outputs from Bayesian Estimation (BE) are presented first. Results from BE include the number of model iterations to achieve convergence, including the burn-in figure presented in brackets after the convergence iterations number; the convergence statistic (CS); the mean score for pathways with credibility intervals that do not contain zero and are therefore judged as significant (which indicate unstandardized regression weights); the 95% lower and upper bound credibility interval for credible pathways (95%CI); the pathways for which credibility scores do contain zero (thus judged not-significant); and where available, the overall ppp statistic indicating model fit. For MLE results presented include model fit statistics; regression weights and significance for relevant significant and non-significant pathways; and potential parameter change figures for proposed modifications. The outputs from the BE are interpreted in relation to the outputs from the Maximum Likelihood Estimation process.

5.2.2.1 Direct effects model

Understanding direct effects between model variables gives a frame of reference from which to interpret subsequent results. As expected, a model containing direct effect pathways from the proposed correlates to task crafting (Appendix G, Figure 21) produced a poor model fit. BE converged after 58,500(500) iterations (CS = 1.0019) but the results showed credibility intervals containing zero for LMX to task crafting, climate to task crafting, and autonomy to task crafting pathways. The mean for task crafting to promotion was 0.44 (95% CI = 0.11, 0.82) and uncertainty to task crafting was 0.16 (95% CI = 0.03, 0.30). Fit indicators from MLE were also poor (x^2 [128] = 321.41, CMIN/DF = 2.51, $p < .001$, CFI = .91, RMSEA = .08, SRMR = .14, AIC = 443.41), and analysis of standardised regression weights from MLE showed non-

significant regressions between LMX and task crafting ($\beta = -.03$, $p = .69$), confirming the BE result for this pathway. However, the MLE analysis produced significant pathways between climate and task crafting ($\beta = .16$, $p = .02$), uncertainty and task crafting ($\beta = .18$ $p = .01$), autonomy and task crafting ($\beta = .19$, $p = .01$), and task crafting and promotion ($\beta = .18$, $p = .01$), and these were not seen in the BE results. Taking the BE method as the closer indicator of fit to the data, although this was not the hypothesised model, the consistently non-significant relationship between LMX and task crafting in both methods of analysis indicate that the hypothesised model may not be correct and that there may be indirect rather than direct relationships between LMX and task crafting. The conflicting results for the other variables therefore warranted further investigation.

An additional model of all of the study variables including task crafting on the dependent variable of promotion also produced a poor model fit, with the BE analysis failing to converge after 115,000 (500) iterations (including 15,000 thinning iterations). For MLE, model fit was poor (x^2 [128] = 339.13, CMIN/DF = 2.65, $p = < .001$, CFI = .90, RMSEA = .08, SRMR = .16, AIC = 461.14). Analysis of standardised regression weights showed that the only variable to be significantly associated with promotion was task crafting ($\beta = .17$, $p = .01$). All other regression weights were not significant (LMX and promotion ($\beta = .03$, $p = .64$), autonomy and promotion ($\beta = .13$, $p = .06$), climate and promotion ($\beta = -.09$, $p = .19$), and uncertainty and promotion ($\beta = -.02$, $p = .80$)). This analysis confirms that the hypothesised model, positioning task crafting as the proximal correlate of promotion, was appropriate for continued analysis (Appendix G, Figure 22).

5.2.2.2 *Fully hypothesised model*

The fully hypothesised model included a moderation analysis of the effect of uncertainty on the relationship between autonomy and task crafting. In order to model moderation effects, standardised variables for autonomy, uncertainty and task crafting were used rather than

observed and latent variables, following guidance on structural equation modelling using AMOS™ (Byrne, 2010). An interaction variable for autonomy interacting with uncertainty was created and this was modelled (Figure 4, Model 1).
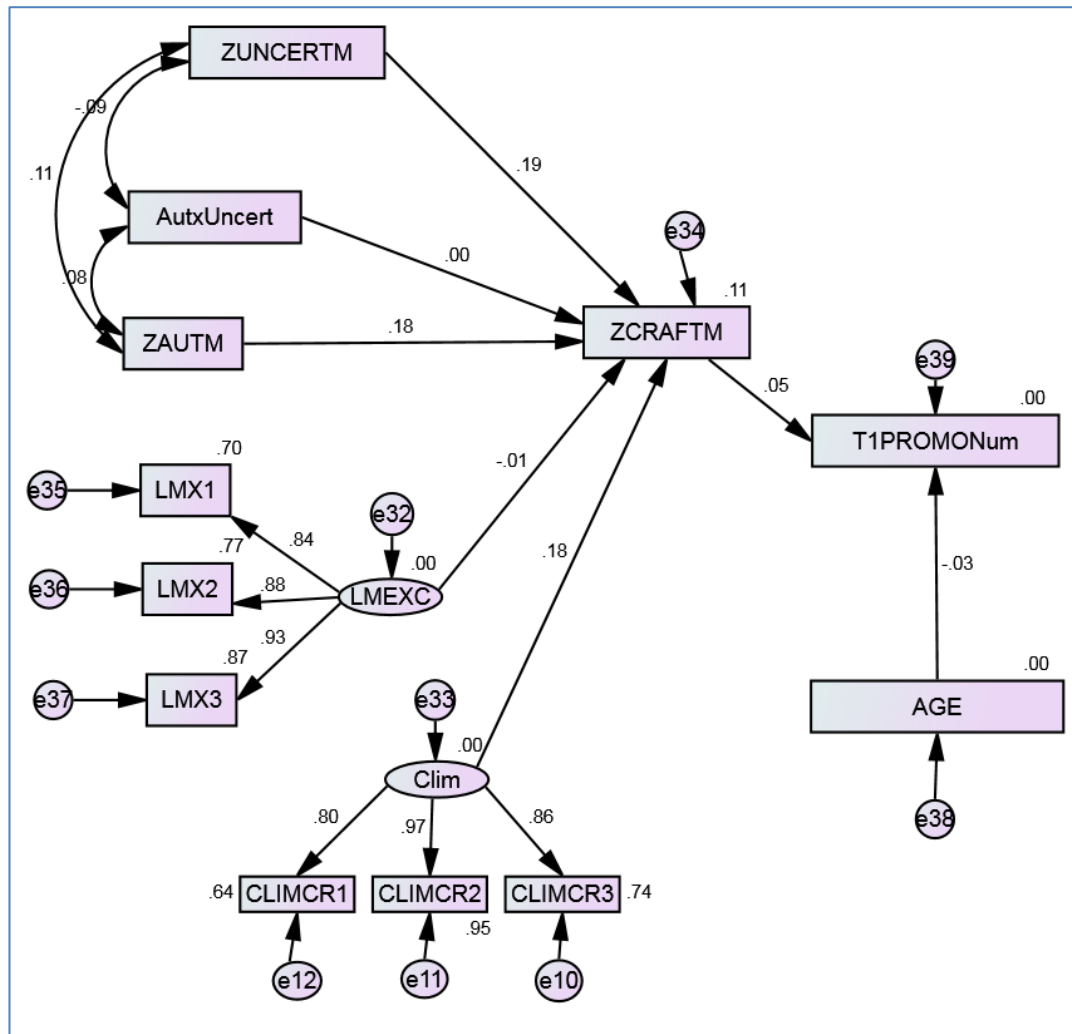
Figure 4: Model 1 Fully hypothesised model with moderation

BE outputs showed a poor model fit, with a *ppp* = 0.00. The model converged after 17,000(500) iterations (CS = 1.0018). The only pathways with credibility intervals containing zero were LMX to task crafting (mean -0.01, 95% CI −0.14, 0.13), and the interaction term for autonomy x uncertainty to task crafting (mean 0.001, 95 CI −0.10, 0.10). Analysis of MLE model fit statistics showed that fully hypothesised model did not represent a good fit to the data (x^2 [50] = 170.37, CMIN/DF = 3.41, $p \leq .001$, CFI = .89, RMSEA = .10, AIC = 250.37), with RMSEA

falling outside acceptable parameters. The results indicated that uncertainty was not moderating the effect of autonomy on task crafting. Furthermore, once again the relationship between LMX and task crafting was non-significant (see Table 20), and the relationship between promotion and age was not significant in this model. This analysis indicated the rejection of Hypothesis 1b, further exploration of alternative relationships between task crafting and LMX, and the removal of age as a control variable.

Table 20: Regression weights for fully hypothesised model

			P	Estimates
ZTASKCRS	<---	Aut_x_Uncert	.98	.00
ZTASKCRS	<---	ZUNCER	.00	.19
ZTASKCRS	<---	ZAUTs	.00	.18
ZTASKCRS	<---	LMEXC	.84	−.01
ZTASKCRS	<---	Clim	.00	.18
PROMO	<---	AGE	.06	−.03
PROMO	<---	ZTASKCRS	.01	.05

With the rejection of a moderation effect, subsequent analysis reinstated observed and latent variables into the model, as a replacement for standardised variables.

5.2.3 Model improvement

In exploring alternatives to the hypothesised model, the principle of only considering alternative pathways where they were theoretically plausible was adopted. As was indicated in the literature review, it is plausible that the effect of LMX on task crafting operates because quality LMX produces higher levels of autonomy, which subsequently influences task crafting. To explore this, a model including autonomy as a mediator between LMX and task crafting was tested. This test was carried out in two stages, first with the direct relationship between LMX and task crafting remaining in the model, which in effect was analysing partial mediation (Figure 5 Model 2a). Second, a full mediation model with the direct relationship between LMX and task crafting removed (Figure 6 Model 2b). At this point, the only consistently significant controls remaining in the model were job category controls, with professional/administrative controlling

on both autonomy and LMX, and clerical/technical/ancillary controlling on task crafting, autonomy and climate.
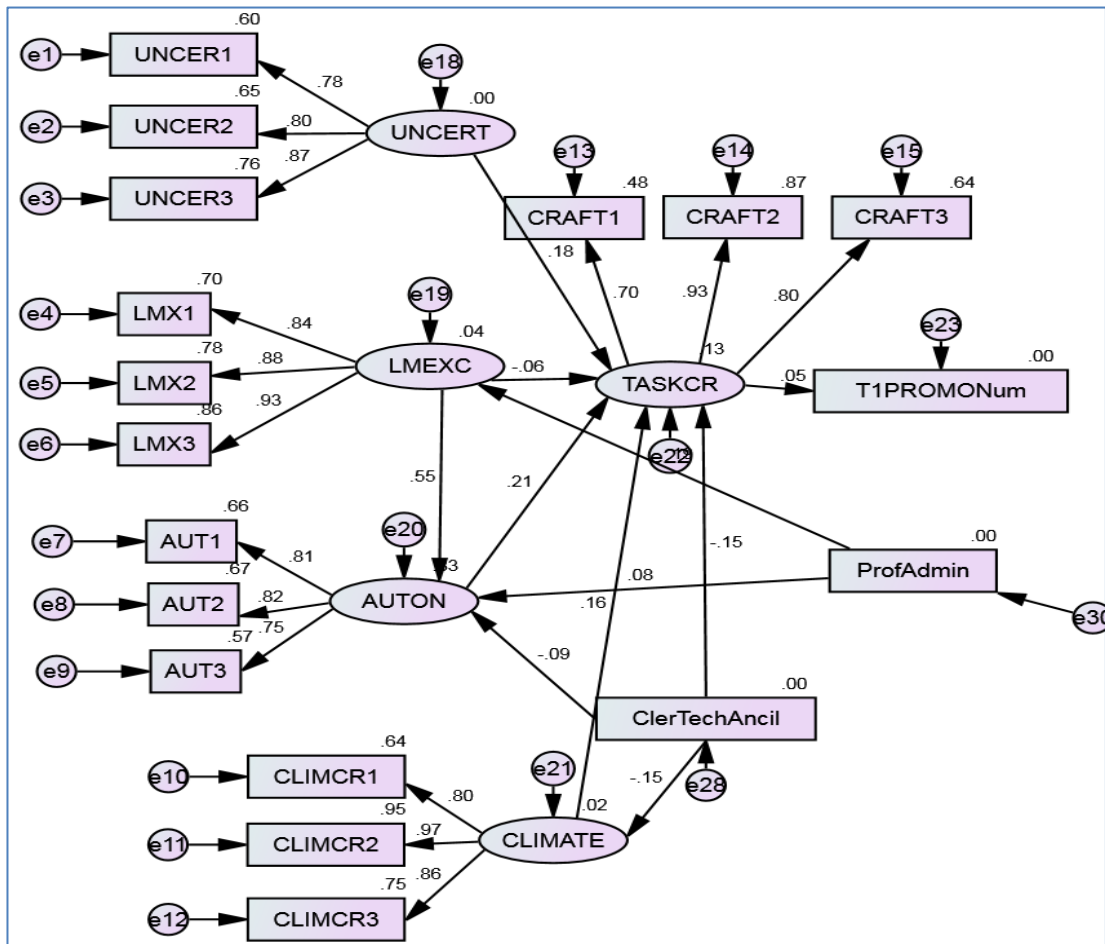
Figure 5: Model 2a Autonomy partially mediating LMX-Task Crafting

BE for model 2a produced a poor model fit, which converged after 54,500(500) iterations (CS 1.0018). Credibility intervals containing zero were seen for pathways including autonomy to task crafting (mean 0.14, 95% CI −0.02, 0.30), climate to task crafting (mean 0.14, 95% CI −0.02, 0.30), LMX to task crafting (mean −0.02, 95% CI −0.15, 0.10), and for the control effects of clerical/technical/admin on autonomy (mean -0.16, 95% CI −0.34, 0.03), and professional/admin on autonomy (mean 0.13, 95% CI −0.11, 0.40). However, the pathway between LMX and autonomy had a positive CI (mean 0.47, 95% CI 0.35, 0.60), as well as the pathway between task crafting and promotion (mean 0.42, 95% CI 0.10, 0.75).

The MLE analysis model fit was also poor (x^2 [127] = 258.52, CMIN/DF = 2.04, $p \leq .001$, CFI = .94, RMSEA = .07, SRMR = .11, AIC = 382.55), with SRMR falling well outside of acceptable model fit parameters. Analysis of regression weights confirmed the BE findings of non-significant relationships between task crafting and LMX ($\beta = -.06$, $p = .52$), and the control effect of clerical/tech/ancillary on autonomy ($\beta = -.09$, $p = .14$). However, the MLE analysis indicated a slightly stronger significant relationship between autonomy and task crafting ($\beta = .21$, $p = .02$) than when autonomy was not linked via a regression pathway to LMX. Additionally, significant pathways were LMX and autonomy ($\beta = .55$, $p \leq .01$), uncertainty to task crafting ($\beta = .18$, $p = .01$), and climate to task crafting ($\beta = .16$, $p = .02$). Significant control variables included cler/tech/ancill on climate ($\beta = -.15$, $p = .02$) and on task crafting ($\beta = -.15$, $p = .02$), and prof/admin on LMX ($\beta = .18$, $p = .01$).
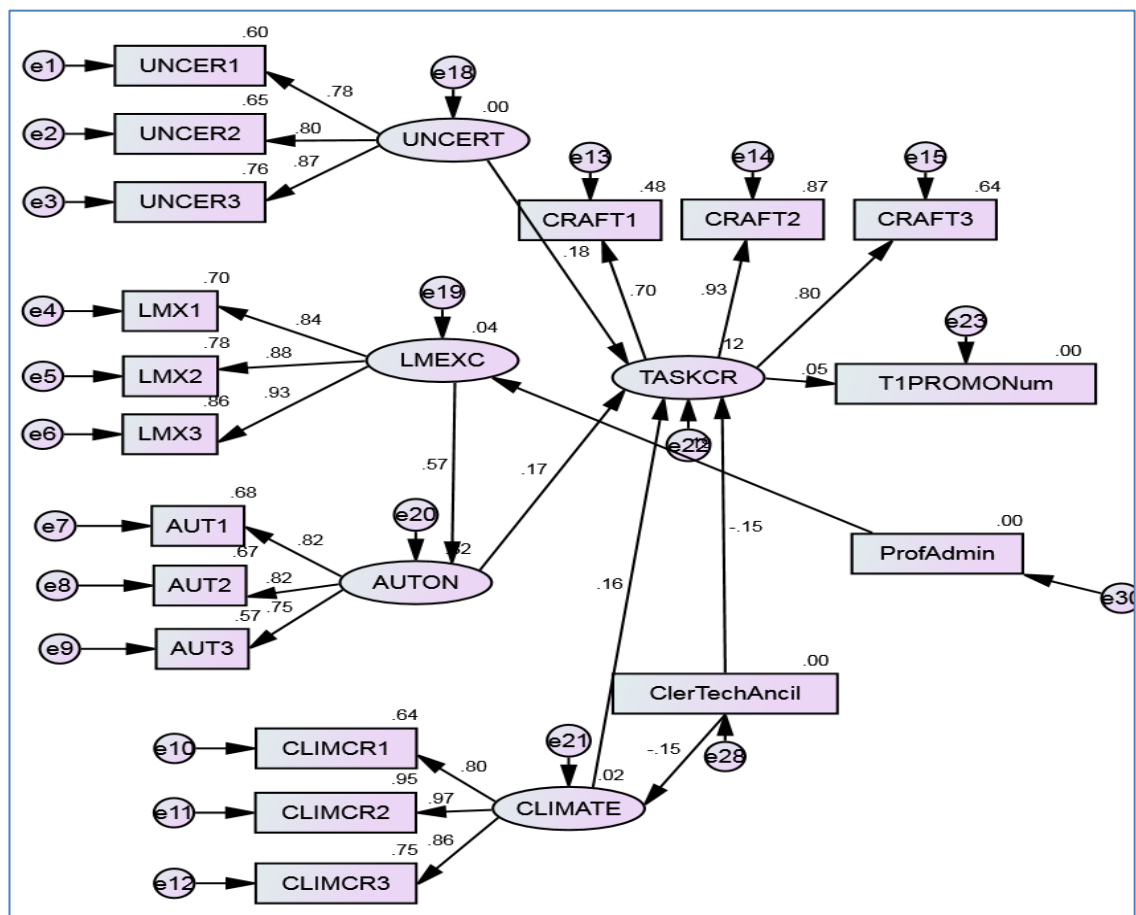

Figure 6: Model 2b Autonomy fully mediating LMX-Task Crafting

Model 2b, with the direct pathway between LMX and task crafting removed and with non-significant controls from the previous analysis removed, showed an improved model fit, with fewer non-significant regressions from both methods of analysis. BE converged at 36,500(500) iterations (CS = 1.002) and the only credibility interval containing zero was for the climate to task crafting pathway (mean 0.14, 95% CI −0.03, 0.30). The means and credibility intervals for the rest of the variables remained positive (Table 21).

Table 21: Model 2b significant means and credibility intervals

		Credibility Interval	
Pathway	**Mean**	**95% Lower Bound**	**95% Upper Bound**
Task Crafting to Promotion	0.44	0.09	0.79
Uncertainty to Task Crafting	0.16	0.04	0.30
Autonomy to Task Crafting	0.13	0.02	0.25
LMX to Autonomy	0.49	0.37	0.61

Comparing the outputs from BE with MLE, the MLE analysis model fit statistics for Model 2b indicated very little change in comparison with Model 2a, showing that again that the model is a poor fit to the data (x^2 [114] = 198.08, CMIN/DF = 2.03, $p \leq .001$, CFI = .94, RMSEA = .06, SRMR = .12, AIC = 381.89). With the exception of the climate to task crafting pathway, both models showed consistent significant regression pathways (see Table 22). However, both Models 2a and 2b indicated a significant relationship between autonomy and LMX ($\beta = .57$, $p = \leq.01$).

Table 22: Model 2b MLE regression weights

			P	Estimates
Promotion	<---	Task Crafting	.01	.07
Task Crafting	<---	Uncertainty	.01	.17
Task Crafting	<---	Autonomy	.01	.18
Autonomy	<---	LMX	≤.01	.57
Task Crafting	<---	Climate	.02	.16

To explore mediation effects, two approaches were used to enable mediation effects to be identified and confirmed, drawing on both BE and MLE methods. First, custom estimands in AMOS™ were used, to identify the size of indirect effects and to evaluate the credibility intervals to determine significance, utilising Bayesian Estimation (Chen & Hung, 2016). Then, the Preacher and Hayes 'Process' command in SPSS (Field, 2015, p393) was applied to the data. This analysis represents an advancement on the Baron and Kenny (1986) approach to MLE mediation analysis in that it uses multiple analysis via bootstrapping to explore and estimate the stability of indirect effects (Field, 2015). The BE analysis indicated a positive mediation effect of autonomy on relationship between LMX and task crafting (mean standardised indirect effect 0.10, 95% CI 0.01, 0.13). The Preacher and Hayes' analysis showed that the effect of LMX on task crafting is fully mediated by autonomy (see Table 23). Thus, H2 is rejected with the results of this analysis.

Table 23: Preacher & Hayes analysis of autonomy mediating LMX-task crafting relationship

Variables	Direct effect without mediator	Direct effect with mediator	Indirect effect Analysed by examining bias corrected bootstrapping two tailed significance (2,000 iterations)
Is the relationship between LMX and task crafting mediated by autonomy) (Models 2a and 2b)	Standardised direct effect ($\beta = -.06$, $p = .53$). (Non-significant)	Standardised direct effect ($\beta = -.06$, $p = .56$). (Non-significant)	Standardised indirect effect of $\beta = .13$, $p = .04$ (Significant). Thus, autonomy fully mediates the relationship between LMX and task crafting.

As model 2b did not provide a good fit for the data, modification indices generated from MLE were analysed, which indicated the potential to improve the model fit by introducing a pathway from LMX to climate. As indicated in the literature review, the link between LMX and climate is theoretically plausible as it is likely that when an employee has a good relationship with their leader/manager, this would contribute towards the development of a climate where doing things differently is acceptable. The direction of pathway suggested is consistent with the model direction. The modification indices (MI) suggested that a pathway between LMX and climate

would improve Chi-Square by 22.61 (MI 22.61) and that the freely estimated parameter would have a regression weight of 0.19 (Par Change = 0.19). In the absence of a significant regression pathway between LMX and task crafting, the addition of a pathway between LMX and climate for crafting tests the proposition that in addition to the effect of LMX on task crafting being mediated by autonomy, the effect of LMX on task crafting is also mediated via a climate for crafting.

Model 2c shows the model pathways for this iteration (Figure 7: Model 2c). Model fit for this model using BE indicated a good model, with convergence of the model at 37,500(500) iterations (CS = 1.0017). None of the pathways in the model had credibility intervals containing zero and the means for the regression pathways are shown in Table 24. MLE model fit also indicated a good fit to the data (x^2 [130] = 242.16, CMIN/DF = 1.86, $p \leq$ .001, CFI = .95, RMSEA = .06, SRMR = .08, AIC = 360.16). As a further check of model fit, the unstandardized regression weights for the pathways from both BE and MLE were compared (Byrne, 2010) (see Table 24).

Table 24: Means and CI for Model 2c

		Bayesian Estimation		Maximum Likelihood Estimation	
		Credibility Interval		**P**	Unstandardized regression weight
Pathway	**Mean**	95% Lower Bound	95% Upper Bound		
Task Crafting to Promotion	0.44	0.13	0.81	0.01	0.07
Uncertainty to Task Crafting	0.17	0.04	0.30	0.10	0.17
Autonomy to Task Crafting	0.13	0.02	0.26	0.02	0.13
LMX to Autonomy	0.50	0.38	0.63	≤0.01	0.50
Climate to Task Crafting	0.17	0.01	0.34	0.03	0.17
LMX to Climate	0.21	0.13	0.30	≤0.01	0.21

This comparison showed the same results from both BE and MLE for all pathways, with the exception of promotion. This difference is to be expected, as the MLE is not able to accurately account for the dichotomous variable of promotion, and hence the reason for the analysis using BE. The similarity of regression weights confirms that the model is a good fit for the data.
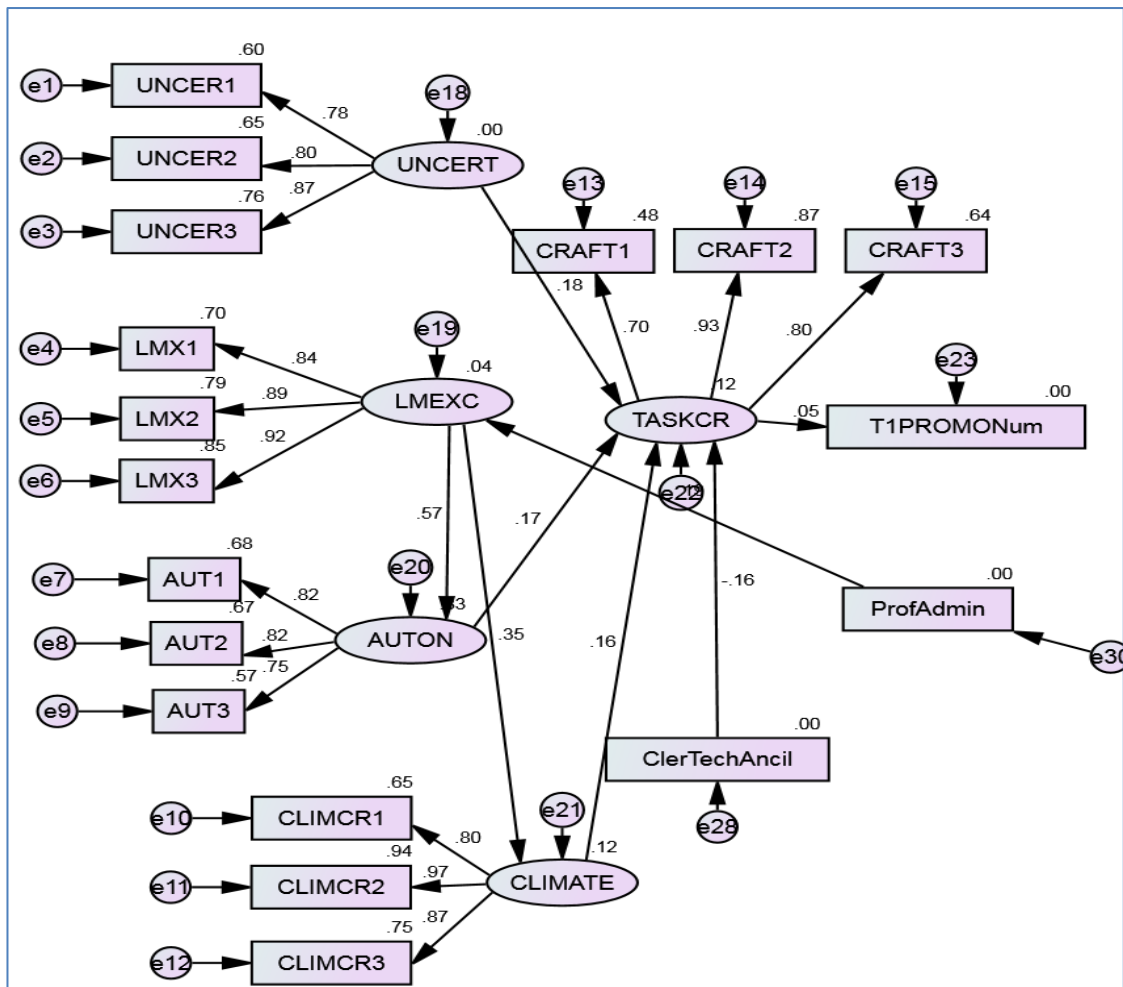
Figure 7: Model 2c LMX to task crafting via climate

The mediation proposition was tested in two ways. First by comparing both the mean from BE and the regression weight from MLE of the pathway between climate and task crafting before and after the addition of the pathway from LMX to climate (see Table 25). Then by interpreting the additional standardised indirect effects from additional estimands in BE, and running the Preacher and Hayes PROCESS analysis in MLE.

Table 25 shows that the MLE regression weight for the climate to task crafting pathway was slightly stronger with LMX than without it, although the difference was very small. The same is true for the BE analysis, but the mean *with* LMX has a credibility interval that does not contain zero and thus is interpreted as significant. Therefore, this first level analysis indicates that the relationship between LMX and task crafting operates in a small way through climate.

Table 25: Mediation analysis of effect of LMX on Climate-Task Crafting

	Maximum Likelihood Estimation outputs		Bayesian Estimation non-standardised mean	
Variables	**Regression weight of climate to task crafting <u>without</u> LMX to climate pathway**	**Regression weight of climate to task crafting <u>with</u> LMX to climate pathway**	**Mean & CI of climate to task crafting without LMX to climate pathway**	**Mean & CI of climate to task crafting with LMX to climate pathway**
Is the relationship between LMX and task crafting mediated by climate	Standardised direct effect (β = .16, p = .02). (Significant)	Standardised direct effect (β = .17 p = .03). (Significant)	Mean 0.14, 95% CI −0.03, 0.30 (Non-significant)	Mean 0.17, 95% CI 0.02, 0.32 (Significant)

The BE analysis indicated a small but positive mediation effect of climate on the relationship between LMX and task crafting (mean standardised indirect effect 0.05, 95% CI 0.01, 0.11). The Preacher and Hayes' analysis showed that the effect of LMX on task crafting is partially mediated by climate (see Table 26). These mediation findings are consistent with the finding that LMX also has an effect on task crafting via autonomy, which indicates that the relationship between LMX and task crafting is both more complicated than initially hypothesised, and that it has an effect on more than one work domain.

Table 26: MLE Mediation analysis of the effect of climate on LMX-Task Crafting

Variables	Direct without mediator from previous model	Indirect effect Analysed by examining bias corrected bootstrapping two tailed significance
Relationship between LMX and task crafting mediated by climate for crafting)	Standardised direct effect (β = .16, p =.02). (Significant)	β =.15, $p \leq 0.01$ (Significant). Thus, climate partially mediates the relationship between LMX and task crafting.

Finally, having identified a model that represented a good fit to the data, the Modification Indices (MI) were examined to ascertain if the model could be improved. Adhering to the conditions for making modifications to the model, the MI suggested that covarying the job category control factors would improve Chi-Square by 18.27 (MI 18.27) and that the freely estimated parameter would have a regression weight of −0.15 (Par Change = −0.15). However, as this change was not supported by the BE outputs and as a relationships between the job categories did not make conceptual sense, this modification was not applied.

5.2.4 Summary of key findings from initial hypothesis testing of time 1 data

Initial hypothesis testing from the time one data has led to the acceptance of some of the model hypotheses, the rejection of some and the creation of a new model of correlates and outcomes of task crafting (see Figure 8).

The final model (Figure 8) indicates that autonomy is a proximal correlate of task crafting, supporting H1a. However, in addition to exerting an independent effect, autonomy also partially mediates the relationship between LMX and task crafting, and climate and task crafting. Additional support has been found for a climate for crafting being a correlate of task crafting, supporting H3, but the effect of climate on task crafting is more complex than was hypothesised, with climate exerting a mediating effect on the relationship between LMX and autonomy. In terms of outcomes, task crafting has been shown to be an antecedent of promotion, supporting H4.
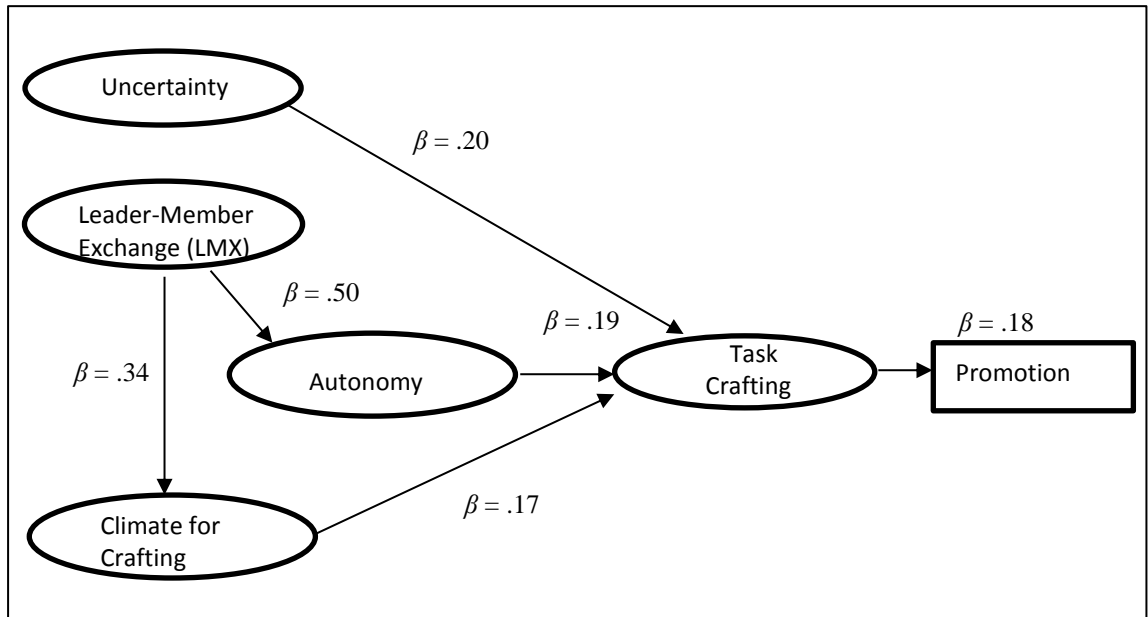
Figure 8: New model of correlates and outcomes of task crafting

However, analysis has led to the rejection of two of the model hypotheses. First, uncertainty was not found to moderate the relationship between autonomy and task crafting, thus H1b is rejected. However, uncertainty has been found to act as an independent antecedent of task crafting, introducing a new relationship into the model. Furthermore, contrary to expectations, the relationship between LMX and task crafting was not as simple as had been hypothesised. LMX was not found to be a direct antecedent of task crafting, and thus H2 is partially rejected. Instead, LMX was found to exert an effect on task crafting through both autonomy, and through a climate for crafting, again introducing new relationships into the model.

5.3 ALTERNATIVE MODELS

The analysis thus far has concerned time 1 data only, and therefore represents a cross-sectional analysis. Therefore, although some of the relationships between the model variables have been supported, examining the direction of these relationships warrants further consideration. Because the possibility of all of the antecedents having a direct effect on promotion had already been analysed and discounted, three other theoretically plausible possibilities were analysed.

First, the possibility that promotion could stimulate changes in both task crafting and in the other variables in the model was considered. A model positioning promotion as the antecedent variable and all of the other model variables as dependent variables produced a poor model fit. Using BE, the model converged at 42,500(500) iterations (CS = 1.0018) and the credibility interval for the pathway between promotion and uncertainty contained zero (mean 0.09, 95% CI −0.04, 0.23). All other pathways had positive credibility intervals (Table 27).

Table 27: BE Outputs for alternative model with promotion as antecedent

		Credibility Interval	
Pathway	Mean	95% Lower Bound	95% Upper Bound
Promotion to Task Crafting	0.23	0.11	0.35
Promotion to LMX	0.61	0.44	0.78
Promotion to Autonomy	0.66	0.49	0.83
Promotion to Climate	0.23	0.13	0.34

MLE analysis also showed a poor model fit (x^2 [131] = 354.63, CMIN/DF = 2.70, $p \leq .001$, CFI = .90, RMSEA = .08, SRMR = .16, AIC = 470.63). Significant regressions were shown for promotion with autonomy (β = .16, p = .02) and for promotion with task crafting (β = .16, p = .01). Climate was not significantly associated with promotion ($\beta \leq -.01$, p = .94), neither was LMX (β = .09, p = .17), nor uncertainty (β = .02, p = .70). With the exception of the positive relationship between autonomy and promotion, MLE analysis model confirms the direct effect analysis already reported.

Next, the a model which positioned task crafting as an outcome of promotion, as identified above, and then positioned autonomy, LMX and climate for crafting as outcomes of task crafting was analysed, as the extant literature is beginning to indicate that it is possible that the antecedents identified in my theoretical model may be outcomes (Figure 9: Alternative Model 1a). In this model, uncertainty was retained as an antecedent of task crafting as it is unlikely that task crafting would lead to higher levels of uncertainty. Only control variables which were

indicated as significant in the initial hypothesis testing final model were included in this iteration (Cler/Tech/Ancil to task crafting, and Prof/Admin to LMX).

BE outputs indicated that the model was a poor fit for the data. The model converged at 51,500(500) iterations (CS = 1.0017), and a credibility interval containing zero was found for the task crafting to LMX pathway (mean 0.20, 95% CI −0.02, 0.42). MLE analysis of model fit statistics also indicated that the model was a poor fit for the data, with SRMR, RMSEA and CFI all falling outside of acceptable parameters (x^2 [133] = 769.30, CMIN/DF = 5.78, $p \leq .001$, CFI = .72, RMSEA = .14, SRMR = .14, AIC = 881.30). However, all of the regression pathways in this model were significant.
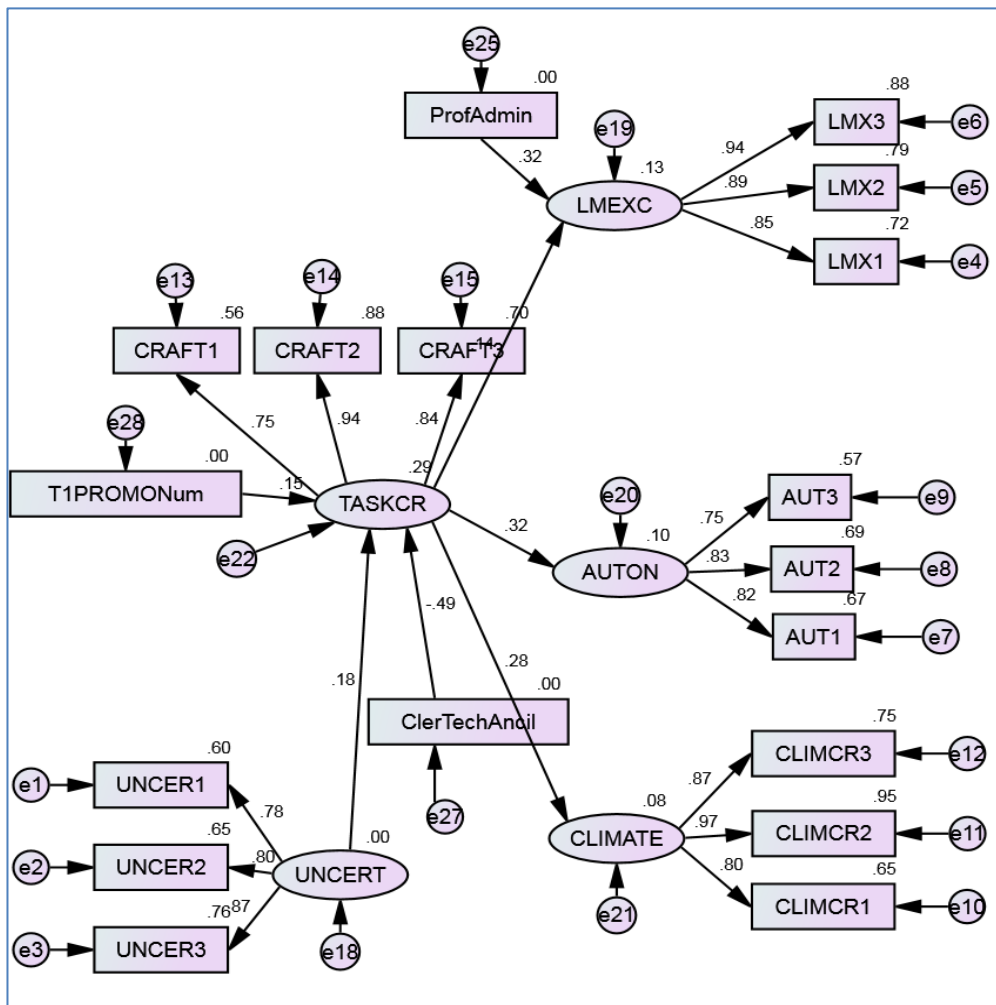

Figure 9: Alternative Model 1a

To improve the model fit, the credibility intervals in BE alongside the modification indices (MI) from the MLE were analysed to identify where improvements to the model fit could be achieved. Removing the non-significant pathway between LMX and task crafting as indicated in the BE outputs would have resulted in this variable being isolated from the rest of the model. Therefore, at this iteration, two changes to the model were made. First, the non-significant regression pathway from LMX to task crafting was removed, and alongside this, inspection of the MI indicated that a regression pathway from LMX to autonomy would improve the model fit (MI 45.19, Parameter change .55). This pathway was both theoretically plausible, and consistent with the pathway in model 2a and in the revised model following initial testing (as shown in Figure 8).

Alternative Model 1b included the regression pathway from LMX to autonomy (Figure 10). From BE, the model converged at 48,500(500) iterations (CS = 1.002). None of the pathway credibility intervals contained zero and all were therefore judged to be significant (Table 28).

Table 28: Means and CI for Alternative Model 1a

		Credibility Interval	
Pathway	Mean	95% Lower Bound	95% Upper Bound
Promotion to Task Crafting	0.20	0.03	0.36
Uncertainty to Task Crafting	0.18	0.05	0.32
Task Crafting to Autonomy	0.28	0.11	0.45
Task Crafting to Climate	0.22	0.10	0.35
LMX to Autonomy	0.47	0.35	0.60

MLE model fit statistics showed the model was a poor fit to the data (x^2 [131] = 262.14, CMIN/DF = 2.00, $p \leq .01$, CFI = .94, RMSEA = .07, SRMR = .11, AIC = 378.14). Again, all regression pathways were significant.
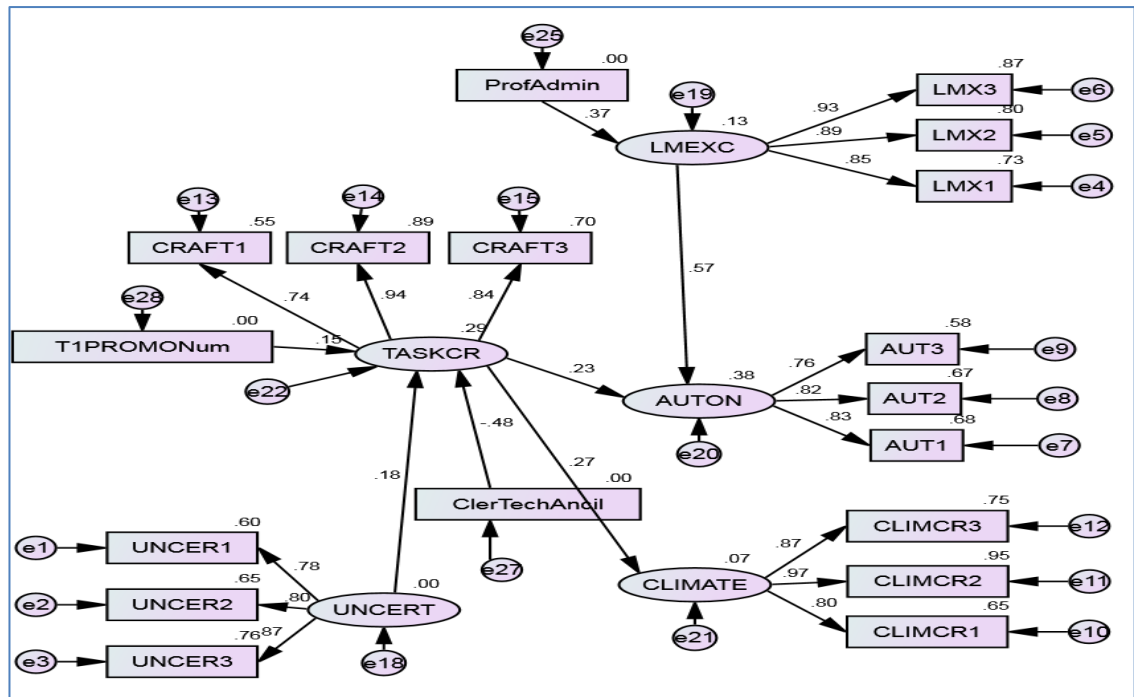
Figure 10: Alternative Model 1b

To improve the model fit, a regression pathway from LMX to climate was added, as indicated in the modification indices (M.I. 21.39, Parameter Change = .18). This pathway tested the proposition that LMX influences a climate for crafting, and is consistent with the findings from the first round of hypothesis testing (see Figure 8). The resulting model (Figure 11: Alternative Model 1c) was a good fit to the data. Using BE, the model converged at 48,500(500) iterations (CS = 1.002), and the outputs showed that all credibility intervals were positive and did not contain zero. MLE also produced a good model fit (x^2 [130] = 238.33, CMIN/DF = 1.83, $p \leq .01$, CFI = .95, RMSEA = .06, SRMR = .08, AIC = 356.33).
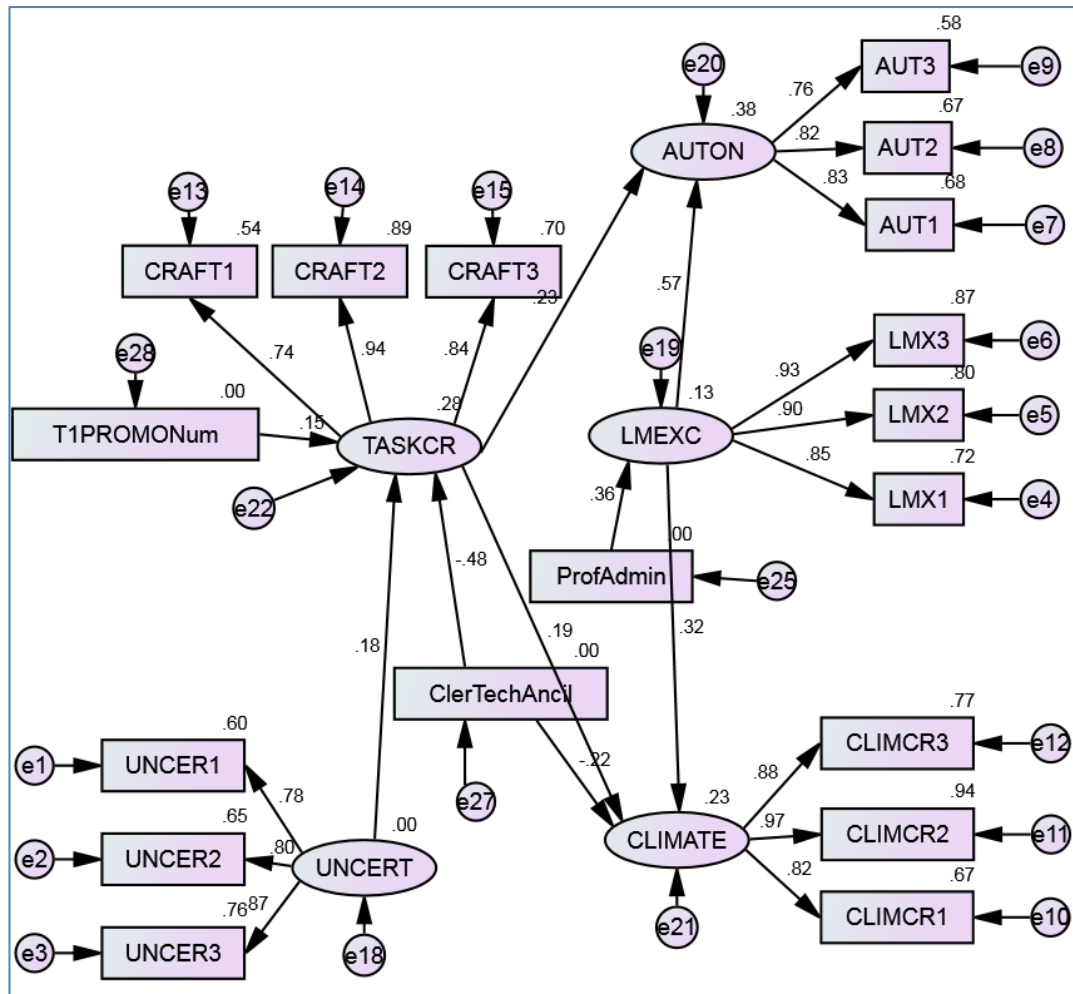
Figure 11: Alternative Model 1c

Finally, because of the possibility that task crafting may be acting as a mediator between promotion and autonomy, as indicated in the results from testing an alternative model with promotion as the antecedent variable and all other variables as direct dependent variables of this, a mediation model was tested. Testing this mediation model necessitated adding direct pathways between promotion and autonomy (see Figure 12: Alternative Model 1d) and examining direct and indirect effects.
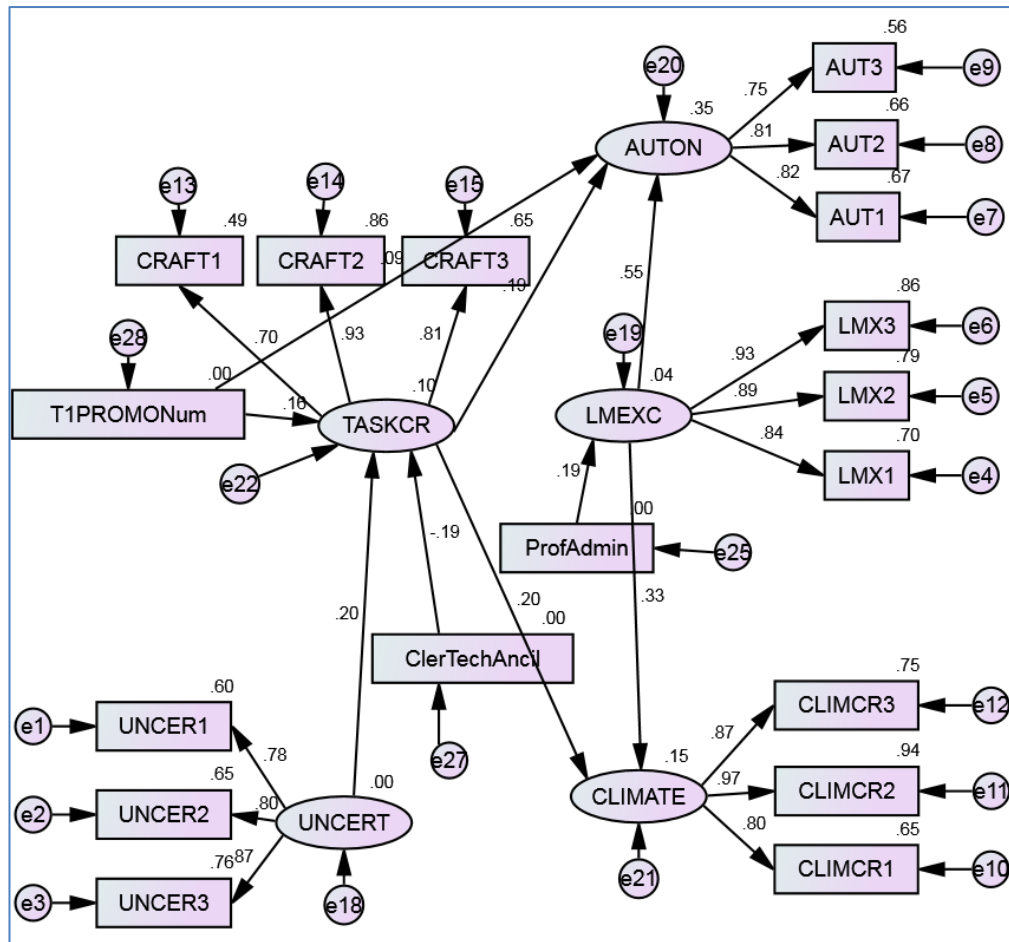
Figure 12: Model 1d

From BE, the model converged at 45,500 (500) iterations (CS = 1.0018). The credibility interval from promotion to autonomy contained zero (mean 0.15, 95% CI −0.07, 0.35) indicating a non-significant pathway. As expected, MLE analysis model fit statistics showed that this model was a good fit to the data (x^2 [129] = 236.38, CMIN/DF = 1.83, $p \leq .001$, CFI = .95, RMSEA = .06, SRMR = .08, AIC = 356.38). The pathway between promotion and autonomy was not significant ($\beta = .09$, $p = .16$). Analysis of indirect effects using the Preacher and Hayes PROCESS tool (Field, 2015) shows that there is a small relationship between promotion and both autonomy and climate for crafting, but this effect is fully mediated by task crafting (Table 29).

Table 29: Mediation analysis of task crafting on autonomy and climate

Variables	Direct without mediator from previous model	Direct with mediator	Indirect effect Analysed by examining bias corrected bootstrapping two tailed significance
Relationship between promotion and autonomy mediated by task crafting	Standardised direct effect ($\beta = .16, p = .02$). (Significant)	$\beta = .09, p = .16$ *(Non-significant)*	$\beta = .04, p = .01$ (Significant). Thus, using bootstrapping, confirms that task crafting mediates the effect between promotion and autonomy, although the effect size is small.

5.3.1 Summary of alternative model testing

Alternative model testing confirmed the relationship between task crafting and promotion, but suggests that promotion may be an antecedent of task crafting. It also confirmed that the relationship between task crafting and LMX is not direct. Finally, it confirmed that there is an interaction between LMX and both climate for crafting and autonomy. At this point, the results have produced two competing models which both represent a good fit to the data. Figure 13 shows the final model arising from the analysis of time 1 data with the antecedents and outcomes in the hypothesised direction (Final Model 1). Figure 14 shows the final model arising from the analysis the potential for reverse effects, carried out as a consequence of the data at time 1 being cross-sectional (Alternative Model 2).

The relationships shown in the two competing models have some similarities. For instance, uncertainty is positioned in both models as an antecedent of task crafting, and LMX in both models is not directly associated with task crafting. Further, LMX in both models is related to both climate for crafting and autonomy. However, there are significant conceptual differences with the positioning of promotion as an antecedent or an outcome of task crafting.
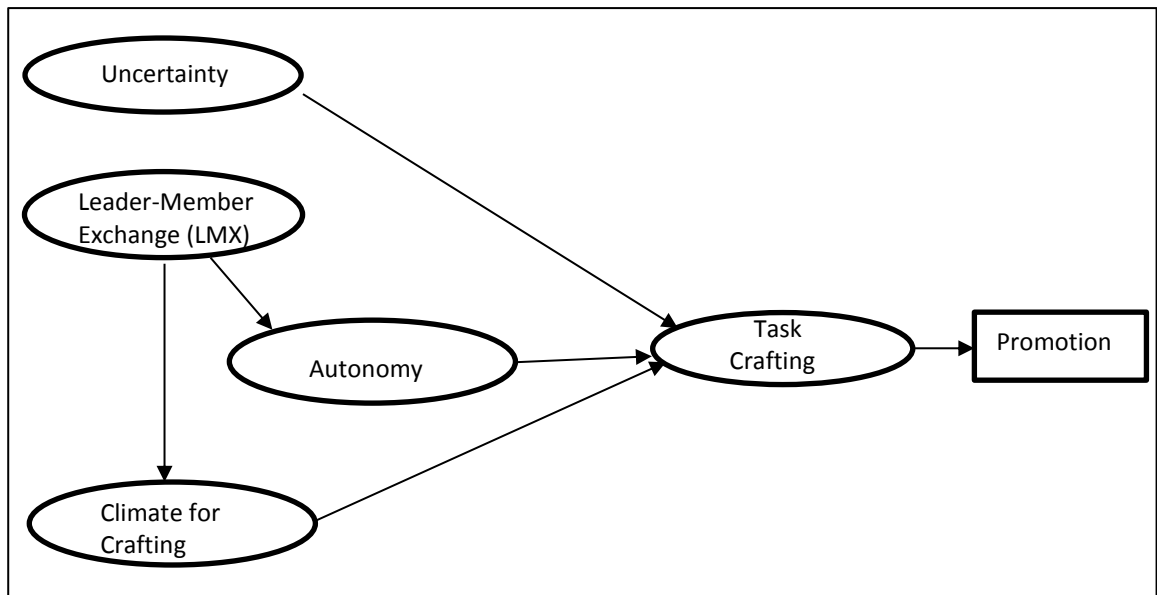
Figure 13: Final Model 1
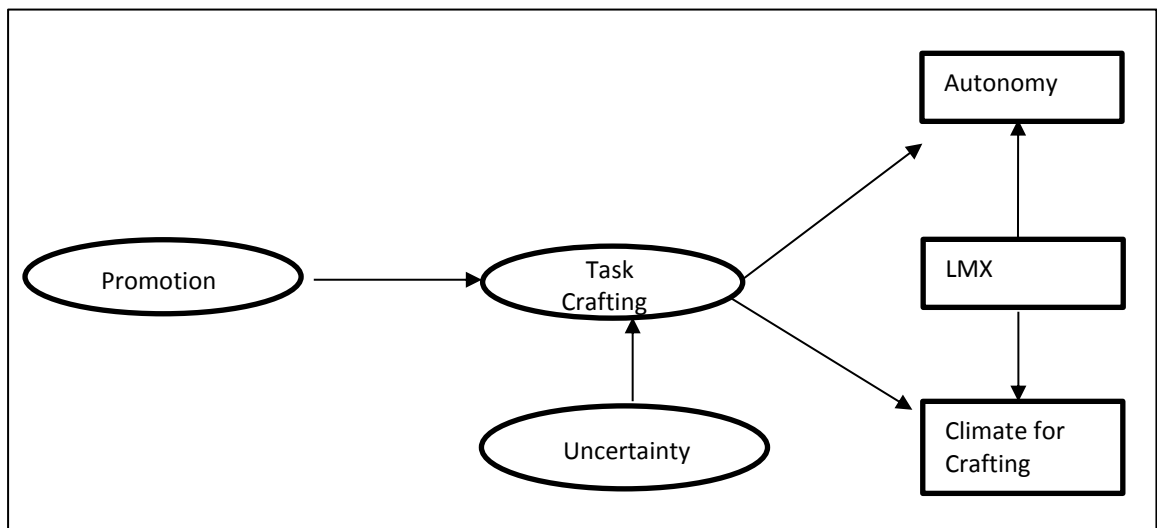
Figure 14: Alternative Model 2

5.3.2 Comparison of final and reverse models

To test which model best represents the data, a nested model analysis was carried out. This involved adding all pathways from the original and the reverse model into one structural equation model and running the analysis. Subsequent chi-square difference testing of the nested model with the alternatives then indicate which one of the two is a better fit to the data. Pure examination of chi-square difference tests from the two models is not appropriate in this circumstance, as the chi-square difference test can only compare nested models where there are

small parameter / pathway changes. Therefore, an alternative approach of creating an overall model which includes all the pathways from both of the well-fitting models and then carrying out the chi-square difference test for each model compared with the overarching inclusive model was used. In this way, a nested model analysis is appropriate. Comparison of nested models was completed in three stages.

Stage 1: Creation of a combined pathways model which included all pathways from Final Model 1 and Alternative Model 2.

Stage 2: Comparing model fit statistics for the two models (Final Model 1 and Alternative Model 2).

Stage 3: Comparing each of the nested models (Final Model 1 and Alternative Model 2) in turn with the combined pathways model using the chi-square difference test.

Model fit statistics for the overall model completed for stage 1 of the nested model comparison process indicated that the model was a good fit to the data (x^2 [95] = 148.80, CMIN/DF = 1.58, $p \leq .01$, CFI = .98, RMSEA = .05, RMR = .06, SRMR = .05, AIC = 232.80) (see Figure 15: Combined Pathways Model).
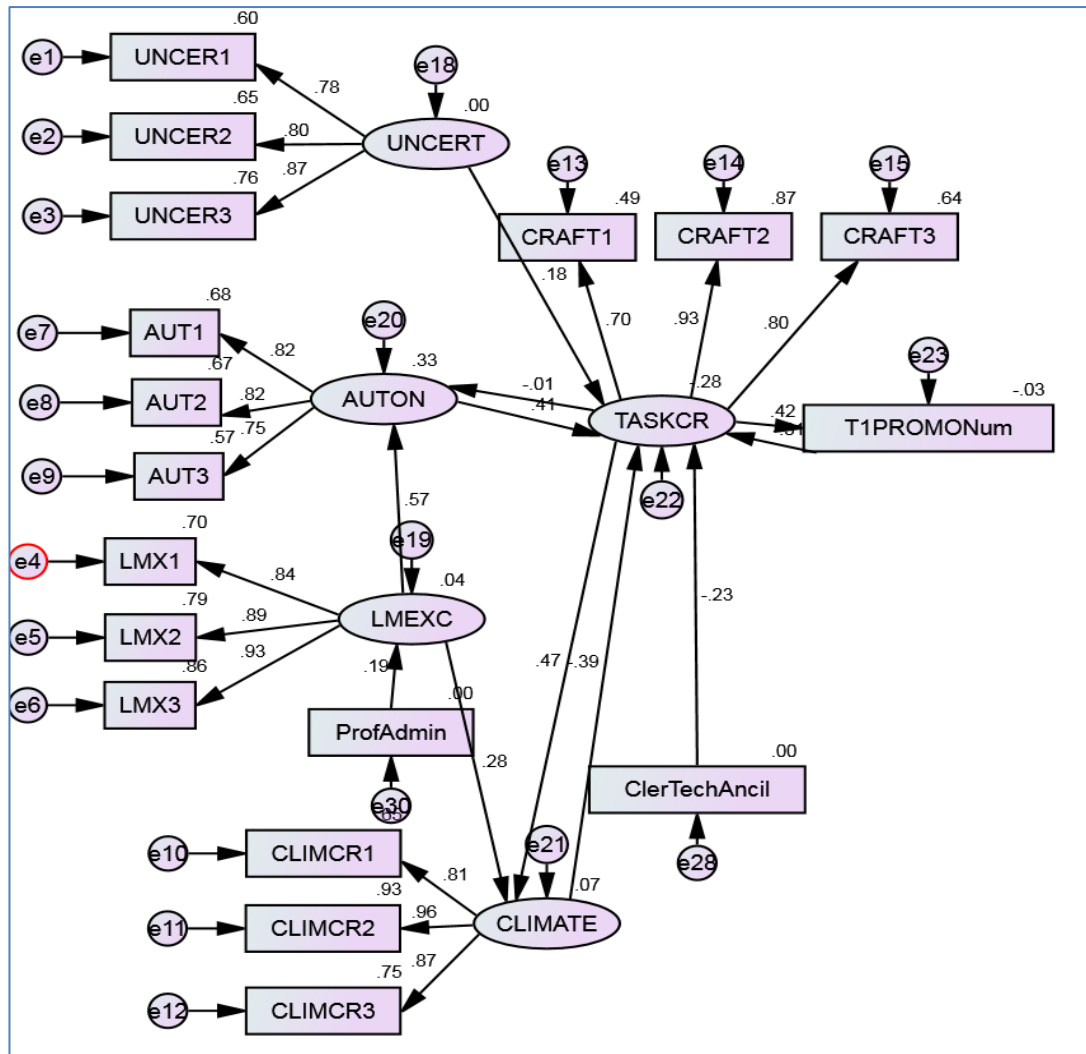
Figure 15: Combined Pathways Model

Analysis of regression weights shows that in this model, the only significant regressions are from uncertainty to task crafting ($\beta = .21$, $p \leq .01$), and LMX to both autonomy and climate ($\beta = .50$, $p \leq .01$, and $\beta = .35$, $p \leq .01$ respectively). Both directions of regression from promotion to task crafting, and task crafting to promotion, are non-significant ($\beta = .13$, $p = .48$, and $\beta = .06$, $p = .78$ respectively). Furthermore, the relationship between promotion and autonomy is also not significant ($\beta = .09$, $p = .14$). Additionally, the regression from autonomy to task crafting, and task crafting to autonomy is not significant ($\beta = -.02$, $p = .95$, and $\beta = .17$, $p = .30$ respectively). Thus, in this model, promotion has no significant relationships with any of the

variables and should be excluded from the model. However, we would expect this as the model contains multi-directional relationships which confound the model.

Stage 2 analysis demonstrated that Final Model 1had a slightly better model fit across a range of indicators, than the Alternative Model 2 (see Table 30).

Table 30: Comparison of hypothesised and reverse model fit statistics

Indicator	Alternative Model 2	Final Model 1 – Hypothesised direction of effect	Fit Interpretation
CMIN/DF	1.83, $p \leq .01$	1.86, $p \leq .01$	Comparison is meaningless as these are not nested models.
Chi Sq and DF	238.33, *130*	242.16, *130*	A smaller x^2 indicates Alternative Model 2 is a better fit.
CFI	.95	.95	Both models are the same
RMSEA	.06	.06	Both models are the same
SRMR	.08	.08	Both models are the same
AIC	356.33	360.16	AIC is lower for Alternative Model 2, indicating better fit.

Stage 3 analysis compared each of the nested models (Final Model 1 and Alternative Model 2) in turn, to the combined pathways model, using the chi-square difference equation as follows:

$$x^2_{\ diff} = x^2_{\ s} - x^2_{\ 1} \text{ and } df_{diff} = df_s - df_l$$

Table 31: Nested models analysis of fit

Models being compared	Chi-square difference calculation	Interpretation of results
S= Final Model 1, l = Combined Pathways Model	242.16 – 231.93 = 10.23 Df: 130 – 127 = 3	10.23, 3*df* is significant as 10.23 is above the critical threshold for chi-square significance (7.81 at $p = .05$). Thus the difference between Final Model 1and Combined Pathways Model is significant.
S = Alternative Model 2, l = Combined Pathways Model	238.33 – 231.93 = 6.40 Df: 130 – 127 = 3	6.40, 3*df* is not significant as 6.40 is below the critical threshold for chi-square significance (7.81 at $p = .05$). Thus the difference between Alternative Model 2 and Combined Pathways Model is not significant.

Table 31 shows that in relation to the combined pathways model, Final Model 1 achieves the threshold for chi-square significance. Thus, the null hypothesis of neither model representing a better fit to the data than the combined model can be rejected. This indicates that the Final Model 1 is plausible, whereas Alternative Model 2 is not. This is despite the Alternative Model 2 having some marginally better model fit indicators from the MLE analysis.

5.4   ANALYSIS OF TIME 2 DATA

5.4.1   Relationships between time 2 promotion and model variables

Correlation analysis between the Time 1 variables and Time 2 promotion shows that none of the antecedent variables are significantly correlated with Time 2 promotion, with the exception of task crafting (see Table 17, page 143).

5.4.2   Logistic Regression

Binary logistic regression tested the relationship between task crafting at Time 1 and promotion at Time 2. No demographic control variables were included in the model because none of these variables were found to correlate with Time 2 promotion. The results show that task crafting at Time 1 significantly increases the probability of promotion at Time 2 by 1.99 times, as shown by the Odds Ratio (OR) figure (Exp(B) = 1.99, 95% Lower and Upper CI = 1.01 to 3.93) (see Table 32). The chi-square is significant as 4.05, *1df* is above the critical chi-square threshold, indicating that the model is a good fit to the data. Analysis of residuals to determine model fit (see Field, 2015) show that there are no values outside expected ranges for Cook's Distance (values between .001 and .259), Leverage (expected value 0.008, range 0.011 to 0.111), and DFBeta (value should be less than 1, range = −.674 to 0.143), indicating that there are no data points exerting an undue influence on the model.

Table 32: Logistic regression of the effect of task crafting at Time 1 on promotion at Time 2

		β	OR	95% CI Lower	95% CI Upper
				Model 1	
1	Constant	−.22	0.11		
2	T1Task Crafting	.69	1.99	1.01	3.93
−2LL		61.18			
X^2		$X^2 = 4.05, p = .04$			
Nagelkerke R^2		0.08			
Cox and Snell R^2		0.04			
Wald Statistic		3.90, $p = .05$			

Note. The outcome variable was promotion, coded as 0 = no promotion, 1 = promotion

In order to examine whether the effect of task crafting on time on promotion at Time 2 was greater than the effect of task crafting at Time 1 on promotion at Time 1, the regression was repeated, with Time 1 promotion being used as the dependent variable. The results showed that task crafting at Time 1 increases the probability of promotion at Time 1 by 1.91 times, as shown by the Odds Ratio (OR) figure. The chi-square figure is significant (x^2 (1df) = 7.71, p = <.01) indicating that this model is a good fit to the data (Table 33).

Table 33: Logistic regression of the effect of task crafting at Time 1 on promotion at Time 1

		β	OR	95% CI Lower	95% CI Upper
				Model 2	
1	Constant	−4.25	0.01		
2	T1Task Crafting	0.65	1.91	1.20	3.03
−2LL		134.90			
X^2		$X^2 = 7.71, p = .01$			
Nagelkerke R^2		0.07			
Cox and Snell R^2		0.03			
Wald Statistic		7.48, $p = .01$			

Note. The outcome variable was promotion, coded as 0 = no promotion, 1 = promotion

To evaluate which of the two models is a better fit for the data, the residuals were interpreted in relation to two aspects. First, the model fit was examined using standardised residuals. Applying Field (2015) guidance on the interpretation of standardised residuals, the data showed that 4.8% of respondents produced standardised residuals that were above the standard deviation of ± 2.58, exceeding the recommended 1% of respondents that would be acceptable if the figure was outside of this level of deviation. Of this 4.8%, 83% produced standardised residuals that

indicated cause for concern as they were more than $\pm$ 3 SD (4% of the total 4.8% who were outside of $\pm$ 2.58 SD).

Then, to examine whether any data points were exerting an undue influence on the model, Cooks Distance, Leverage and DFBeta were examined. Values were within expected ranges for Cook's Distance (values between 0.00 and 0.231), Leverage (expected value 0.008, range 0.005 to 0.047), and DFBeta (value should be less than 1, range = $-$.101 to .078). Model 2, positioning task crafting at Time 1 as the proximal antecedent of promotion at Time 1 therefore represented a worse fit to the data than model 1, which positioned task crafting at Time 1 as the proximal antecedent of promotion at Time 2.

5.5 SUMMARY OF KEY FINDINGS

The results show that the originally hypothesised model was only partially supported. In relation to the antecedents of task crafting:

- Hypothesis 1a, that autonomy is related to task crafting, is supported. However, autonomy also mediates the relationship between LMX and task crafting.

- Hypothesis 1b, that uncertainty moderates the relationship between autonomy and task crafting, is not supported. Instead, uncertainty has a positive and direct relationship with task crafting.

- Hypothesis 2, that LMX is positively associated with task crafting is not supported as a direct relationship. However, an indirect and fully mediated relationship between LMX and task crafting was found, with autonomy and a climate for crafting acting as mediators.

- Hypothesis 3, that a climate for crafting is positively related to task crafting, is supported. However, a climate for crafting also acts as a mediator in the relationship between LMX and task crafting.

In relation to promotion:

- Hypothesis 4, that task crafting is a proximal antecedent of promotion, is supported. Furthermore, this relationship is stable over time, with the likelihood of promotion increasing by 1.99 times when task crafting takes place.

CHAPTER 6: DISCUSSION

This chapter is structured into three parts, each addressing one aspect of the discussion. The first part begins with a discussion of the final model and explores the differences between the hypothesised model and the final model. Each of the key relationships is discussed in turn, along with consideration of the practical and theoretical contributions. The second part reflects on the strengths and limitations of the research and presents considerations for future research to extend the findings here. Finally, the discussion concludes with a brief personal reflection which takes account of my journey as a researcher and both the learning and the challenges that have occurred during this PhD process.

6.1 OVERVIEW OF THE STUDY

In this study, I tested a model of correlates and outcomes of task crafting, focusing specifically on promotion as an outcome. The correlates included autonomy as a formal element of job design, the work climate as a representation of the broader relational and psychological work environment, LMX as an indicator of employees' perceptions of the quality of relationship with their managers, and uncertainty as a contextual moderator. The aims of the study were to enhance job crafting theory by providing new evidence to support the relationship between task crafting and the selected correlates and outcome. This discussion will now consider the theoretical and practical contributions that the findings make.

6.2 COMPARISON OF HYPOTHESISED AND FINAL MODEL

The final model that emerged from the model testing supported the hypothesised relationship between task crafting and promotion, but was very different from the initially

hypothesised model (see Figures 16 and 17). However, the relationships between autonomy,

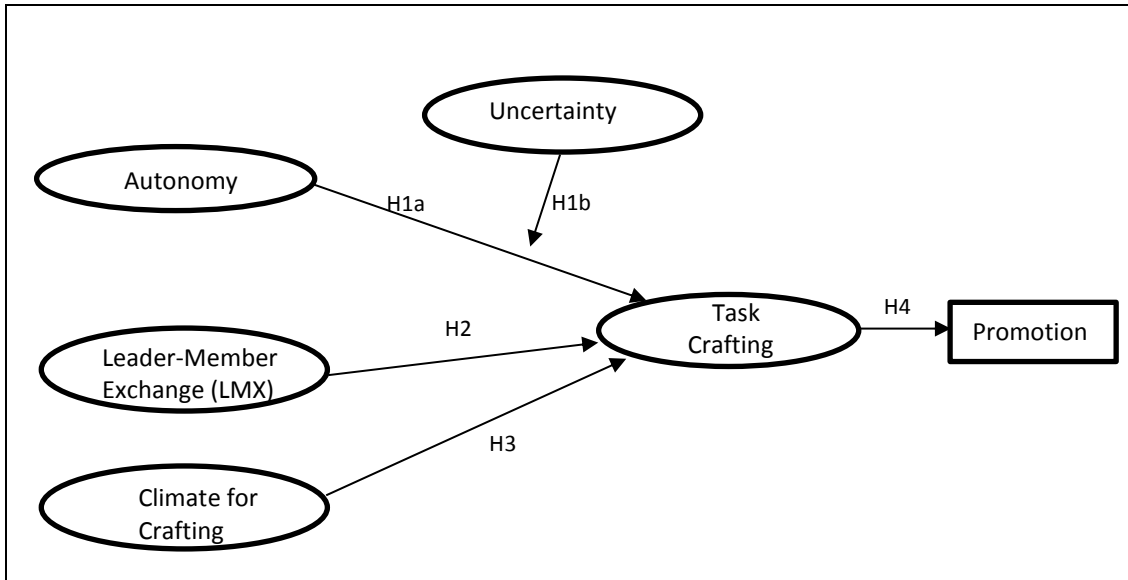climate, LMX and uncertainty were not as expected.

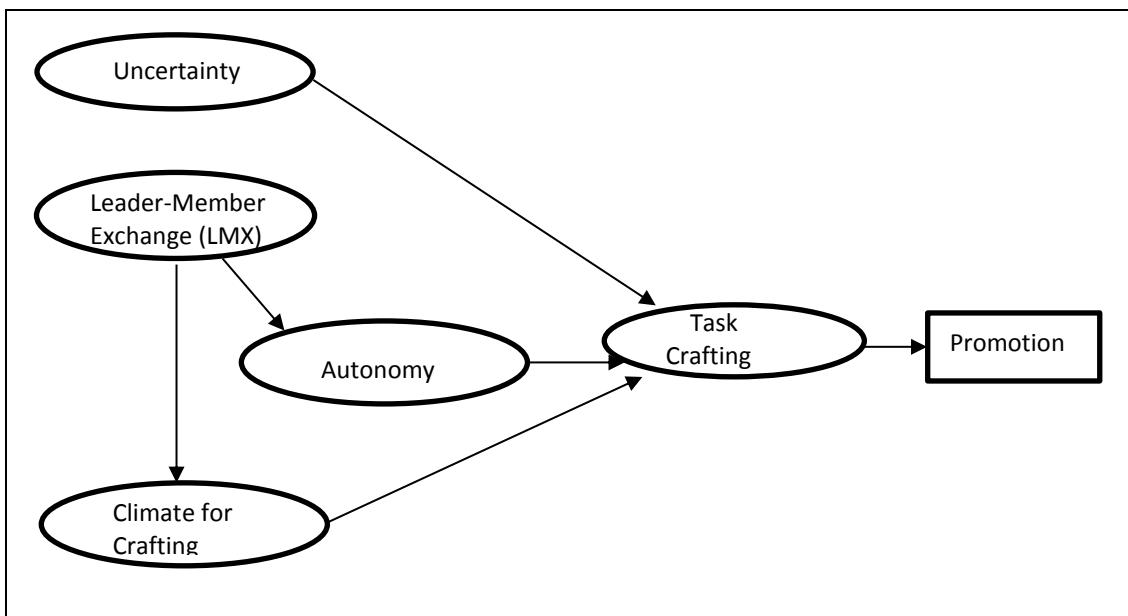**Figure 16: Hypothesised model of correlates and outcomes of task crafting**

Figure 17: Final model of correlates and outcomes of task crafting

6.2.1 Task crafting makes promotion more likely

The most important finding from this study is the confirmation of the positive relationship between promotion and task crafting that formed one of the key research questions in this study. Furthermore, demographic analysis showed that this relationship was stable across both male and female staff, and across staff in varying job categories. The logistic regression analysis also showed that this relationship was stable over time.

Theoretically, this finding was not surprising as the extant literature reviewed in Chapter 3 indicated that this relationship was plausible, both in terms of beneficial outcomes of task crafting on contextual and task performance, and in terms of the alignment of underpinning concepts which influence both task crafting and career development. However, this is the first study to demonstrate this relationship and therefore this finding makes a significant new contribution to both job crafting and career development theories.

6.2.1.1 Practical and theoretical implications

Until now, career development as an outcome of job crafting has only been alluded to within the literature around work identity (Wrzesniewski & Dutton, 2001), and the importance of career in work identity development (Nordhall & Knez, 2018). The finding that task crafting enhances the likelihood of promotion indicates that task crafting could be used as a mechanism for change in relation to career development. This finding makes two specific contributions to job crafting theory. First, the motivations for and outcomes of task crafting may need to be reconsidered, in relation to career development. Second, task crafting may need to be more explicitly considered within career development theory and practices, which makes specific contributions to the way in which career development theory is interpreted and applied. Each of these contributions will now be explored in turn.

6.2.1.2 *Extension of knowledge relating to outcomes of task crafting*

Despite the consideration of task crafting as a deliberate career enhancement strategy, the fundamental contention in this thesis is that promotion is an unintended positive outcome of task crafting. Referring back to the existing research on known outcomes of task crafting, there is currently very little research that has focussed specifically on task crafting as a dimension of job crafting. The research dominance of the Job Demands-Resources (JD-R) perspective on job crafting has resulted in a large amount of research which does not distinguish between the three forms of job crafting (task, cognitive and relational). Yet, this thesis has provided evidence that task crafting, as one dimension of job crafting, has specific and measurable effects on the performance outcome of promotion.

Thus, I suggest that my finding of promotion as an outcome of task crafting makes two new theoretical contributions. First, it builds on the work of Slemp and Vella-Brodrick (2014), McClelland et al. (2014), and Lin et al. (2017) which has already identified OCB's, wellbeing, intrinsic needs satisfaction and performance as specific outcomes of task crafting. Considering this in relation to the pathways through which performance improvement is demonstrated (as explored above) there are two potential outcome models which could represent this. A model which positions promotion as another outcome of task crafting in addition to those identified above (see Figure 18).
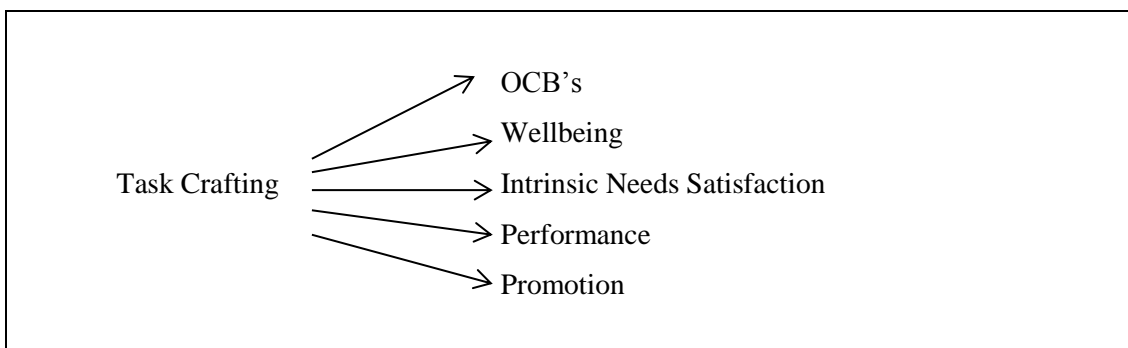
Figure 18: Model of outcomes of task crafting

However, this is a relatively simplistic model as it does not take account of any potential mediating or linear effects from performance to promotion. A more realistically complex model which positions promotion as a distal outcome of task crafting, arising from the improved visibility that the known outcomes elicit, allows for consideration of the mediating effect of the four known outcomes on visibility (see Figure 19).
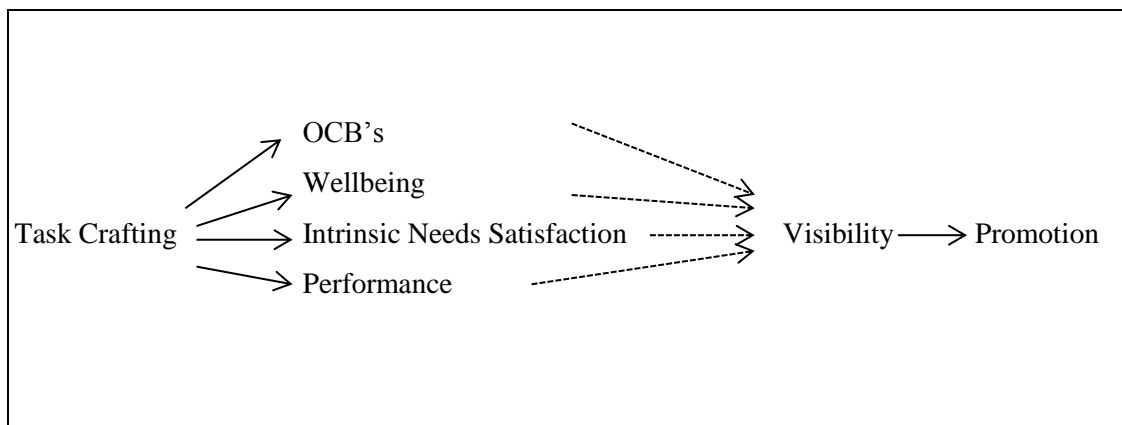
Figure 19: Alternative model of outcomes of task crafting

The second theoretical contribution related to outcomes of task crafting is the strengthening of evidence related to one specific dimension of job crafting, which leads to a clear call for more research that distinguishes the three dimensions of job crafting, in order that increased understanding of the contribution of each of the dimensions to specific performance outcomes can be determined. This approach was adopted by Slemp and Vella-Brodrick (2014) in their examination of the impact of job crafting on intrinsic needs satisfaction, a study which provided strong evidence supporting my focus within this thesis on task crafting. This is important, because the findings from this study have demonstrated that current knowledge of antecedents of job crafting may not apply to each of the dimensions of job crafting independently.

6.2.2 Autonomy and uncertainty relationship is not as expected

The final model partially confirmed the expected relationship between autonomy and task crafting, in that a positive relationship between autonomy and task crafting was found, with autonomy acting as an antecedent of task crafting. However, within the theory development section of this thesis, uncertainty was positioned as a potential moderator of the autonomy-task crafting relationship with higher levels of uncertainty strengthening the relationship between autonomy and task crafting. This relationship was proposed on the basis that stable conditions create an environment with low levels of stimulus for creative behaviours, such as task crafting and therefore, the driver for employees to use their autonomy to task craft would be lower. Conversely, higher levels of uncertainty would stimulate employees to use their autonomy to alter aspects of their tasks in order to either enact more effective problem solving, or to enhance their perception of control during the uncertain times (Leach et al., 2013).

However, it appears that this is not the case. Instead, the findings indicate that uncertainty exerts an independent and positive effect on task crafting. This suggests that uncertainty directly creates opportunities for employees to explore and develop new ways of working, and that this relationship is independent of autonomy. Although not as originally predicted, this association is consistent with recent findings that task crafting is evident under conditions of both high and low autonomy (McClelland *et al*., 2014). In other words, a possibility to consider is that uncertainty creates a context in which individuals can satisfy, for instance, their need for control through task crafting irrespective of autonomy (Wrzesniewski & Dutton, 2001). The association between task crafting and uncertainty is also consistent with Petrou et al.'s (2017) finding of uncertainty acting as a stimulator for role broadening during organizational change, and with Wall et al.'s (1992) finding of low autonomy workers' creativity being stimulated by uncertainty.

This is a new contribution to the existing literature and is an important finding particularly when considered in relation to the positive relationship found between task crafting and promotion. This is because the literature around the effects of uncertainty on creative work behaviours generally views uncertainty in a negative light in relation to performance. For instance, much of the extant literature around uncertainty particularly focuses on uncertainty avoidance, and is predicated on the idea that uncertainty restricts creativity because generally, employees dislike the feeling of uncertainty and will therefore adopt less creative behaviours such as adherence to rules, and seeking management approval to minimise the impact of the uncertainty (Afsar & Masood, 2017). Uncertainty avoidance can therefore be detrimental to performance, as creativity and innovation are reduced. However, effective strategies for overcoming uncertainty avoidance include enhancing autonomy and developing stronger, more trusting relationships between leaders and their subordinates in order that the perception of risk for adopting new approaches is lowered (Leach et al., 2013; Afsar & Masood, 2017; Cordery et al., 2010). Therefore, the extant literature indicates that a positive relationship between uncertainty and task crafting would be contingent on autonomy, LMX and climate. However, these relationships were not indicated or suggested during the model analysis or model improvement processes, despite having LMX and autonomy as other antecedent variables in the model.

It could be therefore, that in relation to task crafting, uncertainty is perceived by employees as a positive opportunity to think flexibly and creatively about their work tasks, irrespective of the amount of autonomy they have, or the quality of their relationship with their leader/manager. This would explain why uncertainty might stimulate task crafting, particularly when considered in relation to the positive motivational drivers for task crafting, such as a desire to improve work meaningfulness or enhance control. Therefore, as highlighted above, although current evidence suggests that enhancing autonomy and building trusting leader-subordinate relationships are important during uncertain times (Leach et al., 2013; Afsar & Masood, 2017; Griffin et al., 2007), my finding suggests that

employees experiencing uncertainty will find a way to creatively adjust their tasks irrespective of whether their level of autonomy or trust in their leaders changes.

As a research contribution, this finding does not refute the existing evidence that enhanced autonomy and good LMX mitigate against the negative effects of uncertainty on performance. However, it offers evidence that uncertainty on its own may positively stimulate creative work behaviours such as task crafting, and therefore, supports the call for a new, more positive lens through which to view the uncertainty-performance relationship (Walk & Handy, 2018). However, there is also a potential avenue for future research to explore whether the direct positive relationship between uncertainty and task crafting is stronger under conditions of higher autonomy or higher quality relationships between leaders and their subordinates.

6.2.3 LMX does not directly stimulate task crafting

Contrary to expectations, the final model confirmed that LMX does not act as a direct antecedent of task crafting. Instead, LMX exerts influence on task crafting through both autonomy and a climate for crafting. What is surprising about this finding is not that LMX interacts with autonomy and climate, as these are indicated in extant research (Wu & Parker, 2017; Seppala et al., 2011), but that there is no direct relationship between LMX and task crafting. The lack of relationship between LMX and task crafting conflicts with those of Volmer et al., (2012), who find that the there is a positive relationship between LMX and creative work involvement (with which job crafting is, in this study, conceptually aligned) that is moderated by autonomy, such that the relationship is stronger when autonomy is higher. It also conflicts with Van Dam et al.'s (2013) finding of a direct relationship between LMX and job crafting. Thus, my finding indicates that it does not matter how good the employee perceives the quality of their relationship with the manager to be, they still need autonomy, and a positive and supportive climate for crafting to be in place for them to carry out task crafting.

Considering possible explanations for why my result regarding LMX and task crafting differs from the existing evidence warrants a return to my original justification for focusing on task crafting rather than job crafting as a whole. Task crafting is one form of job crafting, alongside cognitive crafting and relational crafting (Wrzesniewski & Dutton, 2001), that has a particular impact on how an employee carries out their work tasks. It is, as has been previously explained, one of the more visible forms of job crafting because it involves making changes to one's tasks. However, the existing research into LMX and job crafting has not separated out these three dimensions of job crafting, instead considering job crafting as a unidimensional construct (Van Dam et al., 2013; Volmer et al., 2012). Given the integration of relational crafting into the unidimensional construct, it is not surprising that these two studies find positive associations with LMX. But my finding provides confirmation that considering the different forms of job crafting independently is important because the antecedents clearly differ. My specific finding about LMX and task crafting makes a new contribution to job crafting theory, and the more general finding of the need to consider the job crafting dimensions independently makes an additional contribution to job crafting research approaches.

Nevertheless, it is also worth considering whether the use of the shortened scale in my modelling has contributed towards the different findings in previous studies regarding the relationship between LMX and job crafting. Reviewing the existing studies which explored LMX, the Van Dam et al (2013) study also used a Dutch version of Graen and Uhl-Bien's (1995) LMX-7 scale, which returned a Cronbach Alpha of .93, compared with the three item scale used in my study, which returned a Cronbach Alpha reliability score of .91. However, the study carried out by Volmer et al (2012), again using the full Graen and Uhl-Bien's (1995) LMX-7 scale returned a Cronbach Alpha of .86. Thus, the reliability score for the shortened scale in my study is not outside of the normal range for this measure and therefore, I am confident that the use of the shortened scale is unlikely to have caused the difference in

relationship found between LMX and task crafting, compared with LMX and job crafting in previous studies.

6.2.4 A climate for crafting enables task crafting

This study is the first that I am aware of to examine the possibility of a climate for crafting in relation to either job or task crafting. The positive association between climate for crafting and task crafting implies that participants were able to recognize such a climate, and that they may make changes to their tasks if they see that 'doing things differently' is a normal and acceptable work behaviour. In common with other climate conceptualizations, the acceptability of 'doing things differently' creates a perception of safety whereby employees feel able to act in different and creative ways (Anderson & West, 1998). While emerging research demonstrates that collaborative or team crafting can take place (Leana et al., 2009; McClelland et al., 2014), which implies the existence of shared crafting norms, I contend that this study presents the first supporting empirical evidence for such a climate.

On a practical level, implementing actions to create a supportive climate for crafting may involve a deliberate change of work culture, to create a culture where exploration and failure as well as successes are seen as positive. Within this, modelling as an important element of developing a social norm for a particular set of behaviours is important. Thus, employees and managers could look for opportunities to model task crafting behaviour, and, in the presence of positive responses, a supportive climate for such behaviour will develop.

6.2.5 LMX, autonomy and climate interact as antecedents of task crafting

The finding that LMX is positively associated with both autonomy and climate for crafting but not with task crafting was also contrary to hypothesised expectations, but offers a new contribution to job crafting theory in relation to known antecedents of task crafting. The final model shows that, rather than standing alone as independent antecedents, autonomy, LMX and climate interact with each other as antecedents of task crafting. The interaction

between these three antecedents support the evidence of a climate for crafting, because it suggests that quality LMX contributes towards creating the space and climate that indirectly facilitates task crafting. This pathway is to some extent consistent with previous studies indicating that when positive and trusting relationships between managers and subordinates exist, it becomes *normal* for employees to work creatively and to adjust their tasks to enhance engagement (Tierney, 1999; Todera & Gonzalez-Roma, 2013). It is also consistent with previous research which shows that LMX, autonomy and climate interact (Wu & Parker, 2017; Seppala et al., 2011).

Considering these findings, autonomy is already established as an antecedent of job, and by inference rather than evidence, task crafting (Lyons, 2008; Leana et al., 2009; Petrou et al., 2012). The desire for greater control over one's work is strongly positioned as a key fundamental driver in job crafting theory (Wrzesniewski & Dutton, 2001). Early evidence shows that although high levels of autonomy are not necessarily needed to enact task crafting (McClelland et al., 2014), some autonomy is essential. The finding of a positive relationship between autonomy and task crafting in the final model firstly confirms the importance of autonomy for task crafting. However, by considering a broader range of antecedents, this study adds a deeper level of understanding to this relationship, showing that perceived autonomy is also related to the quality of relationships that employees feel they have with their leaders/managers, and to the development of work behaviour norms, as in a climate for crafting. This finding links back to good management practices. If managers design jobs which give employees autonomy, and at the same time, in their management practice, both model task crafting and recognise and reward task crafting behaviours, they will provide a structural and job design environment in which task crafting occurs. However, the extent to which managers want to encourage task crafting may be context specific. For instance, in contexts where creative thinking and behaviours are important, autonomy, good LMX and creating a work climate where it is acceptable to do things differently may be a good combined strategy for enhancing employee performance through task crafting.

6.2.6   Managerial implications of LMX, autonomy and climate interaction

Even though task crafting is an employee initiated and bottom up strategy for job design, the finding of a positive relationship between task crafting and both LMX, autonomy and climate for crafting indicates that managers have a crucial role in creating the work environment that enables task crafting to take place.

The positive and time-lagged relationship between task crafting and promotion suggests that task crafting creates a win-win scenario for individual employees and for organizations. Specifically, the findings suggest that employers should be aware of task crafting and should strive to provide a working environment that encourages and supports it to enhance their employees' engagement and subsequent promotion prospects. As McClelland *et al.* (2014) highlight, such awareness can be integrated into a range of management training opportunities, focusing on issues such as facilitative leadership, team leadership, and team cohesion.

However, as well as being aware of the benefits of task crafting, managers have a role in creating a climate where employees feel psychologically safe to do things differently, and there are a number of ways that this might be achieved. For instance, training programs that focus on identifying and differentiating between performance and mastery goals, and developing the ability of managers to articulate such goals to their subordinates, could contribute toward a positive climate for crafting. Such training programs have been found to increase tolerance and acceptability of risk taking and its potential for error (Ashauer & Macan, 2013), for instance. Information exchange more generally has been found to enhance the development of a psychologically safe climate for creativity at work, building trust between colleagues and also between leaders and their subordinates (Gong, Cheung, Wang, & Huang, 2012). Therefore, training managers and supervisors about how to build work structures to enable sharing of information between colleagues could contribute to both

fostering high quality LMX and developing a climate where creative activities such as task crafting are accepted.

One other possible implication of this finding relates to the importance of managers in enabling and facilitating task crafting. It may be that job crafting theory now needs to be considered from a more holistic perspective, taking account of the external structural and behavioural factors which enable it. This would represent an evolution of job crafting theory, and is entirely consistent with the job design theories which strongly integrate consideration of the role of the organisation in enabling good job design. Going back to the core principles of job design as a means of enhancing individual and organisation performance, the finding of task crafting as a predictor of promotion indicates that creating a work environment and climate where task crafting is enabled would be good job design.

6.3   CAREER DEVELOPMENT IMPLICATIONS OF THE NEW MODEL

6.3.1   Implications of task crafting leading to promotion

The literature review chapters of this thesis explained that career development and task crafting share common underpinning concepts. The review also argued that task crafting type actions are already alluded to in a number of career development theories. My finding of a positive relationship between task crafting and promotion moves this aspect of career development theory on from allusion to evidence, by identifying task crafting as a specific action that can be taken by employees to enhance their careers.

Considering the implications of this finding in relation to the application of career development theories, as has already been shown, the theoretical space for proactive and adaptive actions such as task crafting are apparent across a number of theories. My study adds a level of detail to the practical actions that can be taken that is not yet integrated. For example, within the Theory of Work Adjustment (Dawis, 2002), task crafting typifies the

implementation of actions based on the attitudes of flexibility, adjustment and perseverance that are key attitudinal dimensions within the theory. For Career Construction Theory (CCT) (Savickas, 2005), task crafting is a viable expression of the tendencies towards action that are identified in the theory. For the Career Self-Management model of Social Cognitive Career Theory (Lent & Brown, 2013; Lent et al., 2016; Lent et al., 1994), one of the few career development models to explicitly identify actual behaviours that may result in benefits to career development, task crafting extends the range of adaptive behaviours already identified in the model. Thus, one contribution of the finding in relation to career development is in the specific identification of task crafting as a career development action.

Thus, the new model makes two key contributions to the existing knowledge base, with regards to career development. First, the findings formally link the literatures around task crafting, performance, employee visibility and appraisal. Second, they implicate task crafting in career development theory and activity. Each of these contributions will now be discussed in turn.

Whilst consideration of the individual antecedents makes a positive contribution to the job crafting literature, a more nuanced understanding of how these antecedents contribute towards improving promotion prospects can be gleaned from considering the model as a whole.

6.3.2   Implications of the final model for career development

Taking a holistic approach, the final model suggests that managers have a role in creating a work environment that facilitates task crafting, and therefore in enhancing promotion prospects. The findings around antecedents suggest that a manager's contribution towards creating such a work environment operates through three pathways. First, the model suggests that embedding autonomy in job design is important. Second, the findings of a

relationship between LMX and Climate suggest that managers' behaviour is an important contributor to task crafting behaviour. Finally, managers need to understand that the work context also influences task crafting such that during times of uncertainty, employees are more likely to task craft.

Relating these three suggestions back to the existing literature base, the finding of a positive link between LMX, autonomy, climate, and the subsequent impact of this on task crafting and promotion complements the LMX literature in that higher quality interactions have been found to relate positively to perceptions of trust, psychological safety for proactivity and innovation (reflected in the model as a climate for crafting), and perceptions of autonomy (Dienesch & Liden, 1986; Volmer et al., 2012).

Crucially, the relationships that managers form with their subordinates appear to be central to career development within the existing literature. For example, the role of managers is evident in regard to organizational career development (OCD) practices, wherein the aim is to provide a supportive work environment to enhance employees' career development. OCD practices include: stretching employees through giving them challenging work assignments (Bambacas & Bordia, 2009), providing job enrichment (Parker, 1998), providing career counselling as well as ensuring employees are kept informed about career development opportunities (Bambacas & Bordia, 2009), and providing employment policies that recognize the interacting nature of work and family life on career progression (Litano & Major, 2016). Managers are also integral to career self-management (CSM), where the aim is to develop employees' skills to manage their own careers. Mechanisms for doing this include acting as a positive role model (Gibson, 2004), mentoring or transformational leadership (Scandura & Williams, 2004), practicing 'caring' leadership to develop an employees' attachment to or trust in their manager (Crawshaw & Game, 2015; Scandura & Schriesheim, 1994)), practicing fair promotion practices to enhance employee proactivity (Crawshaw et al., 2012), and practicing family-supportive supervisor behavior to build

quality LMX and enable employees to manage their careers over changing life-events (Litano & Major, 2016).

Despite this wealth of research evidence, the role of managers in career development theories is understated. Typically, the focus of such theories is on individual employees and the actions they take to enhance their own careers. For instance, the theory of work adjustment (TWA) describes career choices and career development as a dynamic accommodation process in which an individual seeks to find work that matches his/her needs and, simultaneously, an organization (managers) seek to find employees who can meet its needs (Dawis, 2002). Thus, the level of fit between the employee and organisation is mutually important. However, when examining adjustments made to improve this fit, TWA focuses on employees and the adjustments they can make. For instance, the theory describes four types of adjustment style that employees might adopt to improve their perceived level of fit, namely flexibility, activeness, reactiveness, and perseverance. This focus on employee adjustments has persisted in more recent studies. For instance, Bayl-Smith and Griffin (2015) found that conscientiousness and extroversion relate positively to the way that employees engage with their work, in terms of pace, rhythm, and endurance. Furthermore, Dahling and Librizzi (2015) extended TWA further, finding that avoidant and anxious attachment styles influenced employees' perceptions of fit and subsequent turnover intention, although the relationship was weak. Thus, the TWA and recent extensions do not explicitly consider the role of managers in improving the fit between employees and the organization.

Social cognitive career theory (SCCT) also acknowledges the importance of the relationship between employees and their organizations and managers (Lent et al., 1994). The performance model in particular focuses on the role of feedback in determining performance self-efficacy (Brown, S.D. et al., 2011), and although not acknowledged in the articulation of SCCT, managers are a critical source of feedback and support that has been found to relate positively to self-efficacy (Chong & Xiaofang, 2010). The fourth model of SCCT – career

self-management – does explicitly acknowledge the influence of contextual support, such as access to mentors or access to career information, and also acknowledges the influence of barriers to career exploration and decision-making, but again focuses on the employees' actions rather than extending this to include the actions of managers (Lent et al., 2016).

In common with TWA, although all four models within SCCT theory acknowledge of the role of managers, the dominant focus for action remains with employees. This includes a focus on employees' perceptions of the organizational context, their personality traits, and their career decision-making actions. The role and responsibility of managers in creating an enabling environment is understated. Other career development theories such as the self-concept theory of career development (Savickas, 2005; Super, 1992) and the theory of vocational personalities in work environment (Holland, 1997) also acknowledge the importance of context, but explicitly focus on the individual and, as such, are used to inform career development planning and career development guidance. Again, the role of managers is not addressed in these theories.

Essentially, although existing research shows that both employee and manager behaviours influence career development, career development theories frequently only consider employee-related changes and behaviours. In finding task crafting predicts promotion and in that, in turn, LMX, perceptions of a climate for crafting, and autonomy relate to task crafting, the final model suggests the need for greater focus on the key role of managers in career development theories. Indeed, including the role of managers should help develop more holistic theories of career development that can incorporate evidence from the LMX, OCD and CSM literature. This will then provide organizations with a balanced theoretical framework that can be used to enhance employee promotion.

6.4 **REFLECTIONS AND LIMITATIONS**

The next section presents my reflections on the research process, including consideration of the decisions made in choosing the organisational focus for the study, an exploration of the implications arising from the varied response patterns, and consideration of the impact of attrition on the strength of the study findings. The section concludes with a reflection on the influence of the decisions made in designing and using the survey instrument, providing a clear pathway into an exploration of future research possibilities.

6.4.1 Reflections on respondent demographics and attrition

6.4.1.1 Implications of researching the Higher Education sector

Reflecting on the use of the university sector for this research, although the research involved participants from just one employment sector which may restrict the transferability of the results to the wide working population, the use of a university sector sample was appropriate for this study because it comprises a range of employment groups, with a diversity of job roles and autonomy that can translate across different employment sectors. For instance, the study sample included ancillary staff such as cleaners, catering staff, and security staff, all roles that are not industry specific. However, despite providing paper copies of the survey for staff whose daily roles did not involve computers, responses from staff in this group were small, when compared with responses from staff working more regularly on computers (10.8% at Time 1, 12.7% at Time 2). These staff tended to be those who were in lower grade roles, such as ancillary roles, who are traditionally viewed as having lower levels of autonomy. Thus, the results may not be representative of staff in these lower grade roles. That is not to say however, that staff who work in these roles do not task craft, as is shown by McClelland et al (2014). Future research therefore, could specifically focus on this series of antecedents and career development outcomes that are relevant to different job roles, for staff who work in manual and ancillary occupations.

However, the focus on large employers in this study may affect promotion prospects, as there are greater opportunities for promotion within larger employers. Therefore, the findings may not be applicable to smaller employers, where both staff turnover is lower and where promotion prospects may be more limited. With this in mind, future research could broaden the outcomes considered, to include other forms of career development such as role broadening or increased responsibility.

6.4.1.2 *Reflections on sample size*

The sample size for the study was sufficiently large to meet the criteria for carrying out structural equation modelling (SEM), and as such, has enabled the analysis to be conducted using sophisticated and innovative analytical tools, including Bayesian Estimation (BE). This has resulted in the study being able to consider the complexity of relationships between variables within the model (Tomarkin & Waller, 2005; Zyphur & Oswald, 2015). The integration of SEM and BE is extremely rare within studies of this type, with BE in particular only recently beginning to be considered and used within psychology studies in general (Kruschke et al., 2012; Van de Schoot et al., 2017). As such, the analysis used in this study presents a novel approach to analysis within the field of both job crafting and work psychology.

However, although meeting the criteria for SEM, the sample size is still relatively small, and one implication of this can be interpreted from the size of the relationships found between study variables in the correlation analysis (see Tables 17 and 19, Section 5.2). With the exception of the moderate relationships between LMX and autonomy, LMX and climate, and climate and autonomy, all of the other significantly positive correlations in the study were small, including the relationships between task crafting and the study correlates, as well as between task crafting and promotion as the outcome variable. Goodwin and Leach (2006) identify six measurement and response distribution errors that can result in small correlation coefficients, and highlight that the effect of any one of these can be exacerbated

by a smaller sample size. These include a lack of variability in the data, dissimilar marginal distributions, non-linear or curvilinear relationships between variables, outliers in the variables, low measurement reliability, and unique sample characteristics (Goodwin & Leach, 2006).

Reviewing each of these in turn, the reliability scores for the measurement scales were all above acceptable thresholds. There were no outliers in the data as these had been normalised as part of the data cleaning processes. Additionally, due to the inclusion of varying job categories within the study, the potential for both limited variability in the data, and for the sample to have unique characteristics, was low. The risk of this could have been higher had only one job category been used in the study. For instance, academic and research staff have higher levels of autonomy than staff in clerical/ancillary and technical roles and thus, had the study only included academic and research staff, a low level of variability and a high level of unique characteristics of the respondents in this sample might have been expected. Thus, the only potential causes for error that have not been examined are the marginal distributions and the linearity of relationships between variables. Strengthening the confidence of the findings by subjecting the data to analysis of these features would enable confident inclusion or exclusion of these aspects as contributing towards the size of correlations found. Alternatively, a larger sample size would also have minimised the potential effect of any of these aspects.

However, rather than concluding that the risk of the two errors above undermines the findings of positive, albeit small, correlations between study variables, the analytical method can also be evaluated in relation to its contribution to validating the results. Returning back to the method of analysis of the models, the use of Bayesian Estimation is an analytical method which minimises error when analysing results of varying sample sizes (Zyphur & Oswald, 2015). The alignment of the results from both maximum-likelihood estimation and Bayesian Estimation means that the correlations found can be interpreted with confidence,

rather than being questioned as being overly influenced by error (Gelman et al., 2004; Van de Schoot & Depaoli, 2014; Zyphur & Oswald, 2015).

6.4.1.3 *Consideration of significant variations in responses across job roles*

Analysis of respondent demographics showed only one significant gender difference in responses that related to job category, with more women than men in the professional/administrative job category completing the survey (see Table 10, Section 5.1.4.1). While at first sight, this gender difference appears to reflect the gender distribution for non-academic staff in professional occupations (HESA, 2016), the classification for professional occupations used by Higher Education Statistics Agency (HESA) differs from those used in this study, with HESA including technical occupations within the 'professional' job category. Within this study, technical occupations were included within the clerical/technical/ancillary staff grouping. While this may not have had any direct impact on the validity of the study findings, the generalisability of the findings related to staff category may not be as robust as it could be. Future research could more closely align with the HESA or sector specific job categories to increase the confidence in the generalisability of findings. However, further gender analysis showed no significant differences related to any of the other study variables.

The demographic analysis does, however, show differences in responses relating to the study variables by job category. For instance, the difference between academic/research staff scores for LMX, task crafting, and climate for crafting were significantly different from the other staff group responses. For LMX, the academic/research staff group mean score was lower than for the other for professional/administrative staff, indicating that this staff group reports a significantly poorer relationship with their managers than staff in the other categories. This finding is consistent with the findings from a UCU survey of work related stress in higher education, which, although finding that academic staff have high levels of

autonomy in their roles, report lower levels of management support than for staff in non-academic job categories (UCU, 2013). However, it is important not to overstate the negative interpretation of this finding, as the mean score for LMX for academic staff is near to the mid-point of the scale, at M = 3.50 on a 1-7 scale, whereas for professional/administrative staff, the mean score for LMX was M = 3.92. Thus, whilst the score is lower for academic staff than for professional/administrative staff, both mean scores are just slightly below the mid point on the scale, meaning that academic/research staff rate their relationships with their line managers as *relatively* worse than for professional/administrative staff.

Interpretation of this finding in relation to other significant differences in mean scores for study variables by staff group does not show any particular patterns. For example, the academic/research staff mean score for task crafting is significantly higher than the clerical/technical/ancillary staff mean score for task crafting. It would make sense to interpret this as academic staff task crafting as a means to overcome the barriers posed by poorer relationships with their line managers, as is suggested by Berg et al. (2010). However, if this was the case, firstly, one would expect to see the significantly lower mean score for LMX for clerical/technical/ancillary staff than for professional/administrative staff also translate to a significantly higher mean score for task crafting for clerical/technical/ancillary staff in this pairing. However, the results show the opposite, that clerical/technical/ancillary staff mean score is significantly lower for task crafting than for professional/administrative staff. Thus the relationship here does not appear to support task crafting being a means to overcome poor relationships with line managers. Secondly, one might expect to see a significant pathway between LMX and task crafting emerging from the study modelling, irrespective of whether it was a positive or a negative relationship. However the final model that emerged from this repeatedly confirmed a lack of direct relationship between LMX and task crafting (see Figure 13, Final Model 1).

These findings showing different relationships between task crafting and LMX depending on staff job category indicate that further research is needed into the way that staff of different ranks carry out task crafting, as they contradict current evidence linking LMX with job crafting (Van Dam et al., 2013).

6.4.1.4 Respondent attrition

A key positive feature of this study is its time-lagged design, increasing confidence in the causal nature of the relationship between task crafting and promotion, thus overcoming the drawbacks of using cross-sectional research only. However, the use of a time-lagged second survey introduced the potential for attrition, and consequently, attrition bias must be considered. Of the 241 respondents who completed the Time 1 survey, 101 completed the follow up survey at Time 2. This represents an attrition rate of 58.09%. This was despite a proactive survey communication strategy which included anonymising the survey responses through the use of unique identification numbers, personalised email requests, and repeated reminders for survey completion.

Attrition is a common problem with online surveys, particularly for studies that are longitudinal or which have a time-lagged element (Lynne, 2017), as in this study. Research exploring the characteristics of attritees (those who do not complete subsequently timed elements of a research study), finds that older people, minority ethnic respondents and males are more likely to fail to respond to a subsequent survey. However, those with higher education levels, and higher income levels are less likely to drop out (Olson & Witt, 2011). Furthermore, Spitzmuller et al (2007) finds that organisational citizenship behaviour (OCB) research is particularly vulnerable to attrition, concluding that people who have low propensity for OCB's may not complete surveys. Whether this reluctance to complete all timed elements of a study extends across the broader organisational psychology research field, as has been explored in this study, is not as yet known. Attrition is potentially

problematic as it introduces an additional element of bias into the responses, such that spread of responses for full-completers that are included in analysis may not represent the responses of the full cohort (Ward et al, 2017). To evaluate the potential for attrition bias, the strategy proposed by Miller and Wright (1995) was adopted in this study, with comparison of responses for the main study variables for those who did and did not complete the Time 2 study. This analysis showed that the only significant difference between the two groups was for age, which conforms with one of the known attrition groups identified by Olson and Witt (2011). None of the study variables of LMX, task crafting, autonomy, climate or uncertainty differed significantly between the attrition and non-attrition group and thus, the impact of attrition bias can be evaluated as minimal. However, the high level of Time 2 attrition means that the time-lagged analysis was based on 41% of original survey respondents only and thus, future research which may seek to consolidate or confirm the finding of a link between task crafting and promotion may need to either consider alternative strategies for reducing attrition, or may need to gather a larger initial respondent group, to enable full structural equation modelling to be carried out which incorporates the time-lagged outcome of promotion.

6.4.2   Reflections on methodological approach and methods used

6.4.2.1   *Clear strategy for limiting the effects of bias*

Methodologically, the study has a key strength in the utilisation of strategies to overcome bias. All of the measures used in this study were self-rated, which raises the possibility of common method bias due to either common rater effect or item characteristic effect (Podsakoff, Whiting, Welsh, & Mai, 2013). These effects can potentially inflate correlations, which can produce misleading conclusions (Podsakoff *et al.*, 2013). To minimize this potential bias, I implemented both procedural and statistical remedies, and these are explained within the methodology chapter. Thus, although only self-rated measures were

used, I am confident that the steps taken to minimise bias mean that this has not had a negative effect on the data analysed.

6.4.2.2 *Limitations concerning study measures*

There are some limitations that concern the study measures. First, the study used shortened versions of fully validated questionnaires for LMX and autonomy in the structural equation modelling, rather than using the whole questionnaire. However, additional correlation analysis using the fully validated instruments demonstrated that the effect of this on the scale reliability was small, with a very slight weakening of the Cronbach Alpha reliability score for the shortened scale compared with the full scale for both measures. The difference in means scores for the two different scales was however significant when analysed using a *t*-test for both scales (see Table 18). What this may indicate is that the use of the shortened scale may have slightly reduced the strength of the correlation between the study variables and task crafting, because the shortened scale reliability scores were lower. While this use of shortened scales may compromise the validity of the measures used, the procedures for selecting the items were robust. The reliability score for each of the latent constructs for the shortened scales were above acceptable thresholds, and confirmatory factor analysis confirmed the independent construct validity for each of the measures in the questionnaire (Robinson, 2018). This approach is not uncommon in organisational behaviour research and was in part influenced by sample size and parameter requirements for structural equation modelling. Future research with a larger sample could integrate use of the whole validated instruments for each of the latent constructs, which would contribute towards confirming the findings from this study, and would also contribute towards further validation of the measures used.

Second, promotion was measured using a dichotomous measure which only measured whether an individual had or had not been promoted. While this measure was appropriate for the study, given the nascence of this research pathway, there are some particular issues to

consider that may be addressed in future research. The first issue arises as a result of the formality of applications for promotion within the HE sector (see Appendix B for synthesis of application processes). Consistently, across the HE policies reviewed, promotion processes are formally and institutionally initiated, often with a set timeframe (for instance once per year). Achievement of promotion is determined by organisational needs, and therefore may not be available to all. Additionally, when it is available, the process is time-consuming, formal, and assessed via a number of formal panels and application stages. These aspects indicate that achieving promotion may be difficult, and that not all applicants for promotion may achieve the promotion they are aiming for. This study, in focusing only on promotion as an outcome, is not able to take account of this difficulty of access to promotion. Indeed, the formality and difficulty of access may, in fact, prevent employees from applying for promotion at all. Thus, although the promotion rates seen in this study (ranging from 7.7% to 11.8% across the different job categories at Time 2) are broadly in-line with data on general promotions rates (average 6% promotion rate (SHRM, 2017)), a broader measure exploring career advancement or role breadth enlargement as other indicators of promotion could have overcome the constraint imposed by limited actual promotion opportunities. In this way, the study would have been able to capture broader elements of promotion and consequently, the findings could have more accurately reflected opportunities that might arise as a result of the role broadening that is fundamental to task crafting activity. Additionally, a wider concept of promotion might also have enabled the findings of this research to be more translatable to other employers outside of the higher education sector, including smaller employers, with more restricted opportunities for promotion.

It is also worth considering the impact of the time-lag between Time 1 and Time 2 in the study, in relation to promotion opportunities. As has been shown above, within the HE sector, promotion is a formally time-managed process. Across all of the HEI policies reviewed in Appendix B, all but one were based on an institutionally determined time period

for promotion, often once per year. While the six month time lag between the first stage of data collection and the second did accommodate a one-year period due to the survey asking respondents whether they had been promoted in the last six months, if a respondent had begun a promotions process close to the Time 2 data collection point, the formality and lengthiness of promotions processes within HEI's could have meant that the actual opportunity for promotion did not achieve its conclusion over this time period. This is consistent with Wiley et al,'s (2016) finding on the complexity of promotion processes. Thus, respondents to this study may not have had completed an opportunity for promotion. Both of these limitations of using a single dichotomous measure for promotion could have been overcome by using more complex measures of role advancement and role broadening and this is a key area for future research, to build on the initial findings from this study.

Third, the study did not repeat all of the measures at time 2, measuring only promotion at this time interval. It would have been helpful to have measured the other variables as this then would have given the ability to explore time-lagged relationships between more of the variables in the study. This would also have enabled reverse causality to be tested in a cross-lagged way, rather than using the alternative model approach integrated into the analysis here. However, as this study is the first to test a relationship between task crafting and promotion, exploring the nuances in this relationship is now a valid area for future research that will be discussed in the future research section.

With regards to the analytical process, the use of structural equation modelling (SEM) as the key analytical method was justified and appropriate in relation to the positivist nature of the study. The ability of SEM to identify effect sizes for the individual variables in the model as well as being able to provide an overall evaluation of the fit of the whole model to the data, enabled the complexity of relationships between the model variables to be examined (Tomarken & Waller, 2005). As a result, it is a widely accepted method of model analysis and is used across organisational behaviour, organisational psychology, and job crafting

research. (c.f. Lin, B. et al., 2017; McClelland et al., 2014; Slemp & Vella-Brodrick, 2014). However, SEM is not without its limitations, and within this study, these related particularly to the interaction/moderation effects analysed. One of the original hypotheses for this study was a moderation relationship, with uncertainty moderating the effect between autonomy and task crafting. In order to carry out this analysis, despite having observed variables representing both uncertainty and autonomy, the modelling tool (AMOS™) required the use of latent variables calculated as a mean composite score of the observed variables. However, although the strength of SEM able to accommodate complex latent and observed variables would appear to have been undermined by using latent variables in the interaction analysis, the use of Preacher and Hayes (Field, 2015, p393) PROCESS moderation tool offered an up-to-date way of carrying out interaction analysis in SEM which utilised bootstrapping. This process overcomes the reported limitation of low reliability with interaction terms which are seen in traditional regression analysis (Tomarken & Waller, 2005).

6.5   FUTURE RESEARCH

To date, this study is unique in linking task crafting with promotion. Within my literature review, I justified this proposition on the basis that task crafting has potential to enhance performance and consequently, this improvement is likely to be noticed by those involved in making promotion decisions. My examination of a direct link from task crafting to promotion is an important first step in order to establish that a main effect exists. This then forms a clear starting point from which to consider the mechanisms which may link task and performance improvement, as task performance improvement may be exhibited in a variety of ways. In the following section therefore, I present some initial ideas for future research that have arisen from consideration of the strengths, limitations and implications of the findings in this study.

6.5.1 Exploring visibility

First, in seeking to explain the positive relationship between task crafting and promotion, I have suggested in the literature review and theory chapters that it is the result of the enhanced visibility that task crafting provides. However, in this study, I did not measure such visibility. To examine this assumption, it would be worthwhile to assess managers' perceptions of their employees' work behaviours, such as creativity, OCBOs, performance, person-job fit, and affect. This could involve the use of a composite measure such as that used by Oh et al. (2015), who combined measures from managers rating employees' OCB, performance (individual and group), and LMX, in order to evaluate whether a managers' current work priorities affected the extent to which they noticed and positively appraised these employee behaviours. Whilst the Oh et al. (2015) study focused on variations in managers' ability to notice employee behaviours, the composite method of gathering information about employee behaviour used in this study is nevertheless appropriate, and could be broadened to include additional measures such as creativity as this is implicated in the exploration of mechanisms linking task crafting and promotion, and is also strongly implemented in task performance (Zhou & George, 2001; Chae & Choi, 2018). Engagement in task crafting could then be related to such perceptions and promotion outcomes; that is, an examination of the extent to which managers' perceptions mediate the relationship between task crafting and promotion could be conducted. Furthermore, this assessment would permit examination of whether a specific type(s) of crafting-related outcome (managers' perceptions) is more predictive of promotion than other types and whether synergistic relationships exist between the types (e.g., task performance $\times$ creativity in predicting promotion). The latter analysis would take the form of mediated moderation (Muller et al., 2005).

6.5.2 Creativity

Drawing on extant literature, performance improvement operates through a range of pathways, one of which is via creativity (Heffernan et al., 2016). There is already strong evidence from a recent meta-analysis which shows that creativity is positively associated with both enhanced task performance at work (Harari et al., 2016), and enhanced academic performance in school pupils (Mourgues et al., 2016). In an exploration of the pathways by which creativity leads to enhanced performance, Pacauskas and Rajala (2017) find that creativity enhances concentration and flow, each of which lower cognitive loading, and consequently, when cognitive loading is lowered through being creative, performance is enhanced.

This relationship between creativity and enhanced task performance is relevant to employee promotion because employee creativity has been found to lead to positive supervisory appraisals of performance (Shin et al., 2015). Task crafting is associated with creativity in a number of ways. For example, in order to carry out task crafting, an employee has to engage in creative thinking, as they look for ways to adjust their tasks to enhance their performance, their enjoyment or their work meaningfulness (Wrzesniewski & Dutton, 2001). Furthermore, in addition to creative thinking being an antecedent of task crafting, recent research also shows that creativity is an outcome of task crafting (Lin et al., 2017). Thus, if creativity results in positive supervisory appraisals, and task crafting is positively associated with creativity, this could be one explanation for the finding of a positive relationship between task crafting and promotion. The proposition here is that creativity may mediate the task crafting to performance relationship.

6.5.3 Self-efficacy

In addition to the impact of creativity, self-efficacy has also long been associated with enhanced task performance (Prussia et al., 1998; Stajkovic & Luthans, 1998; Bandura & Locke, 2003), with recent evidence indicating that this is particularly true when an

employees' trust in their organisation is high (Ozyilmaz et al., 2018). Recent studies find task crafting enhances self-efficacy. For instance, Miraglia et al (2017) find that when employees task craft by taking on more attractive projects, increasing their innovation and adopting extra tasks, their feeling of self-efficacy is enhanced. This indicates that an employee who is task crafting has identified a problem or challenge, developed a solution and has taken steps to implement the solution. As a result of this, their perceptions about the control they have over their job may be enhanced, their sense of self-belief in being able to make changes to their job may be enhanced, and their feeling of identity in relation to their job may be increased. Collaborative task crafting (at team level) has also been shown to improve independent [supervisor] ratings of team performance, and efficacy is implicated in this process (McClelland et al., 2014). The relationship between self-efficacy and supervisor appraisals of performance is particularly evident in the finding that employees with higher levels of self-efficacy are more positively appraised when they carry out adaptive and proactive behaviours than those with lower levels of self-efficacy (Nguyen et al., 2017). Thus, because enhanced self-efficacy results in both improved task performance and positive supervisory appraisals of performance, and task crafting enhances self-efficacy, self-efficacy could act also as a mediator between task crafting and performance improvement.

6.5.4   Intrinsic needs satisfaction

Another important mechanism in task performance improvement is the extent to which an employee feels that their job is satisfying their needs. Self-Determination Theory (SDT) proposes that when an employee's intrinsic needs for competence, autonomy and relatedness are satisfied, the employee will enjoy their job more, and their performance will be enhanced (Deci & Ryan, 1985; Deci et al., 2017). This is particularly true for task performance (Baard et al., 2004). Linking SDT with task crafting, an employee's independent initiation and completion of task crafting, through taking on additional tasks, or changing the number or scope of tasks, not only requires autonomy, but also enhances employees' perceptions of autonomy (Slemp & Vella-Brodrick, 2014; McClelland et al., 2014). Further qualitative

accounts of job crafting that are relevant to task crafting indicate that when individuals take on new tasks they enjoy, they become more proficient at those tasks, often ending up as the 'go-to' person for that particular task (Berg et al., 2008), which would enhance their sense of competence.

To date, the only study to explicitly explore the relationship between task crafting and intrinsic needs satisfaction (comprising competence, relatedness and autonomy), found that autonomy and competence are more strongly associated with task crafting, than with relational or cognitive crafting (Slemp & Vella-Brodrick, 2014). With regards to relatedness, task crafting is positively related to organizational citizenship behaviours (OCB's), where employees go above and beyond their role to support and make a positive difference to their colleagues (Lin et al., 2017). This demonstrates the potential for task crafting to fulfil an employee's need to feel a sense of caring, mutual respect and mutual reliance (Deci et al., 2017). Thus, in fulfilling intrinsic needs, task crafting has particular potential to enhance task performance, again providing a possible explanation for the positive relationship found between task crafting and promotion.

6.5.5 Wellbeing

Another mechanism by which task crafting might lead to promotion is found within the evidence linking wellbeing with performance improvement. Positive relationships between wellbeing and performance are seen across a range of studies, many of which include supervisor-rated performance measures (Taris & Schreurs, 2009; Wright, 2010; Daniels & Harris, 2000; Avey et al., 2011). Linking this to task crafting, Tims et al. (2014) find a positive relationship between task crafting, work enjoyment and performance in a study which explores the stability of these relationships by examining daily fluctuations. Additionally, Slemp and Vella-Brodrick (2014) find that task crafting enhances individual wellbeing (Slemp & Vella-Brodrick, 2014). Taken together, this evidence supports the existence of relationships between wellbeing and performance improvement, task crafting

and wellbeing, and the evidence of positive supervisory appraisals associated with these elements indicate that although task crafting itself may not be a visible activity, the task performance related outcomes of task crafting are clearly visible to, and appraised positively by supervisors and managers (Weseler & Niessen, 2016). Again, this mechanism could explain why task crafting leads to promotion.

Providing the first direct evidence of a link between task crafting and promotion opens up opportunities for exploring this pathway further. The suggested areas for future research made above are represented in Figure 20 below.

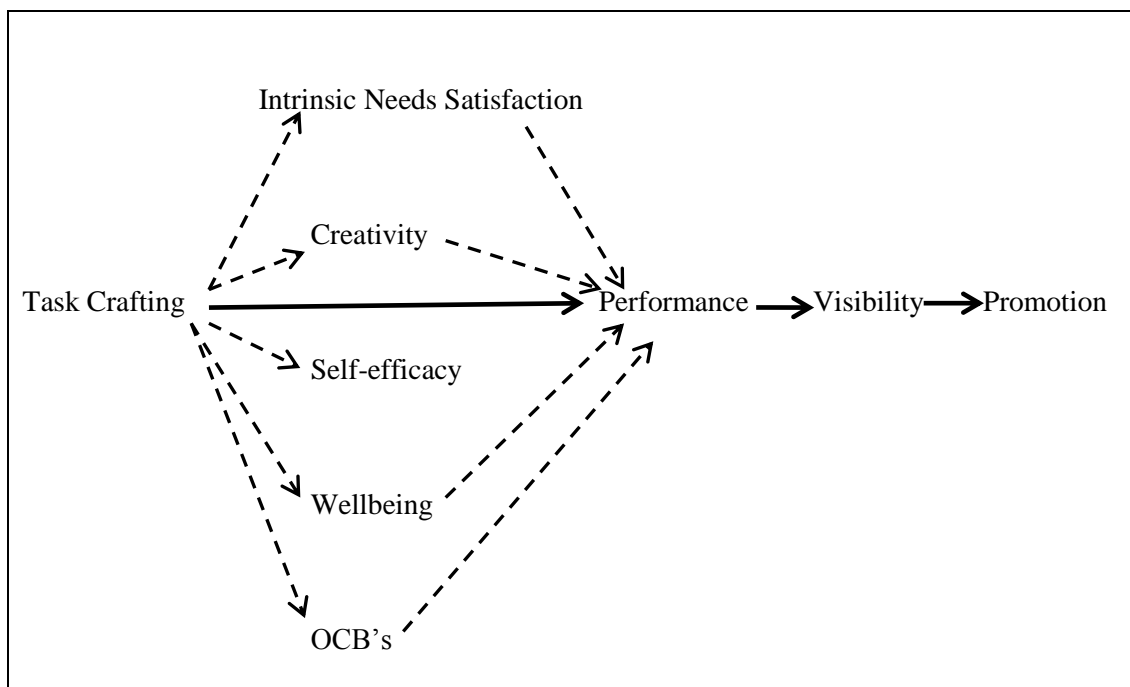**Figure 20: Potential future research pathways**

What this consideration of future research pathways indicates is that there are a number of possible explanations for how task crafting might lead to promotion. The existing evidence indicates that enhanced task performance manifests in a variety of ways, many of which are already associated with task crafting. The larger implications are that for employees, acting

proactively and creatively to change aspects of their tasks puts them in a position whereby career advancement is more likely. For employers, because promotion is normally given to employees who demonstrate that they have potential to work at a higher or more senior level, the finding indicates that task crafting is a desirable behaviour that should be encouraged.

6.5.6   Could task crafting be a deliberate career enhancement strategy?

The finding of a link between making changes to one's tasks and promotion is interesting because task involvement and completion is an important contributor to the formation of a work identity (Smith et al., 2015). Therefore, it could be that an employee who is proactively considering their career development as part of an evaluation of their work identity might be motivated to change elements of their tasks as a way of actively managing their own work identity. Interpreting this finding in relation to the role of work identity as a motivator for work behaviour, job crafting theory suggests that the development of a congruent personal and work identity is an important motivator for job crafting behaviours (Wrzesniewski & Dutton, 2001). Work identity is related to how closely an employee relates to, or identifies with their career or occupation. An employee's sense of work identity shapes the way that they behave at work (Walsh & Gordon, 2008), particularly in relation to task completion, relationship development and negotiation of job roles (Smith et al., 2015). It is formed through evaluation of tasks, evaluation of working relationships, and in how employees negotiate during changes (Smith et al., 2015). It is possible therefore, that task crafting may be enacted as a mechanism for change.

This raises the question of whether promotion is an unintended outcome of task crafting, or whether task crafting is enacted as a deliberate career enhancement strategy. Considering this question, task crafting actions are vaguely identifiable in recent measures of career engagement (Hirschi et al., 2014), within items such as *'to what extent have you assumed duties or positions that will help you progress professionally'* (p579). The focus on 'assumption of duties or positions' indicates that this type of behaviour could be self-

initiated and aligned with task crafting. However, this is just one item in a larger scale of career engagement, and the combination of both duties and positions makes it difficult to closely attribute this behaviour to task crafting. There is also some support for task crafting as a deliberate career enhancement strategy within job rather than task crafting research. For instance, in the Brenninkmeijer and Hekkert-Koning (2015) finding that promotion orientation positively relates to job crafting, and proposal that job crafting should enable employees with a promotion focus to have greater confidence in their career aspirations. However, this proposition has not been explicitly tested within this research study. Accordingly, it would be a worthwhile avenue for future research to explore the extent to which employees strategically job/task craft for career progression purposes, and whether this is motivated by, or affects, evaluations of work identity. This aspect in particular, would benefit from exploratory qualitative research methods as, in contrast to the future research directions proposed in Figure 20 for which established relationships are already known and thus able to be tested using quantitative research, there is currently little understanding of the role of career development as a motivator for job or task crafting activity. Exploratory research using semi-structured interviews would extend understanding of the conceptual framework for job crafting, and the motivational drivers, beyond that which is already known.

6.5.7 Further research into a climate for crafting

Future research could embed the development of this measure following established guidelines for measure development (c.f. Robinson, 2017; Hinkin, 1998; Leach et al., 2012). Adopting this approach would integrate discriminant and construct validity testing. It would also be worthwhile comparing the measure of a climate for crafting with a similar measure such as Team Climate Inventory (Anderson & West, 1996). TCI includes constructs such as psychological safety, which is a core feature of a measure of a climate where new and innovative behaviours are being enacted.

6.5.8 Could task crafting antecedents be part of a positive gains spiral?

Additionally, in the hypothesised model, I positioned autonomy, climate, uncertainty, and LMX as antecedents of task crafting. However, there is emerging evidence that some of these factors might also be outcomes of task crafting. For instance, McClelland *et al*. (2014) found that for teams afforded low autonomy (management practice), engagement in collaborative task crafting was associated with higher levels of team autonomy (member perceptions). This relationship is consistent with Wrzesniewski and Dutton's (2001) conceptualization of job crafting that positions the need for enhanced control as a motivator to job craft. Building on such relationships, a possibility to consider is that there may be potential 'gain spirals'. For instance, in relation to climate for crafting, social norm theory states that when behaviour is normalised, it becomes more widespread (cf., Cialdini & Goldstein, 2004). Thus, if a climate for crafting leads to increased task crafting, the climate would be reinforced. Promotion, or career enhancement, could act to reinforce this relationship and stimulate subsequent task crafting. Alternatively, if higher autonomy gives an employee the space to task craft, which then leads to promotion, it is plausible that the employee's new job would have higher levels of autonomy, which could then support further task crafting. However, to date, no studies have examined whether there are positive gain spirals in relation to either job or task crafting. Longitudinal and diary-based studies would be appropriate methods to explore these potential gain spirals or causal changes over time (see e.g., Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012).

Furthermore, the definition and measurement of task crafting was based on the original Wrzesniewski and Dutton (2001) conceptualisation of job crafting. However, the JD-R conceptualisation utilized by Tims et al. (2012) has within the measurement instrument the ability to differentiate between cognitive, task and relational crafting, and as such, may be a useful extension to this research, which could enable comparison of the outcomes attributable to the different job crafting processes to be explored further.

Additionally, when reviewing actions that are taken by employees to enhance career development, they include things such as networking and relationship management. There are clear parallels with relational crafting here and it is possible that both task and relational crafting are important behaviours in career development planning and advancement. It would be worthwhile extending this research to take account of relational crafting as a means of career development.

6.5.9 Broadening the scope of promotion as an outcome

Finally, as previously highlighted, career progression may not only take the form of promotion (Hoekstra, 2011). It may also include a broadening of roles, or an employee taking on greater responsibility within their role (Russell, Ferris, Thompson, & Sikora, 2016; Weseler & Niessen, 2016). These additional career progression outcomes might arise because employers do not have unlimited promotion vacancies. The emphasis on promotion as the outcome of task crafting does not capture the broader aspects of career development that may represent a more realistic career development trajectory for employees. Examining the impact of task crafting on wider career development outcomes is therefore an important area for future research. While this aspect could be explored using quantitative measures, such as the 'job broadening items' from within the Workplace Bargaining Survey (Allen et al, 1999; DIR, 1995), the potential for small subtleties in role expansion may more effectively be explored using qualitative research methodologies which give an employee the opportunity to explain the nuances in their job changes.

6.6   PERSONAL REFLECTIONS

The completion of this research and associated thesis has taken me seven years, and has been both rewarding and personally challenging. At the outset, I embarked on the thesis to achieve three key goals, each of which was held in equal importance. First, I wanted to

enhance my own experience, knowledge and expertise, both as a researcher and within my academic area of workplace wellbeing so that I could make a positive contribution within my workplace, to colleagues, to students and to my institution. Second, although I had been working within the field of workplace wellbeing for a number of years before embarking on the PhD and was clear about the practical contribution that my work was making to the field of workplace wellbeing, in common with many new researchers, I was in part motivated by a desire to see my work included in and contributing to the academic and theoretical literature base. In effect, I wanted to see if I could find something that nobody else had found and to share that, in the hope of 'changing the world' in some way. Finally, the journey towards and achievement of a PhD has very much been the culmination of a personal educational journey that for me, was late in getting started.

Through completion of the PhD research and writing up this thesis, I have become a more proficient researcher, and a more knowledgeable academic tutor. My critical engagement with literature has increased, as well as my confidence in identifying and considering challenges to current knowledge bases. During my supervision journey, I have experienced a shift from being a junior research partner in the PhD team, taking notes and receiving suggestions, to taking the lead in discussions and both presenting and justifying my ideas with confidence. This transformation did not come early in the PhD process, and in fact it is only in the latter stages of the PhD write up process that I have fully felt myself to be an [almost] equal partner alongside my PhD supervisors. As a mature and fairly confident student from the outset, I was aware that my supervisors may have found me to be a challenging student to supervise. Indeed, at times, I have felt as though my age and work experience have in fact resulted in my supervisors setting a very high bar for me to achieve, which did not necessarily reflect the reality of my experience and skills as a doctoral student. Raising these issues during discussions with my supervisory team resulted in an acknowledgement that my PhD journey and their expectations of me were not always aligned. However, rather than leading to changes in my supervisor's expectations, these

acknowledgements actually enhanced my confidence as my supervisors belief in my ability to operate at a high level was positive. In this respect, I feel I have been fortunate with my supervisory team in that they have guided me on my journey towards academic equality sensitively and supportively.

The biggest challenges have been consistently related to the part-time nature of my study and the consequent impact that part-time study has had on the progress and journey through my PhD. The first challenge arose as a result of the extended timescale of a part-time PhD. For part-time students, there is an increased pressure to disseminate any findings during, rather than after completion of the PhD. This pressure arises because the nature of PhD study is that the study focus needs to be at the forefront of current academic knowledge and thus, the area is developing and emerging. This was particularly true in my study, as the job crafting literature was not widely known when I began the PhD in 2011, but in the intervening seven years, large research groups have been developing knowledge, research, and publishing in the field. This burgeoning of research created a risk of my work not having original value by the time my PhD was completed.

One way of overcoming this is to adopt a strategy of writing for publication whilst completing the PhD. Following guidance from my supervisory team, I adopted this strategy and the process of doing this enhanced the sharpness of my academic writing, and contributed towards the eventual structure of the PhD thesis. Alongside this, I presented my work at conferences including the British Academy of Management (2015), the European Academy of Management (2016), the White Rose Doctoral Conference (2015 and 2016), and delivered research seminars to colleagues at work (2017). I wrote practitioner articles (Aesthetics, 2018, Health and Wellbeing, 2018 in press), and conducted a community research-cafe seminar (2015), as well as delivering staff development workshops during in-house staff wellbeing development days (2016). These practitioner and practically focussed activities were very much influenced by an excellent lecture given by Professor Richard

Thorpe, who put forward what I felt to be an unarguable case for practitioner as well as academic dissemination.

Whilst these activities have very much contributed towards my achieving the practical aims of making a positive difference through my research, I am as yet unpublished within academic literature and at times, balancing the need to write for publication against the need to complete the PhD has been difficult. This experience appears to be common among part-time PhD students, and I have been very supported in making sense of this process by Dr Giles McClelland, who also completed his PhD part-time and enabled me to keep a sense of perspective when the frustration at my lack of progress threatened to overwhelm me. I would like, following completion of the PhD, to find a way of sharing my experiences with other part-time PhD students, to pass on the supportive mentorship that I received from Dr McClelland.

The second challenge relating to the part-time nature of my study has been the impact this has had on the study progress. I made the decision to continue working full-time throughout completing the PhD and, with the support of my employer, was able to ring-fence time for PhD study. However, at times I found thinking theoretically and conceptually challenging when there were large blocks of time in-between each study period, with the result that my progress on the PhD was slower than I anticipated, as each study session had to begin with re-familiarising myself with the study. One advantage to this slower progress however, has been that I have been able to see the development of the job crafting research area over time, and this has shaped my thinking, the development of my model and my consideration of the results. It has also been beneficial as the amount of research into job crafting has grown over the duration of my study, which although potentially enhancing the risk of duplication of my study, has given much more theoretical and contextual scope for considering my findings. Through this period I have also seen the evolution of conceptualisations of job crafting, which has contributed towards enhancing my critical engagement with the research area.

With hindsight, I have benefited as a researcher from the slower pace of study, which has also given me many opportunities to apply my emerging learning in my job role, supporting undergraduate and postgraduate students.

6.7   CONCLUSIONS

Job and task crafting research is gathering momentum across organisational psychology and organisational behaviour research. In this thesis I aimed to explore the correlates of task crafting which applied a new lens to job crafting research. I also aimed to explore the role of task crafting in enhancing promotion prospects.

My study makes five distinct contributions to theory and practice. First, my finding of a positive link between task crafting and promotion makes an important theoretical contribution that affects two literature streams. It contributes to job crafting theory by expanding the known antecedents of task crafting, providing the first evidence of a direct link between task crafting and the performance related outcome of promotion. It also adds additional types of employee actions to career development theories, giving employees some practical strategies that may be effective in enhancing their career development, and signposting managers towards enabling and supporting task crafting behaviours, specifically because promotion represents a positive outcome for both parties.

The other four important contributions are my findings on antecedents of task crafting. First, my finding that uncertainty acts as a direct antecedent of task crafting is a new finding because extant research suggests that creative and proactive behaviours are restricted by uncertainty, an effect that is usually minimised by increasing employee autonomy. My finding of a direct effect suggests that uncertainty need not be viewed as a negative stimulus on adaptive and proactive behaviours, but instead should be viewed as a positive stimulant. Thus, when proactivity and adaptive thinking are needed, uncertainty can be helpful.

Second, contrary to the evidence for job crafting as a whole which indicates that good LMX is an antecedent of job crafting, for task crafting this relationship operates through autonomy. Thus my finding contributes again to job crafting theory by providing evidence that an employee needs *both* good LMX and autonomy to carry out task crafting. This is important practically because if proactive behaviours such as task crafting are required within a job role, then managers need to foster good working relationships *alongside* giving employees autonomy, in order to create the conditions for this to be carried out.

The third contribution to job crafting theory arises as a result of my finding of a different relationship between LMX and task crafting than that which exists for LMX and job crafting. This difference indicates that the three processes of job crafting may have different antecedents, and thus, considering job crafting as a multi rather than unidimensional construct may offer greater insight into the actions and behaviours that support and enable the different elements of job crafting for both employees and for employers.

The fourth contribution from my consideration of antecedents is in the emergent finding of a climate for crafting, which is influenced both by levels of job role autonomy and by the quality of relationships that employees perceive they have with the leaders/managers. Whilst these features are common in other climate research, the identification of a possible new 'climate for crafting' that is distinct from other existing measures of climate offers an important avenue for future research, alongside providing practical actions for managers that may stimulate task crafting to a greater extent.

Taken together, these findings make a valuable contribution to what is currently known about task crafting, and offer a number of potential avenues for future research. I hope that my study will broaden the focus of future job and task crafting research, and lead to more explicit considerations of promotion or career development as a specific driver for task crafting behaviours. This possibly represents a subtle shift in the way that job and task

crafting is considered, with one of the implications of this finding being that the underpinning motivations for task crafting [and by default job crafting] may need to be re-examined.

APPENDICES

APPENDIX A: ANALYSIS AND COMPARISON OF JOB CRAFTING

INSTRUMENTS

To offer a critique of each instrument in turn, the Tims et al. (2012) instrument is not as clearly focused around task crafting, relational crafting, cognitive crafting and self-initiated skill development due to its location within the JD-R framework. However, each of these processes is identifiable from the items in the measure (see Table 34). In relation to task crafting, the items have two foci. Firstly a focus on the extent to which the employee reduces their exposure to work that is intense, emotional or overly difficult, and secondly a focus on the extent to which an employee is proactive in either getting involved in, or initiating new work tasks/projects. The overarching framework of reducing hindering demands and increasing challenging demands is clear in these items. For relational crafting, the items focus on the extent to which the employee seeks feedback and support from supervisors and peers but, in contrast to the other two measures, does not explore whether employees proactively seek to change who they interact with at work. Active changes to working relationships is a strong feature of Wrzesniewski and Dutton's (2001) original conceptualisation and appears frequently in the early research that explored what forms job crafting could take and how it was carried out by employees (Berg et al., 2010b; Leana et al., 2009), and it's omission here is surprising, particularly as proactive changes to work partners would fit well within the 'increasing social resources' dimension of Tims et al's (2012) conceptualisation. Despite the overt rejection of cognitive crafting as a form of job crafting by Tims et al. (2012), there are three items within their measure that question whether the employee makes changes to how they think about their job. Two of the three items explore the extent to which the employee attempts to reduce the mental and emotional demands of their job, and the final item explores the extent to which the employee thinks about how the different aspects of their job link together as a form of challenge. The first two items here are again negatively focused, and neither of these three explores work meaningfulness. As a

whole, the measure more closely represents what could be called a 'demand and resource adjustment measure rather than a job crafting measure. The emphasis on person-job fit and work meaningfulness is almost entirely absent from this measure.

Slemp and Vella-Brodrick's Instrument (2014) is firmly grounded within the three constructs of Self-Determination Theory (SDT) (Deci & Ryan, 1985) and, in contrast to the other two instruments, integrates the concept of change into the measure. The measure has an accompanying introduction which provides sets the context for changes as the desire to make work more engaging and fulfilling, thus encouraging respondents to focus on enhancing meaningfulness as the purpose of job crafting. For task crafting, the measure focuses on the extent to which the employee makes changes to enhance and improve their work and match their work with their own skills and interests. For cognitive crafting, the measure focuses on the extent to which the employee goes above and beyond their work tasks to build positive working relationships and create a positive work environment for colleagues. This element is strongly allied to OCB as the focus from the questions is about work enhancement for co-workers, with the positive impact on the employee themselves being intrinsic. An example of this is the item '*I organise special events in the workplace (e.g. celebrating a co-workers' birthday)'*. This is the only measure of the current three that identifies relational crafting as an OCB, and it is therefore implicit rather than explicit within this measure that the benefit for the employee is enhanced positive work relationships. For cognitive crafting, the measure focuses on the extent to which the employee reflects on the meaning, purpose and impact of their work, for themselves, their organisation and the wider community. This measure is strongly located within positive psychology and overtly examines factors which have potential to create positive wellbeing for employees. There is no inclusion of self-initiated skill development, with the emphasis in the task crafting items being on utilising existing skills to their best advantage.

Neissen et al's Instrument (2016) is the most concise of the three instruments and, with it's introductory statement for each of the processes being *'So that the job I do suits me….'*, the emphasis on person-job fit is clear. The response items range from 'not at all' to 'absolutely' which does not give an indication of whether changes are being made, and may be difficult for respondents to choose their response category, as 'absolutely' is not an opposite to 'not at all'. For task crafting, the items focus on employees' concentration, intensity and seeking additional tasks. Both concentration and intensity are similar and thus the task crafting measure appears to define task crafting as concentrating hard and seeking additional tasks. For relational crafting, the items explore whether employees manage their work relationships to avoid conflict, and whether they seek to work more with people they get along with. This is similar to Tims et al's (2012) measures of reducing hindering demands, in that negative approaches (avoiding contact with people) are viewed as a form of relational crafting. For cognitive crafting, the items particularly emphasise the importance of finding meaning in ones work, but the items are vague in contrast to the items provided by Slemp and Vella-Brodrick (2014). For instance, the final cognitive crafting item is '*So that the job I do suits me, I view my tasks and responsibilities as being more than just a part of my job'*.

This analysis shows that although the four processes of job crafting identified by Wrzesniewski and Dutton (2001) and later Lyons (2008) can be identified within the various measurement instruments, the variation between the instruments is complicating and confusing research around job crafting rather than consolidating it. Of the three current instruments, one has moved away from the original conceptualisation of job crafting and although useful and interesting, appears to represent a measure of demand and resource adjustment (Tims et al., 2012). The most recent measure (Niessen et al., 2016) does embed the concept of person-job fit strongly, but the measurement items are a little vague and potentially difficult for respondents to complete. The Slemp and Vella-Brodrick (2014) measure appears to have retained the focus on work meaningfulness and offers potential for

future research. The measure has, as yet however, not been subject to the extensive testing

that the Tims et al. (2012) measure has, which would strengthen its validity.

Table 34: Overview and process of mapping current job crafting instruments

Tims et al Instrument (2012)[1]	Slemp and Vella-Brodrick Instrument (2014)[2]	Neissen et al Instrument (2016)[3]
Increasing Structural Job Resources • I try to develop my capabilities. • I try to develop myself professionally. • I try to learn new things at work. • I make sure that I use my capacities to the fullest. • I decide on my own how I do things. **Decreasing Hindering Job Demands** • I make sure that my work is mentally less intense. • I try to ensure that my work is emotionally less intense. • I manage my work so that I try to minimize contact with people whose problems affect me emotionally. • I organise my work so as to minimize contact with people whose expectations are unrealistic. • I try to ensure that I do not have to make many difficult decisions at work. • I organise my work in such a way to make sure that I do not have to concentrate for too long a period at once. **Increasing Social Job Resources** • I ask my supervisor to coach me. • I ask whether my supervisor is satisfied with my work. • I look to my supervisor for inspiration. • I ask others for feedback on my job performance. • I ask colleagues for advice. **Increasing Challenging Job Demands** • When an interesting project comes along, I offer myself proactively as project co-worker. • If there are new developments, I am one of the first to learn about them and to try them out. • When there is not much to do at work, I see it as a chance to start new	'Please indicate the extent to which you engage in the following behaviours…' **Task Crafting** • Introduce new approaches to improve your work. • Change the scope or types of tasks that you complete at work. • Introduce new work tasks that you think better suit your skills or interests. • Choose to take on additional tasks at work. • Give preference to work tasks that suit your skills or interests. **Relational Crafting** • Make an effort to get to know people well at work. • Organise or attend work related social functions. • Organise special events in the workplace (e.g. celebrating a co-worker's birthday). • Choose to mentor new employees (officially or unofficially). • Make friends with people at work who have similar skills or interests. **Cognitive Crafting** • Think about how your job gives your life purpose. • Remind yourself about the significance your work has for the success of the organisation.	**Task Crafting** So that the job I do suits me … • I concentrate on specific work tasks. • I undertake or seek for additional tasks. • I work more intensively on tasks I enjoy. **Relational Crafting** So that the job I do suits me…. • I usually limit the amount of time I spend with people I do not get along well with, and only contact them for things that are absolutely necessary. • I invest in the relationships with people whom I get along with the best. • I look for opportunities to work together with people whom I get along well with at work. **Cognitive Crafting** So that the job I do suits me… • I try to look upon the tasks and responsibilities I have at work as having a deeper meaning than is readily apparent. • I find personal meaning in my tasks and responsibilities at

projects. • I regularly take on extra tasks even though I do not receive extra salary for them. • I try to make my work more challenging by examining the underlying relationships between aspects of my job.	• Remind yourself of the importance of your work for the broader community. • Think about the ways in which your work positively impacts your life. • Reflect on the role your job has for your overall wellbeing.	work. • I view my tasks and responsibilities as being more than just part of my job.

Table 35: Comparison of items used to measure each of the four job crafting constructs

Task Crafting	Cognitive Crafting	Relational Crafting	Self-initiated Skill Development
• I decide on my own how I do things[1] • I try to ensure that I do not have to make many difficult decisions at work[1] • I organise my work in such a way to make sure that I do not have to concentrate for too long a period at once[1] • When an interesting project comes along, I offer myself proactively as project co-worker[1] • If there are new developments, I am one of the first to learn about them and to try them out[1] • When there is not much to do at work, I see it as a chance to start new projects[1] • I regularly take on extra tasks even though I do not receive extra salary for them[1] 'Please indicate the extent to which you	• I make sure that my work is mentally less intense. [1] • I try to ensure that my work is emotionally less intense. [1] • I try to make my work more challenging by examining the underlying relationships between aspects of my job. [1] 'Please indicate the extent to which you engage in the following behaviours…' • Think about how your job gives your life purpose. [2] • Remind yourself about the significance your work has for the success of the organisation. [2] • Remind yourself of the importance of your work for the broader community. [2] • Think about the ways in which your work positively impacts your life. [2] • Reflect on the role your job has for	• I manage my work so that I try to minimize contact with people whose problems affect me emotionally[1]. • I organise my work so as to minimize contact with people whose expectations are unrealistic. [1] • I ask my supervisor to coach me. • I ask whether my supervisor is satisfied with my work. [1] • I look to my supervisor for inspiration. [1] • I ask others for feedback on my job performance. [1] • I ask colleagues for advice. [1] 'Please indicate the extent to which you engage in the following behaviours…' • Make an effort to get to know people well at work. [2] • Organise or attend work related social functions. [2] • Organise special events in the workplace (e.g. celebrating a co-worker's birthday). [2]	• I try to develop my capabilities. [1] • I try to develop myself professionally. [1] • I try to learn new things at work. [1] • I make sure that I use my capacities to the fullest. [1]

engage in the following behaviours…' • Introduce new approaches to improve your work[2] • Change the scope or types of tasks that you complete at work[2] • Introduce new work tasks that you think better suit your skills or interests[2] • Choose to take on additional tasks at work[2] • Give preference to work tasks that suit your skills or interests[2] So that the job I do suits me … • I concentrate on specific work tasks[3] • I undertake or seek for additional tasks[3] • I work more intensively on tasks I enjoy[3]	your overall wellbeing. [2] So that the job I do suits me… • I try to look upon the tasks and responsibilities I have at work as having a deeper meaning than is readily apparent. [3] • I find personal meaning in my tasks and responsibilities at work. [3] • I view my tasks and responsibilities as being more than just part of my job. [3]	• Choose to mentor new employees (officially or unofficially). [2] • Make friends with people at work who have similar skills or interests. [2] So that the job I do suits me…. • I usually limit the amount of time I spend with people I do not get along well with, and only contact them for things that are absolutely necessary[3]. • I invest in the relationships with people whom I get along with the best. [3] • I look for opportunities to work together with people whom I get along well with at work. [3]	
1. Tims et al Instrument (2012). 2. Slemp and Vella-Brodrick Instrument (2014). 3. Neissen et al Instrument (2016)			

Table 36: Synthesis of concepts arising from analysis of job crafting measures

	Tims et al (2012)	Slemp & Vella Brodrick (2014)	Neissen (2016)
Task Crafting	The extent to which employees reduce their exposure to work that this intense, emotional or overly difficult. The extent to which employees are proactive in getting involved in or initiating new projects/tasks.	The extent to which employees make changes to enhance and improve their work. The extent to which employees make changes to better match their work with their own skills and interests.	The extent to which employees concentrate hard and work with intensity. The extent to which employees seek additional tasks.
Relational Crafting	The extent to which employees seek feedback and support from supervisors and peers.	The extent to which employees act to make their workplace more positive for co-workers.	The extent to which employees act to avoid interpersonal conflicts. The extent to which employees act to work more with people they get along with.
Cognitive Crafting	The extent to which employees attempt to reduce the mental and emotional demands of their job The extent to which employees think about how their tasks interrelate.	The extent to which employees reflect on the meaning, purpose and impact of their work for themselves, their organisation and the wider community.	The extent to which employees seek to find, or find, personal meaning in their work.
Self Initiated Skill Development	The extent to which employees attempt to learn, develop and use their skills at work.		

APPENDIX B: COMPARISON OF HE PROMOTION AND INCREMENT POLICIES

Institution/ Organisation	University Group Membership	Definitions of Promotion	Conditions / Criteria	Increments
Leeds Beckett University https://www.leedsbeckett.ac.uk/-/media/files/public-information/a-to-z-guides-and-support/nn_promotion_and_regrading_procedure.pdf	Coalition of Mainstream Universities (CMU), Million+	Promotion as progression to a higher grade.	• Formal application to be made in writing • Evidence related to criteria to be provided. • Application considered in relation to Higher Education Role Analysis (HERA). • Panel based decision including candidate interview • Only available to employees if a vacancy is available.	• Information found in Pay Policy • Separate from promotions and progression policy • Annual increment tied in with specific timeframe • Can be withheld if there are performance concerns • Not available to staff at or above Grade 10.
Leeds Trinity University https://www.leedstrnity.ac.uk/StaffServices/hr-new/employee/Pages/default.aspx	Guild HE	Progression to a different and higher job role	• Annual process • Formal criteria • Academic CV and internal and external references needed • Considered by a promotions board • Includes candidate interview	• Annual increment • No mention of performance requirement • Additional discretionary awards scheme available.
University and College Union (UCU) https://www.ucu.org.uk/framework	Cross University Trade Union	Sets out Common Framework Agreement which defines promotion as progression across a pay grade.	Practical implementation of promotion determined by formal promotions criteria within HEI's.	Sets out progression within a pay grade as achieved by increments.

Institution/ Organisation	University Group Membership	Definitions of Promotion	Conditions / Criteria	Increments
University of Birmingham https://intranet.birmingham.ac.uk/hr/documents/public/promotion/Guide-to-promotions-FINAL.pdf	Russell Group, Universitas 21,	Promotion as progression to higher grade	• Formal criteria for staff • Success results in change to job title • Formal application process • Reviewed by a panel • Formal timetables for applications	• Annual increment • Progression up nationally agreed salary framework • Refers to length of service and assessment of contribution informing progression decisions.
University of Bradford https://www.bradford.ac.uk/human-resources/pay-and-pensions/	University Alliance	Regrading, defined as action as a result of a change to role or business requirements, where the employee has taken on new requirements or where level of experience has increased.	• Commences following an annual review of performance • Results in a new job title and pay grade. • Formal process with specific criteria for application.	• Describes increment as an in-grade progression • Increment is automatically applied. • No mention of performance criteria.
University of Leeds http://hr.leeds.ac.uk/info/8/promotions/299/promotions_process?single	Russell Group, Worldwide Universities Network, N8	Promotion as progression to a higher grade	• Formal Criteria for academic and non-academic staff. • Two sets of criteria (compulsory and optional) • Enables entry to bottom of next grade • Formal application process	• Separate to promotion • Occurs at annual anniversaries of start date • Can be discretionary • No application process • No formal change to job title or job description • Not related to performance, just service

APPENDIX C: ETHICAL CLEARANCE

Informed Consent Text from Paper Version of Survey

Workplace wellbeing survey

Welcome to the workplace wellbeing survey. This survey concerns your opinions on a range of workplace activities and conditions. The survey is being conducted across a number of UK universities, as part of a PhD in Organisational Wellbeing that I am completing at the University of Leeds.

The survey should take around **15 minutes to complete** and asks you to select the most accurate answers to questions about you, your job, your workplace and your work performance.

Your individual responses to this survey will be kept confidential, will not be shared with anybody outside of the research team, and will not be used for any other reason, as discussed below.

Please send your completed survey to me in the envelope provided.

Data Protection, Ethics and Informed Consent

This survey and the survey process has been approved by the University of Leeds (LUBS) Ethical Approval Panel Ref:LTLUBS-046.

All data collected in this survey will be held anonymously and securely. You have the right to withdraw from the survey at any time.

By signing below, you are agreeing to participate in this survey. You are agreeing that you have been given enough information to enable you to make an informed decision to participate in the research, that you understand the research process and the purpose of the research, and that you understand how the research data will be used and stored.

Thank you for taking the time to complete this survey. Please contact me if you have any further questions:

Nina Quinlan
PhD Researcher, University of Leeds Business School
Email: ced0njq@leeds.ac.uk.

Please read and sign the following statement:

I (insert your name)_____ understand and agree to participate in this research. I understand what is involved and have enough information to consent to take part. I understand that I have the right to withdraw from the research at any time.

Signed_____Date_____

Informed Consent Text from on-line Version of Survey

Workplace wellbeing survey

Welcome to the workplace wellbeing survey. This survey concerns your opinions on a range of workplace activities and conditions. The survey is being conducted across a number of UK universities, as part of a PhD in Organisational Wellbeing that I am completing at the University of Leeds.

The survey should take around **15 minutes to complete** and asks you to select the most accurate answers to questions about you, your job, your workplace and your work performance.

Your individual responses to this survey will be kept confidential, will not be shared with anybody outside of the research team, and will not be used for any other reason, as discussed below.

Once you have finished the survey, click submit.

Data Protection, Ethics and Informed Consent

This survey and the survey process has been approved by the University of Leeds (LUBS) Ethical Approval Panel Ref: LTLUBS-046.

All data collected in this survey will be held anonymously and securely. You have the right to withdraw from the survey at any time.

By clicking 'I agree', you are agreeing to participate in this survey. You are agreeing that you have been given enough information to enable you to make an informed decision to participate in the research, that you understand the research process and the purpose of the research, and that you understand how the research data will be used and stored.

Thank you for taking the time to complete this survey. Please contact me if you have any further questions:

Nina Quinlan
PhD Researcher, University of Leeds Business School
Email: ced0njq@leeds.ac.uk.

Please tick the box to confirm that you have read and understand the following statement:

I understand and agree to participate in this research. I understand what is involved and have enough information to consent to take part. I understand that I have the right to withdraw from the research at any time.

Confirmation of Ethical Approval

Performance, Governance and Operations Research & Innovation Service

Charles Thackrah Building, 101 Clarendon Road, Leeds LS2 9LJ

Tel: 0113 343 4873

Email: j.m.blaikie@leeds.ac.uk

AREA Faculty Research Ethics Committee, University of Leeds

16 September 2013

Dear Nina

Title of study: Predictors of job crafting for improved work performance: Developing a model

Ethics reference: LTLUBS-046

I am pleased to inform you that the above application for light touch ethical review has been reviewed by a School Ethics Representative of the ESSL, Environment and LUBS (AREA) Faculty Research Ethics Committee. I can confirm a favourable ethical opinion on the basis of the application form as of the date of this letter.

The following documentation was considered:

Document: LTLUBS-046NQuinlanLightTouchEthicsFormFINAL.doc

Version Date: 1 25/06/13

Please notify the committee if you intend to make any amendments to the original research as submitted at date of this approval, including changes to recruitment methodology. All changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents relating to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited. There is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Jennifer Blaikie

Senior Research Ethics Administrator, Research & Innovation Service

On behalf of Dr Emma Cave, Chair, AREA Faculty Research Ethics Committee

CC: Student's supervisor(s)

Text of email invitation to participate in the survey

TEXT OF ACCOMPANYING EMAIL:

Subject: PhD Survey on workplace wellbeing: request from Nina Quinlan, PhD researcher with Leeds University Business School

Dear University of xxx staff members,

I am a PhD Researcher within the LUBS faculty at the University of Leeds, exploring workplace wellbeing. Some of you may know me from my former role as Leeds University's Wellbeing Project Manager.

I would be immensely grateful if you would take 15 minutes to complete my on-line survey, exploring wellbeing at work. The survey results are anonymous and individual's responses will remain confidential.

The survey IS NOT being carried out on behalf of the University, and involves a number of UK universities. The results will make a significant contribution to what we know about creating good places to work, for individuals and for organisations.

Access to the survey is by clicking the link here:

https://www.survey.xxxx.ac.uk/phdwellbeing/

Thank you, and if you have any questions, please contact me by email on ced0njq@leeds.ac.uk

With kind regards
Nina

APPENDIX D: TIME 1 SURVEY QUESTIONS

Autonomy

Think about your work over the last six months. Select the response that <u>indicates your level of agreement or disagreement with each statement.</u>

1. I am allowed to decide how to go about getting my job done (the methods to use).
2. I am able to choose the way to go about my job (procedures to utilise).
3. I am free to choose the method(s) to use in carrying out my work.
4. I have control over the scheduling of my work.
5. I have some control over the sequencing of my work activities (when I do what).
6. My job is such that I can decide when to do particular work activities.
7. My job allows me to modify the normal way we are evaluated so that I can emphasise some aspects of my job and play down others.
8. I am able to modify what my job objectives are (what I am supposed to accomplish).
9. I have some control over what I am supposed to accomplish (what my supervisor sees as my job objectives).

Uncertainty

Thinking about your current job over the last six months, select the response that <u>you feel most closely matches your answer to each question.</u>

1. Do your tasks vary on a day-to-day basis with little or no warning?
2. Do you come across unexpected problems in your work?
3. Does the order in which you do tasks change with little or no warning?

Leader-Member Exchange (LMX)

For the following questions, your line manager should be the person who you report to or who is responsible for managing you.

1. Do you usually know how satisfied your line manager is with what you do? The response scale ranged from "rarely" (coded 1), to "very often" (coded 5).
2. How well does your line manager understand your job problems and needs? The response scale ranged from "not at bit" (coded 1), to "A great deal" (coded 5).
3. How well does your line manager recognise your potential? The response scale range from "not at all" (coded 1), to "fully" (coded 5).

4. Regardless of how much formal authority your line manager has built into his or her position, what are the chances that your line manager would use his or her power to help you solve problems in your work? The response scale ranged from "none" (coded 1), to "very high" (coded 5).

5. Again, regardless of the amount of formal authority your line manager has, what are the chances that he or she would 'bail you out' at his or her expense? The response scale ranged from "none" (coded 1), to "very high" (coded 5).

6. I have enough confidence in my line manager that I would defend and justify his or her decision is he or she was not present to do so. The response scale ranged from "strongly disagree" (coded 1), to "strongly agree" (coded 5).

7. How would you characterise your working relationship with your line manager? The response scale ranged from "extremely ineffective" (coded 1), to "extremely effective" (coded 5).

Climate for Crafting

The following question asks you to think about the area in which you work. In this survey, work area should be taken to mean your immediate work environment and the people with whom you regularly work, rather than the institution or organisation as a whole.

Again, thinking about your work environment, select the response that indicates your level of agreement or disagreement with each statement.

1. In my work area, job crafting is a normal work behaviour.
2. In my work area, job crafting is an acceptable work behavior.
3. In my work area, job crafting is a common work behaviour.

Task Crafting

The following questions concern job crafting, which is when an employee makes self-initiated changes to how they go about doing their job. This can include changing how tasks are carried out or changes to the tasks that they do. It can include changing how they interact with others at work, or who they interact with. It can include the employee changing how they think about their work or work tasks. It can also include making changes to the level of demand or challenge in the job, for example by taking on new challenges, or by reducing workload or tasks.

The main thing that makes job crafting different to other forms of job change is that these changes are self-initiated and voluntary.

Thinking about your current job,

1. During the past six months, to what extent have you <u>voluntarily</u> changed the skills you use in your work?
2. During the past six months, to what extent have you <u>voluntarily</u> changed the kind of work tasks you do?
3. During the past six months, to what extent have your <u>voluntarily </u>changed the variety of work tasks you perform?

<u>**Promotion**</u>
1. Have you been promoted within the last six months?   YES   NO

<u>**Demographic Questions**</u>
Below is the text which accompanied the demographic questions

About you…
This section asks for information about you that will help me to differentiate between different groups of people when I analyse the overall responses.

All personal information is confidential and will not be shared with anybody outside of the research team. In addition, when analysing the responses, no individuals will be able to be identified and anonymity will be protected.

How old are you?...................... years

What gender are you? Male   Female

What is your highest level of educational qualification?

No formal qualifications	GCSE/O Levels	A Levels (or equivalent)
HNC/HND (or equivalent)	Undergraduate degree	Postgraduate degree

What is your current job category? (tick the box that most closely applies to you)

Academic Staff		**Support Staff**	
Academic	☐	Professional/Managerial	☐
Research only	☐	Professional/Administrative	☐
		Clerical	☐
		Technical	☐
		Porters	☐
		Cleaning	☐
		Catering	☐

Other (please specify)…………………………………………………….

How long have you worked in this organisation? ____years____months

APPENDIX E: TIME 2 SURVEY QUESTIONS

<u>Introductory email</u>

Dear xxxx

Just over six months ago you completed a Workplace Wellbeing Survey that was distributed as part of my PhD research into university staff wellbeing. At the time you agreed to be contacted again in six months to repeat some questions from the survey.

Thank you for agreeing to do this. Please use the link below to access stage 2 of this survey. However, to ensure I can match your replies this time to your replies last time, please insert the following unique ID number when prompted to do so.

[web link to survey provided here]

UNIQUE ID: [respondent unique identification number provided here]

Once again, thank you for your time in completing this survey as it will help us to understand what creates optimal conditions for wellbeing, for University staff. I will be sending out a short electronic summary of the study results once they are available next year.

With kind regards

Nina Fryer

PhD Researcher, LUBS Faculty, University of Leeds

Associate Principal Lecturer, Leeds Trinity University

<u>Survey questions</u>

Demographic Questions

Below is the text which accompanied the demographic questions

About you…

This section asks for information about you that will help me to differentiate between different groups of people when I analyse the overall responses.

All personal information is confidential and will not be shared with anybody outside of the research team. In addition, when analysing the responses, no individuals will be able to be identified and anonymity will be protected.

How old are you?....................... years

What gender are you? Male   Female

What is your highest level of educational qualification?

No formal qualifications   GCSE/O Levels   A Levels (or equivalent)

HNC/HND (or equivalent)   Undergraduate degree   Postgraduate degree

What is your current job category? (tick the box that most closely applies to you)

Academic Staff		**Support Staff**	
Academic	☐	Professional/Managerial	☐
Research only	☐	Professional/Administrative	☐
		Clerical	☐
		Technical	☐
		Porters	☐
		Cleaning	☐
		Catering	☐

Other (please specify)…………………………………………………….
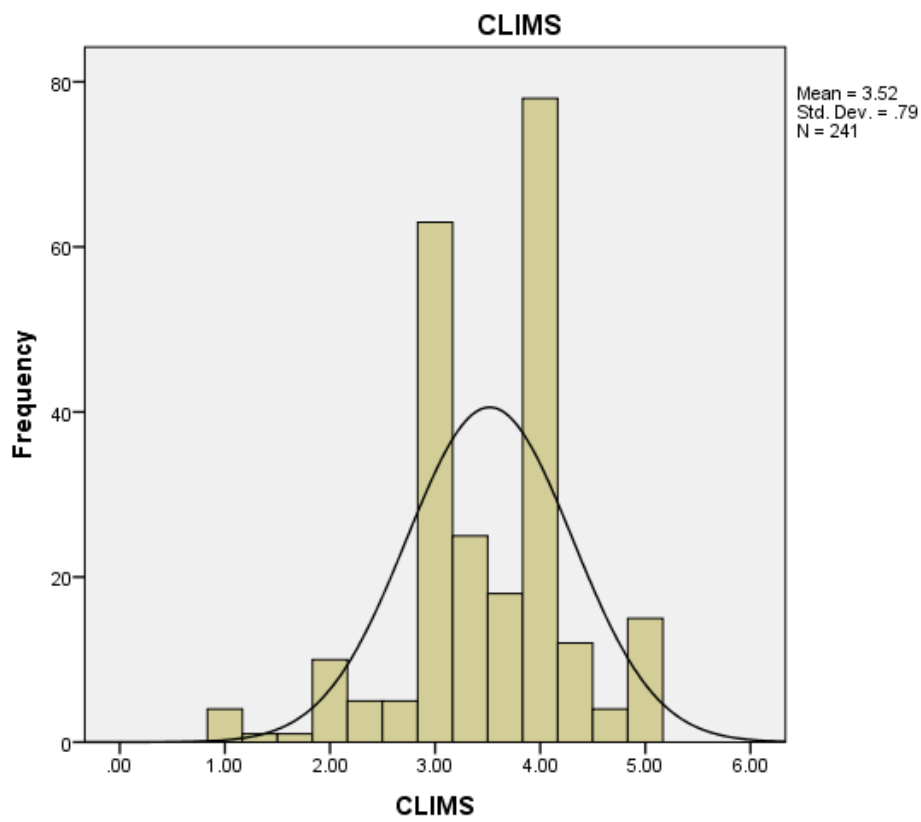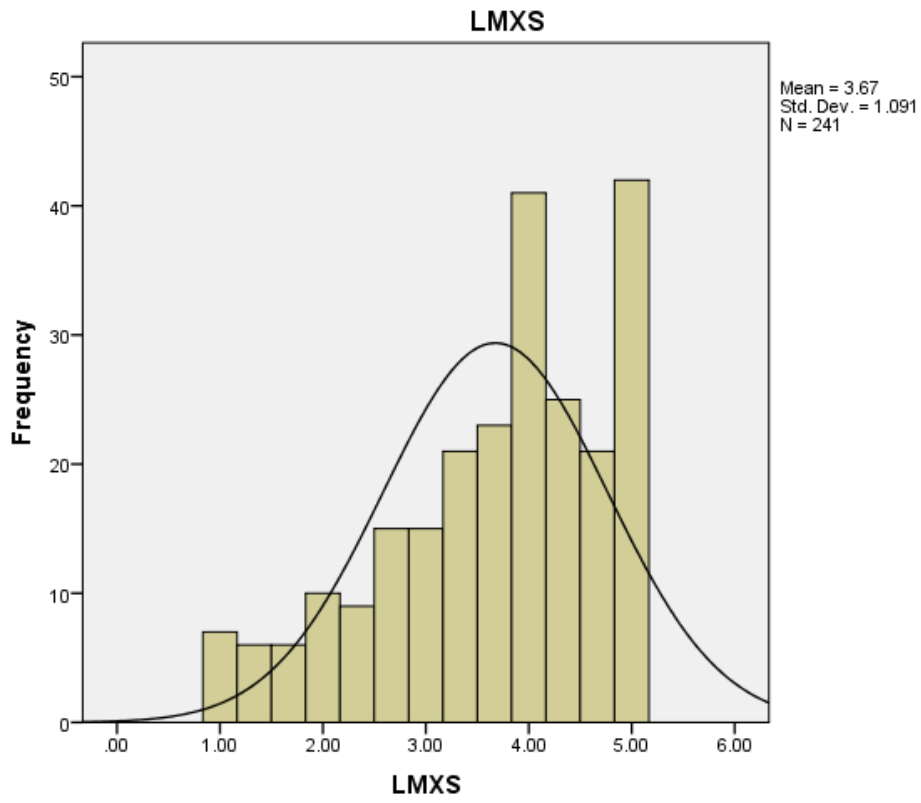
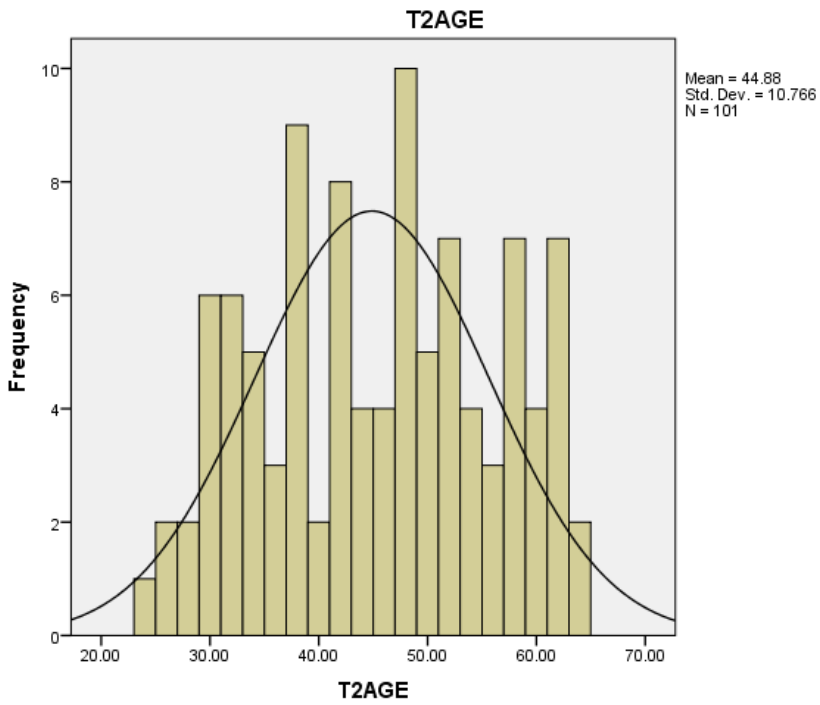**How long have you worked in this organisation**? ____years____months

Promotion

Have you been promoted within the last six months?   Yes   No

APPENDIX F: DISTRIBUTION HISTOGRAMS FOR T1 STUDY VARIABLES

AUTS

Mean = 4.47
Std. Dev. = 1.02
N = 241

TASKCRS

Mean = 2.69
Std. Dev. = .968
N = 241

LMXS

Mean = 3.67
Std. Dev. = 1.091
N = 241

CLIMS

Mean = 3.52
Std. Dev. = .79
N = 241
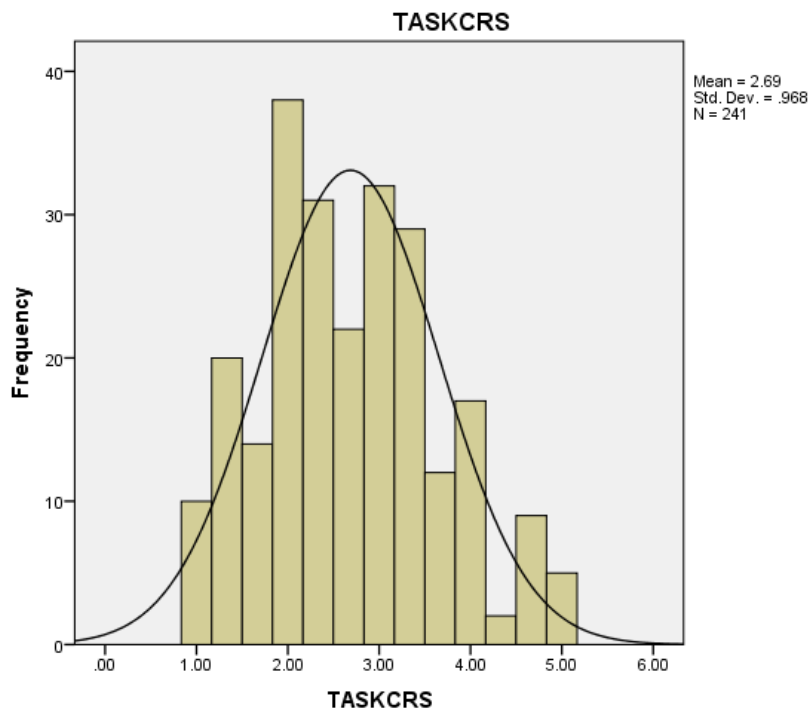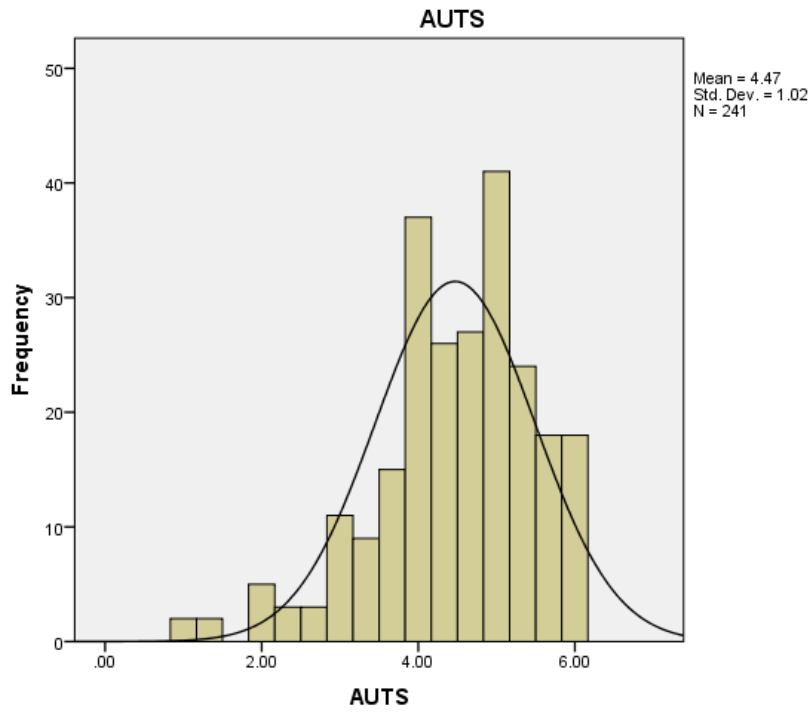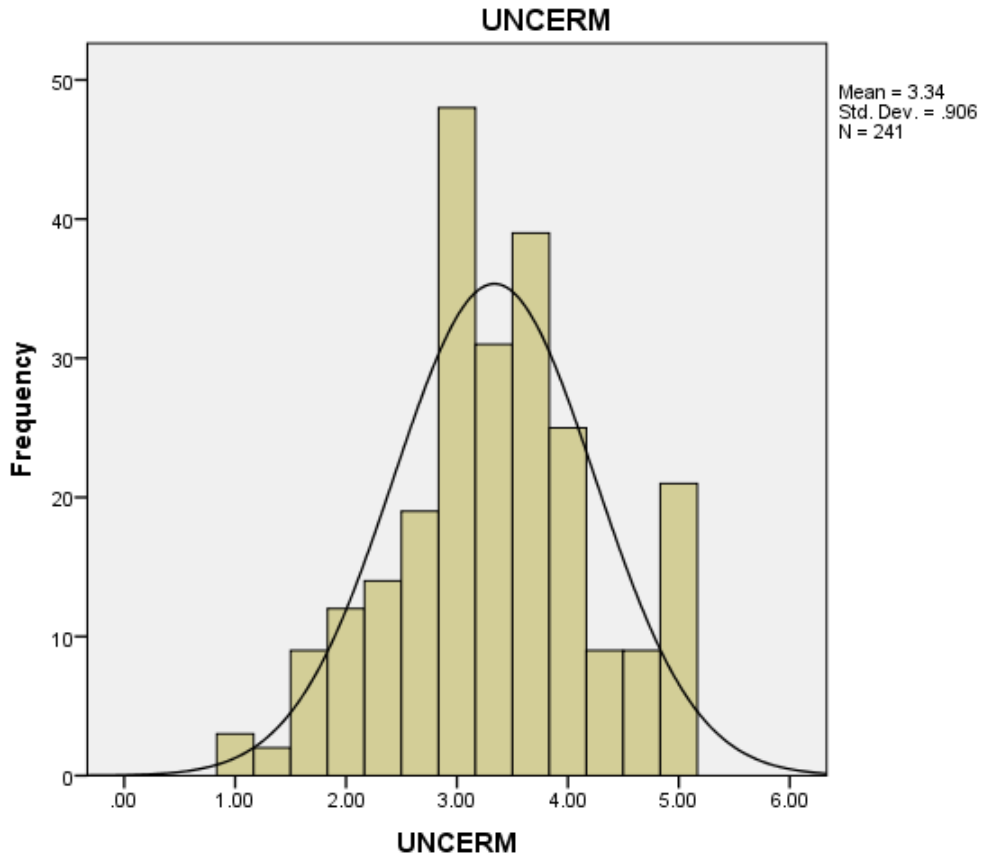
APPENDIX G: MODELLING OUTPUTS

Figure 21: Direct effects model for Time 1 data

Figure 22: Direct effects of all variables to promotion at Time 1

REFERENCES

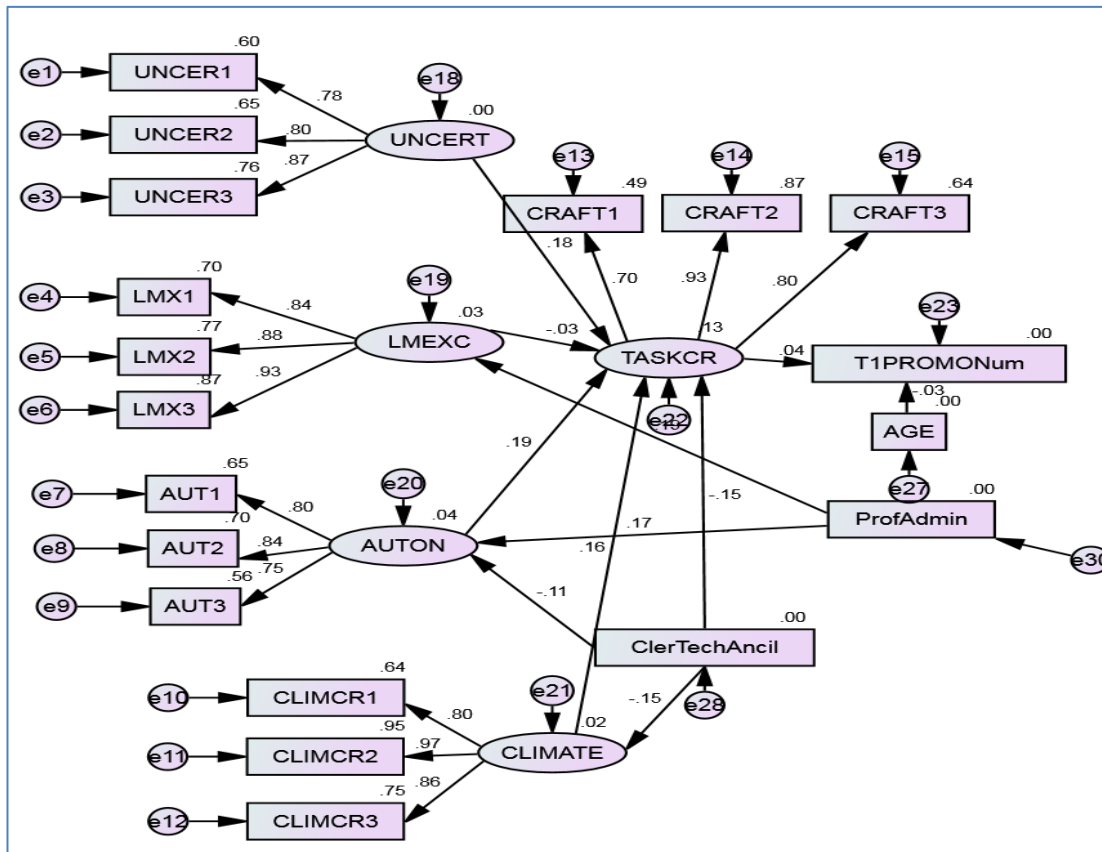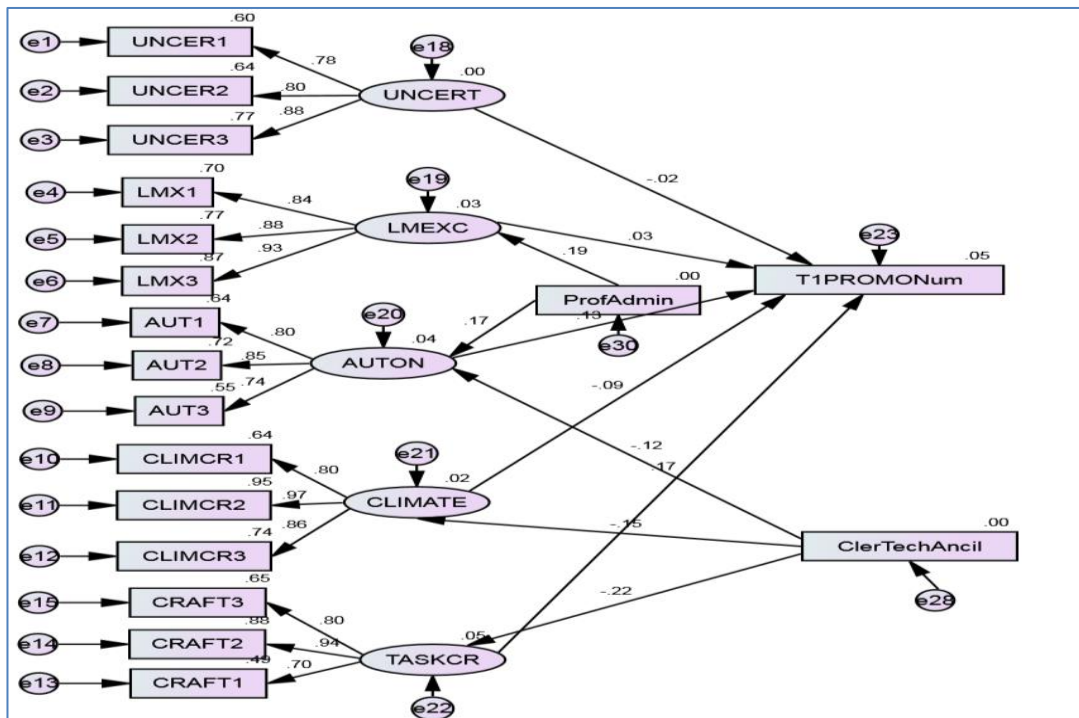Afsar, B. and Masood, M. 2017. Transformational leadership, creative self-efficacy, trust in supervisor, uncertainty avoidance, and innovative work behaviour of nurses. *Journal of Applied Behavioral Science.* **54**(1), pp.36-61.

Allen, C., O'Donnell, M. and Peetz, D. 1999. Three dimensions of labour utilization: Job broading, employment insecurity and intensification, *Current Research in Industrial Relations.* **1**( ), pp.13-24.

Allen, G. 1997. Antecedents and outcomes of promotion systems. *Human Resource Management.* **36**(2), pp.251-259.

Amabile, T.M., Barsade, S.G., Mueller, J.S. and Staw, B.M. 2005. Affect and creativity at work. *Administrative Science Quarterley.* **50**(3), pp.367-403.

Anderson, N.R. and West, M.A. 1996. Team Climate Inventory: Development of the TCI and its applications in teambuilding for innovativeness. *Journal of Work and Organizational Psychology.* **5**(1), pp.53-66.

Anderson, N.R. and West, M.A. 1998. Measuring climate for work group innovation: Development and validation of the Team Climate Inventory. *Journal of Organizational Behavior.* **19**(3), pp.235-258.

Anthony-McMann, P.E., Ellinger, A.D., Astakhova, M. and Halbesleben, J.R.B. 2016. Exploring different operationalizations of employee engagement and their relationships wih workplace stress and burnout. *Human Resource Development Quarterly.* **28**(2), pp.163-195.

Arbuckle, J.L. 2014. *IBM SPSS AMOS 22 Users Guide.* [Online]. Chicago: AMOS Development Corporation.

Arthur, M.B. and Rousseau, D.M. 1996. *The boundaryless career: A new employment principle for a new organizational era.* New York: Oxford University Press.

Atieno, O.P., 2009. An analysis of the strengths and limitations of qualitative and quantitative research paradigms. *Problems of Education in the 21st Century.* **13**, pp13-18.

Avey, J.B., Reichard, R.J., Luthans, F. and Mhatre, K.H. 2011. Meta-Analysis of the Impact of Positive Psychological Capital on Employee Attitudes, Behaviors, and Performance. *Human Resource Development Quarterly.* **22**(2), pp.127-152.

Azar, O. 2004. What sustains social norms and how they evolve: The case of tipping. *Journal of Economic Behaviour and Organization.* **54**(1), pp.49-64.

Baard, P.P., Deci, E.L. and Ryan, R.M. 2004. Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology.* **34**(10), pp.2045-2068.

Babcock-Roberson, M.E. and Strickland, O.J. 2010. The relationship bewteen charismatic leadership, work engagement, and organizational citizenship behavior. *The Journal of Psychology: Interdisciplinary and Applied.* **144**(3), pp.313-326.

Bailey, C., Madden, A., Alfes, K. and Fletcher, L. 2017. The meaning, antecedents and outcomes of employee engagement: A narrative synthesis. *International Journal of Management Reviews.* **19**(1), pp.31-53.

Bakker, A.B., Albrecht, S. and Leiter, M. 2011. Work engagement: Further reflections on the state of play. *European Journal of Work and Organizational Psychology.* **20**(1), pp.74-88.

Bakker, A.B. and Demerouti, E. 2007. The Job Demands-Resources model: state of the art. *Journal of Managerial Psychology.* **33**(3), pp.309-328.

Bakker, A.B., Rodriguez-Muñoz, A. and Vergal, A.I.S. 2016. Modelling job crafting behaviours: Implications for work engagement. *Human Relations.* **69**(1), pp.169-189.

Bakker, A.B., Schaufeli, W.B., Leiter, M.P. and Taris, T.W. 2008. Work engagement: An emerging concept in occupational health psychology. *Work and Stress.* **22**(3), pp.187-200.

Bakker, A.B., Tims, M. and Derks, D. 2012. Proactive Personality and Job Performance: The role of job crafting and work engagement. *Human Relations.* **65**(10), pp.1359-1378.

Bambacas, M. and Bordia, P. 2009. Predicting different commitment components: The relative effects of how career development HRM practices are perceived. *Journal of Management and Organization.* **15**(2), pp.224-240.

Bandalos, D.L. 2002. The effects of item parceling on goodness-of-fit an dparameter estimates in structural equation modelling. *Structural Equation Modeling: A multidisciplinary Journal.* **9**(1), pp.78-102.

Bandalos, D.L. 2008. Is parceling really necessary? A comprison of results from item parceling and categorical variable methodology. *Structural Equation Modeling: A multidisciplinary Journal.* **15**(2), pp.211-240.

Bandura, A. 1986. *Social foundation of thought and action.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. and Locke, E.A. 2003. Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology.* **88**(1), pp.87-99.

Baron, R.M. and Kenny, D.A. 1986. The moderator-mediator variable distinction in social pschological-research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology.* **51**(6), pp.1173-1182.

Bartlett, J., Kotrlik, J. and Higgins, C. 2001. Organizational Research: Determining appropriate sample size in survey research. *Information Technology, Learning and Performance Journal.* **19**(1), pp.43 - 50.

Bavik, A., Bavik, Y.L. and Tang, P.M. 2017. Servant leadership, employee job crafting, and citizenship behaviors: A cross level investigation. *Cornell Hospitality Quarterly.* **58**(4), pp.364-373.

Bayl-Smith, P.H. and Griffin, B. 2015. Measuring work styles: Towards an understanding of the dynamic components of the theory of work adjustment. *Journal of Vocational Behavior.* **90**, pp.132-144.

Bayl-Smith, P.H. and Griffin, B. 2018. Maintenance of D-A fit through work adjustment behaviors: The moderating effect of work style fit. *Journal of Voational Behavior.* **106**, pp.209-219.

Bennett, R.J. and Robinson, S.L. 2000. Development of a measure of workplace deviance. *Journal of Applied Psychology.* **85**, pp.349-360.

Berg, J.M., Dutton, J.E. and Wrzesniewski, A. 2008. What is job crafting and why does it matter? . [Online]. Center for Positive Organizational Scholarship Retrieved from the website of Positive Organizational Scholarship on April 15, 2011. [Accessed 23 March 2017].

Berg, J.M., Grant, A. and Johnson, V. 2010a. When callings are calling: Crafting work and Leisure in pursuit of unanswered occupational callings. *Organizational Science.* **21**(5), pp.974-994.

Berg, J.M., Wrzesniewski, A. and Dutton, J.E. 2010b. Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior.* **31**(2/3), pp.156-186.

Bertolino, M., Truxillo, D.M. and Fraccaroli, F. 2011. Age as moderator of the relationship of proactive personality with training motivation, perceived career development from training, and training behavioral intentions. *Journal of Organizational Behavior.* **32**(2), pp.248-263.

Blau, F.D. and Devaro, J. 2007. New evidence on gender differences in promotion rates: An empirical analysis of a sample of new hires. *Industrial Relations.* **46**(3), pp.511-550.

Blau, P.M. 1964. *Exchange and Social Life.* New York: Wiley.

Borman, W.C. and Motowidlo, S. 1993. Expanding the criterion domain to include elements of contextual performance. In: Schmitt, N. and Borman, W. eds. *Personnel selection in organizations.* San Francisco, CA: Jossey-Bass, pp.71-98.

Bourdage, J.S., Lee, K., Lee, J.-H. and Shin, K.-H. 2012. Motivations for organizational citizenship behavior: Personality correlates and coworker ratings of OCB. *Human Performance.* **25**(3), pp.179-200.

Bowling, N.A. and Burns, G.N. 2014. Sex as a moderator of the relationship between predictor variables and counterproductive work behavior. *Journal of Business and Psychology.* **30**(1), pp.192-205.

Bradley, B.H., Postlethwaite, B.E., Klotz, A.C., Hamdani, M.R. and Brown, K.G. 2012. Reaping the benefits of task conflict in teams: The critical role of team psychological safety climate. *Journal of Applied Psychology.* **97**(1), pp.151-158.

Breaugh, J. 1985. The Measurement of Work Autonomy. *Human Relations.* **38**, pp.551-570.

Brenninkmeijer, V. and Hekkert-Koning, M. 2015. To craft or not to craft: The relationships between regulatory focus, job crafting and work outcomes. *Career Development International.* **20**(2), pp.147-162.

Briscoe, J.P. and Hall, D.T. 2006. The interplay of boundaryless and protean careers: Combinations and implications. *Journal of Vocational Behavior.* **69**, pp.4-18.

Brown, S.D., Lent, R.W., Telander, K. and Tramayne, S. 2011. Social cognitive career theory, conscientiousness, and work performance: A meta-analytic path analysis. *Journal of Vocational Behavior.* **79**(1), pp.81-90.

Brown, S.P. and Leigh, T.W. 1996. A new look at Psychological Climate and its relationship to job involvement, effort and performance. *Journal of Applied Psychology.* **81**(4), pp.358-368.

Burchell, K., Rettie, R. and Patel, K. 2012. Marketing social norms: Social marketing and the 'social norm approach'. *Journal of Consumer Behaviour.* **12**(1), pp.1-9.

Byrne, B. 2010. *Structural Equation Modelling with AMOS: Basic concepts, applications and progamming.* 2nd ed. London: Routledge.

Carse, T., Griffin, B. and Lyons, M. 2017. The dark side of engagement for older workers. *Journal of Personnel Psychology.* **16**(4), pp.161-171.

Chae, H. and Choi, J.N. 2018. Contextualizing the effects of job complexity on creativity and task performance: Extending job design theory with social and contextual contingencies. *Journal of Occupational and Organizational Psychology.* **91**, pp.316-339.

Challenger, R., Leach, D.J., Stride, C.B. and Clegg, C.W. 2011. A New Model of Job Design: Initial Evidence and Implications for Future Research. *Human Factors and Ergonomics in Manufacturing & Service Industries.* **00**(0), pp.1-16.

Chang, P.-L., Chou, Y.-C. and Cheng, F.-C. 2007. Career needs, career development programmes, organizational commitment and turnover of nurses in Taiwan. *Journal of Nursing Management.* **15**(3), pp.801-810.

Chen, C.-Y., Yen, C.-H. and Tsai, F.C. 2014. Job crafting and job engagement: The mediating role of person-job fit. *International Journal of Hospitality Management.* **37**, pp.21-28.

Chen, L.-J. and Hung, H.-C. 2016. The indirect effect in multiple mediators model by structural equation modeling. *European Journal of Business, Economics and Accountancy.* **4**(3), pp.36-43.

Cheng, J.-C., Chen, C.-Y., Teng, H.-Y. and Yen, C.-H. 2016. Tour leaders' job crafting and job outcomes: The moderating role of perceived organizational support. *Tourism Management Perspectives.* **20**, pp.19-29.

Chong, E. and Xiaofang, M. 2010. The influence of individual factors, supervision and work environment on creative self-efficacy. *Creativity and Innovation Management.* **19**(3), pp.233-247.

Chua, R.Y.-J. and Iyengar, S.S. 2006. Empowerment through choice: A critical analysis of the effects of choice in organisations. *Research in Organisational Behaviour.* **27**, pp.41-79.

Chung, P.-P. and Leung, K. 2010. Effects of performance information and physical attractiveness on managerial decisions about promotion. *Journal of Social Psychology.* **128**(6), pp.791-801.

Clegg, C. and Spencer, C. 2007. A circular and dynamic model of the process of job design. *Journal of Occupational and Organizational Psychology.* **80**, pp.321-339.

Cohen, J. 1988. *Statistical power analysis for the behavioural sciences.* (2nd ed). Hillsdale, New Jersey: Laurence Earlbaum Associates.

Cole, D.A., Perkins, C.E. and Zelkowitz, R.L. 2016. Impact of homogeneous and heterogeneous parceling strategies when latent variables represent multidimensional constructs. *Psychological Methods.* **21**(2), pp.164-174.

Cordery, J.L., Morrison, D., Wright, B.M. and Wall, T.D. 2010. The impact of autonomy and task uncertainty on team performance: A longitudinal field study. *Journal of Organizational Behavior.* **31**(2-3 (SI)), pp.240-258.

Crawshaw, J.R. 2011. Career development, progression and trust. In: Searle, R.H. and Skinner, D. eds. *Trust and Human Resource Management.* Cheltenham, UK: Edward Elgar, pp.157-176.

Crawshaw, J.R. and Game, A. 2015. The role of line managers in employee career management: an attachment theory perspective. *The International Journal of Human Resource Management.* **26**(9), pp.1182-1203.

Crawshaw, J.R., van Dick, R. and Brodbeck, F.C. 2012. Opportunity, fair process and relationship value: career development as a driver of proactive work behaviour. *Human Resource Management Journal.* **22**(1), pp.4-20.

Cullen, K.L., Edwards, B.D., Casper, W.C. and Gue, K.R. 2014. Employees' adaptability and perceptions of change-related uncertainty: Implications for perceived organizational support, job satisfaction and performance. *Journal of Business and Psychology.* **29**(2 SI), pp.269-280.

Dahling, J.J. and Librizzi, U.A. 2015. Integrating the Theory of Work Adjustment and Attachment Theory to predict job turnover. *Journal of Career Development* **42**(3), pp.215-228.

Daniels, K., Beesley, N., Cheyne, A. and Wimalasiri, V. 2008. Coping processes linking the demands-control-support model, affect and risky decisions at work. *Human Relations.* **61**(6), pp.845-873.

Daniels, K., Beesley, N., Wimalasiri, V. and Cheyne, A. 2011. Problem-Solving and Well-Being: Exploring the Instrumental Role of Job Control and Social Support.

Daniels, K., Gedikli, C., Watson, D., Semkina, A. and Vaughn, O. 2017. Job design, employment practices and well-being: A systematic review of intervention studies. *Ergonomics.* **60**(9), pp.1177-1196.

Daniels, K. and Harris, C. 2000. Work, psychological well-being and performance. *Occupational Medicine-Oxford.* **50**(5), pp.304-309.

Dansereau, F., Graen, G. and Haga, W. 1975. A vertical dyad linkage approach to leadership within formal organisations: A longitudinal investigation of the role making process. *Organizational Behavior and Human Performance.* **13**, pp.46-78.

Dawis, R.V. 2002. Person-environment-correspondence theory. In: Brown, D. and Associates eds. *Career Choice and Development.* 4 ed. San Francisco: Jossey-Bass, pp.3-23.

De Clercq, D., Rahman, Z.M. and Belausteguigoitia, I. 2017. Task conflict and employee creativity: The critical role of learning orientation and goal congruence. *Human Resource Management.* **56**(1), pp.93-109.

Deci, E.L., Olafsen, A.H. and Ryan, R.M. 2017. Self-determination theory in work organizations: The state of the science. *Annual Review of Organizational Psychology and Organizational Behavior.* **4**, pp.19-43.

Deci, E.L. and Ryan, R.M. 1985. *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Demerouti, E., Bakker, A.B. and Gevers, J.M. 2015. Job crafting and extra-role behavior: The role of work engagement and flourishing. *Journal of Vocational Behavior.* **91**, pp.87-96.

Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W.B. 2001. The job demands-resources model of burnout. *Journal of Applied Psychology.* **86**(499-512).

Diener, E. 2009. *Assessing well-being: The collected works of Ed Diener.* London: Springer.

Dienesch, R. and Liden, R. 1986. Leader-Member Exchange Model of Leadership: A critique and further development. *Academy of Management Review.* **3**, pp.618-634.

Dikkers, J., Jansen, P., de Lange, A., Vinkenburg, C. and Kooij, D. 2009. Proactivity, job characteristics and engagement: a longitudinal study. *Career Development International.* **15**(1), pp.59-77.

Dilworth, J. 2005. The double content of perception. *Synthese.* **146**(3), pp.225-243.

DIR (Department of Industrial Relations) (1995) Enterprise Bargaining In Australia: Annual Report 1994, Canberra: AGPS.

Dobele, A.R. and Rundle-Theile, S. 2015. Progression through academic ranks: A longitudinal examination of internal promotion drivers. *Higher Education Quarterly*, **69**(4), pp.410-429

Duffield, C., Baldwin, R., Roche, M. and Wise, S. 2014. Job enrichment: creating meaningful career development opportunities for nurses. *Journal of Nursing Management.* **22**(6), pp.697-706.

Dunegan, K., Uhl-Bien, M. and Duchon, D. 2002. LMX and subordinate performance: The moderating effects of task characteristics. *Journal of Business and Psychology.* **17**(2), pp.275-285.

Edmondson, A.C. 1999. Psychological safety and learning behavior in work teams. *Administrative Science Quarterley.* **44**, pp.350-383.

Edwards, J. 2008. Person-Environment fit in organizations: An assessment of theoretical progress. *Academy of Management Annals.* **2**, pp.167-230.

Fan, D., Cui, L., Zhang, M.M., Zhu, C.J., Hartel, C.E.J. and Nyland, C. 2014. Influence of high performance work systems on employees' subjective well-being and job burnout: Empirical evidence from the Chinese healthcare sector. *International Journal of Human Resource Management.* **25**(7), pp.931-950.

Farr-Wharton, R., Brunetto, Y. and Shacklock, K. 2011. Professionals' supervisor-subordinate relationships, autonomy and commitment in Australia: a leader-member exchange theory perspective. *The International Journal of Human Resource Management.* **22**(17), pp.3496-3512.

Farzaneh, J., Farashah, A.D. and Kazemi, M. 2014. The impact of person-job fit and person-organization fit on OCB. *Personnel Review.* **43**(5), pp.672-691.

Field, A. 2015. *Discovering statistics using IBM SPSS Statistics.* 4th ed. London: Sage Publications Ltd.

Ford, M.T., Cerasoli, C.P., Higgins, J.A. and Decesare, A.L. 2011. Relationships between psychological, physical, and behavioural health and work performance: A review and meta-analysis. *Work and Stress.* **25**(3), pp.185-204.

Fredrickson, B. 2001. The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. *American Psychologist.* **56**, pp.219-226.

Fuller, A. and Unwin, L. 2017. Job crafting and identity in low-grade work: How hospital porters redefine the value of their work and expertise. *Vocations and Learning.* **10**(3), pp.307-324.

Gelman, A., Carlin, J.B., Stern, H.S. and Rubin, D.B. 2004. *Bayesian Data Analysis.* 2 ed. London: Chapman and Hall.

Gershon, R., Stone, P., Bakkern, S. and Larson, E. 2004. Measurement of organisational culture and climate in healthcare. *Journal of Advanced Nursing.* **34**(1), pp.33-40.

Ghosh, K. 2015. Benevolent leadership in not-for-profit organizations: Welfare orientation measures, ethical climate and organizational citizenship behaviour. *Leadership & Organizational Development Journal.* **36**(5), pp.592-611.

Gibson, D.E. 2004. Role models in career development: New directions for theory and research. *Journal of Vocational Behavior.* **65**(1), pp.134-156.

Goldberg, L.R. 1993. The structure of phenotypic personality traits. *American Psychologist.* **48**(1), pp.26-34.

Goodwin, L.D. and Leach, N.L. 2006. Understanding correlation: Factors that affect the size of *r. Journal of Experimental Education.* **74**(3), pp.251-266.

Graen, G. and Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of Leader-Member Exchange (LMX) Theory of Leadership over 25 years: Applying a multi-domain perspective. *Leadership Quarterly.* **6**(2), pp.219-247.

Grant, A.M. and Ashford, S.J. 2008. The dynamics of proactivity at work. *Research in Organizational Behavior.* **28**, pp.3-34.

Grant, A.M., Fried, Y., Parker, S.K. and Frese, M. 2010. Putting job design in context: Introduction to the special issue. *Journal of Organizational Behavior.* **31**, pp.145-157.

Griffin, M., Neal, A. and Parker, S. 2007. A new model of work role performance: Positive behaviour in uncertain and interdependent contexts. *Academy of Management Journal.* **50**(2), pp.324-347.

Hackman, J.R. and Oldham, G.R. 1976. Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance.* **16**, pp.250-279.

Hackman, J.R. and Oldham, G.R. 1980. *Work Redesign.* Reading, MA: Addison-Wesley.

Halbesleben, J. 2011. The consequences of engagement: The good, the bad, and the ugly. *European Journal of Work and Organizational Psychology.* **20**(1), pp.68-73.

Han, T.-S., Chiang, H.-H., McConville, D. and Chiang, C.-L. 2015. A Longitudinal Investigation of Person-Organization Fit, Person-Job Fit, and Contextual Performance: The Mediating Role of Psychological Ownership *Human Performance.* **28**(5), pp.425-439.

Harari, M.B., Reaves, A.C. and Viswesvaran, C. 2016. Creative and innovative performance: A meta-analysis of relationships with task, citizenship, and counterproductive job performance dimensions. *European Journal of Work and Organizational Psychology.* **25**(4), pp.495-511.

Harju, L.K., Hakanen, J.J. and Schaufeli, W.B. 2016. Can job crafting reduce job boredom and increase work engagement? A three-year cross-lagged panel study. *Journal of Vocational Behavior.* **95-96**, pp.11-20.

Harzer, C. and Ruch, W. 2015. The relationships of character strengths, work-related stress, and job satisfaction. *Frontiers in Psychology.* **6**(Article Number 165).

Heffernan, M., Harney, B., Cafferkey, K. and Dundon, T. 2016. Exploring the HRM-performance relationship: The role of creativity climate and strategy. *Employee Relations.* **38**(3), pp.438-462.

Higher Education Statistics Agency (HESA). 2016. *Higher education staff statistics: UK, 2017/18.* https://www.hesa.ac.uk/news/24-01-2019/sb253-higher-education-staff-statistics.

Hinkin, T. 1998. A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods.* **1**, pp.104-121.

Hirschi, A., Freund, P.A. and Herrmann, A. 2014. The Career Engagement Scale: Development and validation of a measure of proactive career behaviours. *Journal of Career Assessment.* **22**(4), pp.575-594.

Hirschi, A. and Valero, D. 2015. Career adaptability profiles and their relationship to adaptivity and adapting. *Journal of Voational Behavior.* **88**, pp.220-229.

Hirst, G., Budhwar, P., Cooper, B., West, M., Long, C., Chongyuan, X. and Shipton, H. 2008. Cross-cultural variations in climate for autonomy, stress and organizational productivity relationships: A comparison of Chinese and UK manufacturing organizations. *Journal of International Business Studies.* **39**(8), pp.1343-1358.

Hobfall, S. 2002. Social and psychological resources and adaptation. *Review of General Psychology.* **6**(4), pp.307-324.

Hoekstra, H.A. 2011. A career roles model of career development. *Journal of Vocational Behavior.* **78**(2), pp.159-173.

Holland, J.L. 1997. *Making vocational choices: A theory of vocational personalities and work environments.* 3rd ed. Englewood Cliffs, New Jersey: Prentice-Hall.

Hornung, S., Rosusseau, D., Glaser, J., Angerer, P. and Weigh, M. 2010. Beyond top-down and bottom-up work redesign: Customising job content through ideosyncratic deals. *Journal of Organizational Behavior.* **31**(2-3), pp.187-215.

Howell, D.C. 1990. *Statistical methods in human sciences.* New York: Wadsworth.

Hu, L.-T. and Bentler, P.M. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A multidisciplinary journal.* **6**(1), pp.1-55.

Huang, T.-P. 2011. Comparing motivating work characteristics, job satisfaction, and turnover intention of knowledge workers and blue-collar workers, and testing a structural model of the variables' relationships in China and Japan. *Human Resource Management.* **22**(4), pp.924-944.

Hui, C., Lam, S.S.K. and Law, K.K.S. 2000. Instrumental values of organizational citizenship behavior for promotion: A field quasi-experiment. *Journal of Applied Psychology.* **85**(5), pp.822-828.

Ireland, G.W. and Lent, R.W. 2018. Career exploration and decision-maknig learning experiences: A test of the career self-management model. *Journal of Voational Behavior.* **106**, pp.37-47.

Jin, Y., Hopkins, M.M. and Wittmer, J.L.S. 2010. Linking human capital to competitive advantages: Flexibility in a manufacturing firm's supply chain. *Human Resource Management.* **49**(5), pp.939-963.

Johns, G. 2001. In praise of context. *Journal of Organizational Behavior.* **22**(1), pp.31-42.

Johns, G. 2010. Some unintended consequences of job design. *Journal of Organizational Behavior.* **31**, pp.361-369.

Karasek, R.A. and Theorell, T. 1990. *Healthy Work: Stress, Productivity and the Reconstruction of Working Life.* New York: Basic Books.

Kimivaki, M. and Elovainio, M. 1999. A short version of the Team Climate Inventory: Development and psychometric properties. *Journal of Occupational and Organizational Psychology.* **72**, pp.241-246.

Kline, R.B. 2011. *Principles and practice of structural equation modeling.* 3rd ed. New York: Guildford Publications.

Kruschke, J.K., Aguinis, H. and Joo, H. 2012. The time has come: Bayesian methods for data analysis in the organizational science. *Organizational Research Methods.* **15**(4), pp.722-752.

Langfred, C.W. 2004. Too much of a good thing? Negative effects of high trust and individual autonomy in self-managing teams. *Academy of Management Journal.* **47**(3), pp.385-399.

Lapierre, L.M. and Hackett, R.D. 2007. Trait conscientiousness, leader-member exchange, job satisfaction and organizatoinal citizenship behaviour: A test of an integrative model. *Journal of Occupational and Organizational Psychology.* **80**(3), pp.539-554.

Lawrence, P.R. 2010. The key job design problem is still Taylorism. *Journal of Organizational Behavior.* **31**, pp.412-421.

Lazarus, L., Chatzipolychroni, E., Rodafinos, A. and Eiser, J. 2012. Social cognitive predictors of smoking cessation intentions among smoker employees: The role of anticipated regret and social norms. *Addictive Behaviour.* **37**, pp.339-341.

Leach, D.J., Hagger-Johnson, G., Doerner, N., Wall, T., Turner, N., Dawson, J. and Grote, G. 2012. Developing a measure of work uncertainty. *Journal of Occupational and Organizational Psychology.* **86**(1), pp.85-99.

Leana, C., Appelbaum, E. and Shevchuk, I. 2009. Work process and quality of care in early childhood education: The role of job crafting. *Academy of Management Journal.* **52**(5), pp.1189-1192.

Lee, A. 1991. Integrating positivist and interpretivist approaches to organizational research. *Organizational Science.* **2**(4), pp.342-365.

Lee, M.C.C., Idris, M., Awang and Delfabbro, P.H. 2017. The linkages between hierarchical culture and empowering leadership and their effects on employees' work engagement: Work meaningfulness as a mediator. *International Journal of Stress Management.* **24**(4), pp.392-415.

Lent, R.W. and Brown, S.D. 2013. Social Cognitive Model of Career Self-Management: Toward a unifying view of adaptive career behaviour across the life span. *Journal of Counseling Psychology.* **60**(4), pp.557-568.

Lent, R.W., Brown, S.D. and Hackett, G. 1994. Toward a unifying social cognitive theory of career and academic interest, choice and performance [Monograph]. *Journal of Vocational Behavior.* **45**, pp.79-122.

Lent, R.W., Ezeofor, I., Morrison, M.A., Penn, L.T. and Ireland, G.W. 2016. Applying the social cognitive model of career self-management to career exploration and decision-making. *Journal of Vocational Behavior.* **93**, pp.47-57.

Lent, R.W., Ireland, G.W., Penn, L.T., Morris, T.R. and Sappington, R. 2017. Sources of self-efficacy and outcome expectations for career exploration and decision making: A test of the social cognitive model of career self-management. *Journal of Voational Behavior.* **99**, pp.107-117.

LePine, J.A., Erez, A. and Johnson, D.E. 2002. The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology.* **87**, pp.52-65.

Leung, S.A. 2008. The big five career theories. In: Athanasou, J.A. and Van Esbroeck, R. eds. *International Handbook of Career Guidance.* Springer Science and Business Media, pp.115-132.

Li, Y., Yang, B. and Ma, L. 2018. When is task conflict translated into employee creativity? The moderating role of growth need strength. *Journal of Personnel Psychology.* **17**(1), pp.22-32.

Lin, B., Law, K.S. and Zhou, J. 2017. Why is underemployment related to creativity and OCB? A task-crafting explanation of the curvilinear moderated relations. *Academy of Management Journal.* **60**(1), pp.156-177.

Lin, Y.-C., Yu, C. and Yi, C.-C. 2014. The effects of positive affect, person-job fit, and well-being on job performance. *Social Behavior and Personality.* **42**(9), pp.1537-1547.

Litano, M.L. and Major, D.A. 2016. Facilitating a whole-life approach to career development: The role of organzational leadership. *Journal of Career Development.* **43**(1), pp.52-65.

Little, T.A., Cunningham, W.A., Shahar, G. and Widaman, K.F. 2002. To Parcel or Not to Parcel: Exploring the question, weighing the merits. *Structural Equation Modeling: A multidisciplinary Journal.* **9**(2), pp.151-173.

Lopez-Andreu, M. and Verd, J.M. 2013. Employer strategies, capabilities and career development: Two case studies of Spanish service firms. *International Journal of Manpower.* **34**(4), pp.345-361.

Lu, C.-q., Wang, H.-j., Lu, J.-j., Du, D.-y. and Bakker, A.B. 2014. Does work engagement increase person-job fit? The role of job crafting and job insecurity. *Journal of Vocational Behavior.* **84**(2), pp.142-152.

Lumley, T., Diehr, P., Emerson, S. and Chen, L. 2002. The importance of the normality assumption in large public health data sets. *Annual Review of Public Health.* **23**, pp.151-169.

Luthans, F., Avey, J. and Patera, J. 2008a. Experimental analysis of a web-based training intervention to develop positive Psychological Capital. *Academy of Management Learning and Education.* **7**(2), pp.209-221.

Luthans, F., Avolio, B.J., Avey, J. and Norman, S. 2007a. Positive Psychological Capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology.* **60**(3), pp.541-572.

Luthans, F., Norman, S., Avolio, B.J. and Avey, J. 2008b. The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior.* **29**(2), pp.219-238.

Luthans, F., Youssef, C. and Avolio, B.J. 2007b. *Psychological Capital.* New York: Oxford University Press.

Lyons, P. 2008. The crafting of jobs and individual differences. *Journal of Business Psychology.* **23**(1-2), pp.25-36.

Mäkikangas, A., Aunola, K., Seppälä, P. and Hakenen, J. 2016. Work engagement-team performance relationship: Shared job crafting as a moderator. *Journal of Occupational and Organizational Psychology.* **89**(4), pp.772-790.

Mäkikangas, A., Bakker, A.B. and Schaufeli, W.B. 2017. Antecedents of daily team job crafting. *European Journal of Work and Organizational Psychology.* **26**(3), pp.421-433.

Marsh, D. and Stoker, G. 2002. *Theory and methods in political science.* 2nd Ed. Basingstoke: Palgrave Macmillan.

Martin, R., Guillaume, Y., Thomas, G., Lee, A. and Epitropaki, O. 2015. Leader-Member Exchange (LMX) and Performance: A meta-analytic review. *Personnel Psychology.* **Spring**, pp.1-55.

McClelland, G.P., Leach, D.J., Clegg, C.W. and McGowan, I. 2014. Collaborative crafting in call centre teams. *Journal of Occupational and Organizational Psychology.* **87**(3), pp.464-486.

Miraglia, M., Cenciotti, R., Alessandri, G. and Borgogni, L. 2017. Translating self-efficacy in job performance: The role of job crafting. *Human Performance.* **30**(5), pp.254-271.

Morgeson, F.D. and Humphrey, S.E. 2006. The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology.* **91**, pp.1321-1339.

Mourgues, C., Tan, M., Hein, S., Elliott, J.G. and Grigorenko, E.L. 2016. Using creativity to predict future academic performance: An application of Aurora's five subtests for creativity. *Learning and Individual Differences.* **51**, pp.378-386.

Narhgang, J., Morgeson, F. and Ilies, R. 2009. The development of leader-member exchanges: Exploring how personality and performance influence leader and member relationships over time. *Organizational Behavior and Human Decision Processes.* **108**, pp.256-266.

Nelson, A., Cooper, C.L. and Jackson, P.R. 1995. Uncertainty amidst change: The impact of privatisation on employee job satisfaction and wellbeing. *Journal of Occupational and Organizational Psychology.* **68**, pp.57-71.

Newman, A., Donohue, R. and Eva, N. 2017. Psychological safety: A systematic review of the literature. *Human Resource Management Review.* **27**(3), pp.521-535.

Nguyen, H., Johnson, A., Collins, C. and Parker, S.K. 2017. Confidence matters: Self-efficacy moderates the credit that supervisors give to adaptive and proactive role behaviours. *British Journal of Management.* **28**(2), pp.315-330.

Nie, Y., Chua, B.L., Yeung, A.S., Ryan, R.M. and Chan, W.Y. 2015. The importance of autonomy support and the mediating role of work motivation for well-being: Testing self-determinatoin theory in a Chinese work organisation. *International Journal of Psychology.* **50**(4), pp.245-255.

Nielsen, K. and Abildgaard, J. 2012. The development and validation of a job crafting measure for use with blue-collar workers. *Work and Stress.* **26**(4), pp.365-384.

Niessen, C., Weseler, D. and Kostova, P. 2016. When and why do individuals craft their jobs? The role of individual motivation and work characteristics for job crafting. *Human Relations.* **69**(6), pp.1287-1313.

Nordhall, O. and Knez, I. 2018. Motivation and Justice at Work: The Role of Emotion and Cognition Components of Personal and Collective Work Identity. *Frontiers in Psychology.* **8**.

Oh, S.H.D., Chen, Y. and Sun, F. 2015. When is a good citizen valued more? Organizational citizenship behavior and performance evaluation. *Social Behavior and Personality.* **43**(6), pp.1009-1020.

Olafsen, A.H., Niemiec, C.P., Halavari, H., Deci, E.L. and Williams, G.C. 2017. On the dark side of work: A longitudinal analysis using self-determination theory. *European Journal of Work and Organizational Psychology.* **26**(2), pp.275-285.

Oldham, G.R. and Fried, Y. 2016. Job design research and theory: Past, present and future. *Organizational Behavior and Human Decision Processes.* **136**, pp.20-35.

Oldham, G.R. and Hackman, J.R. 2010. Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior.* **31**, pp.463-479.

Oxford English Dictionary. 2007. 3rd Ed. Oxford: Clarendon Press.

Ozyilmaz, A., Erdgan, B. and Karaeminogullari, A. 2018. Trust in organization as a moderator of the relationship between self-efficacy and workplace outcomes: A social cognitive theory-based examination. *Journal of Occupational and Organizational Psychology.* **91**(1), pp.181-204.

Pacauskas, D. and Rajala, R. 2017. Information system users' creativity: A meta-analysis of the link between IT use and creative performance. *Information Technology and People.* **30**(1), pp.81-116.

Paller, B.T. 1989. Visual perception, observation systems and empiricism. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition.* **55**(1), pp.65-80.

Parker, S.K. 1998. Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology.* **83**(6), pp.835-852.

Parker, S.K., Williams, H.M. and Turner, N. 2006. Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology.* **91**(3), pp.636-652.

Patterson, M., West, M., Shackleton, V., Dawson, J., Lawtham, R., Maitlis, S., Robinson, D. and Wallace, A. 2005. Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of Organizational Behavior.* **26**, pp.379-408.

Peng, Y. and Mao, C. 2015. The impact of person-job fit on job satisfaction: The mediator role of self-efficacy. *Social Indicators Research.* **121**(3), pp.805-813.

Peterson, C. and Seligman, M. 2004. *Character Strengths and Virtues: A handbook and classification.* Washingtion, DC: American Psychological Association.

Petrou, P., Demerouti, E. and Breevaart, K. 2013. Job crafting as a key to successful organizational change. *Behavior and Organization.* **26**(1), pp.32-45.

Petrou, P., Demerouti, E., Peeters, M., Schaufeli, W.B. and Hetland, J. 2012. Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior.* **33**(8), pp.1120-1141.

Petrou, P., Demerouti, E. and Schaufeli, W.B. 2015. Job crafting in changing organizations: Antecedents and implications for exhaustion and performance. *Journal of Occupational Health Psychology.* **Advance online publication**.

Podsakoff, N.P., Blume, B.D., Whiting, S.W. and Podsakoff, P.M. 2009. Individual and organizational level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology.* **94**(1), pp.122-141.

Podsakoff, N.P., Whiting, S.W., Welsh, D.T. and Mai, K.M. 2013. Surveying for "Artifacts": The Susceptibility of the OCB-Performance Evaluation Relationship to Common Rater, Item, and Measurement Context Effects *Journal of Applied Psychology.* **98**(5), pp.863-874.

Podsakoff, P.M. and MacKenzie, S.B. 1997. Impact of organizational citizenship behavior on organizational performance: A review and suggestion for future research. *Human Performance.* **10**(2), pp.133-151.

Podsakoff, P.M., MacKenzie, S.B., Lee, J. and Podsakoff, N.P. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology.* **88**(5), pp.879-903.

Podsakoff, P.M., MacKenzie, S.B. and Podsakoff, N.P. 2012. Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology.* **63**.

Prussia, G.E., Anderson, J.S. and Manz, C.C. 1998. Self-leadership and performance outcomes: The mediating influence of self-efficacy. *Journal of Organizational Behavior.* **19**, pp.523-538.

Rhemtulla, M. 2016. Population performance of SEM parceling strategies under measurement and structural model misspecification. *Psychological MEthods.* **21**(3), pp.348-368.

Rindfleisch, A., Malter, A.J., Ganasan, S. and Moorman, C. 2008. Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines *Journal of Marketing Research.* **45**(3), pp.261-279.

Robinson, M. A. 2018. Using multi-item psychometric scales for research and practice in human resource management. *Human Resource Management*, **57**(3), pp.739–750.

Roche, M. and Haar, J.M. 2013. A metamodel approach towards self-determination theory: A study of New Zealand managers' organisational citizenship behaviours. *The International Journal of Human Resource Management.* **24**(18), pp.3397-3417.

Rodrigues, R., Guest, D. and Budjanovcanin, A. 2013. From anchors to orientations: Towards a contemporary theory of career preferences. *Journal of Vocational Behavior.* **83**, pp.142-152.

Rounds, J.B., Dawis, R.V. and Lofquist, L.H. 1987. Measurement of Person-Environment Fit and Prediction of Satisfaction in the Theory of Work Adjustment *Journal of Vocational Behavior.* **31**, pp.297-218.

Rudolph, C.W., Katz, I.M., Lavigne, K.N. and Zacher, H. 2017. Job Crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior.* **102**, pp.112-138.

Runhaar, P., Konermann, J. and Sanders, K. 2013. Teachers' organizational citizenship behaviour: Considering the roles of their work engagement, autonomy and leader-member exchange. *Teaching and Teacher Education.* **50**, pp.99-108.

Santos-Vijande, M.L., Lopez-Sanchez, J.A. and Trespalacios, J.A. 2012. How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research.* **65**(8), pp.1079-1089.

Savickas, M. 2005. The theory and practice of career construction. In: Lent, R.W. and Brown, S. eds. *Career development and counseling: Putting theory and research to work.* Hoboken, New Jersey: John Wiley & Sons, pp.42-70.

Scandura, T.A. and Schriesheim, C. 1994. Leader-member exchange and supervisor career mentoring as complementary constructs in leadership research. *Academy of Management Journal.* **37**(6), pp.1588-1602.

Scandura, T.A. and Williams, E.A. 2004. Mentoring and transformational leadership: The role of supervisory career mentoring. *Journal of Vocational Behavior.* **65**, pp.448-468.

Schneider, B., Ehrhart, M. and Macey, W. 2013. Organizational climate and culture. *Annual Review of Psychology.* **64**, pp.361-388.

Schrag, F. 1992. In defence of positivist research paradigms. *Educational Researcher.* **21**(5), pp.5-7.

Schumacker, R.E. and Lomax, R.G. 1996. *A beginners guide to structural equation modelling.* Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.

Seligman, M. 2002. *Authentic happiness.* New York: Free Press.

Seppala, T., Lipponen, J., Pirttila-Backman, A.-M. and Lipsanen, J. 2011. Reciprocity of trust in the supervisor-subordinate relationship: The mediating role of autonomy and the sense of power. *European Journal of Work and Organizational Psychology.* **20**(6), pp.755-778.

Shin, I., Hur, W.-M. and Oh, H. 2015. Essential precursors and effects of employee creativity in a service context: Emotional labor strategies and official job performance. *Career Development International.* **20**(7), pp.733-752.

SHRM (Society for Human Resource Management). 2017. *2017 Human Capital Benchmarking Report.* https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/2017-Human-Capital-Benchmarking.pdf

Siegel, S. and Kaemmerer, W. 1978. Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology.* **63**(5), pp.553-562.

Singh, R. and Greenhaus, J.H. 2004. The relation between career decision-making strategies and person-job fit: A study of job changers. *Journal of Vocational Behavior.* **64**(1), pp.198-221.

Slemp, G.R. and Vella-Brodrick, D.A. 2014. Optimising employee mental health: The relationship between Intrinsic Needs Satisfaction, Job Crafting and Employee Well-being. *Journal of Happiness Studies.* **15**, pp.957-977.

Smith, K.M., Else, F. and Crookes, P.A. 2014. Engagement and academic promotion: A review of the literature. *Higher Education Research and Development.* **33**(4), pp.836-847.

Smith, R.A., Crafford, A. and Schurink, W.J. 2015. Reflections on shifts in the work identity of research team members. *South African Journal of Human Resource Management.* **13**(1), p12.

Solberg, E. and Wong, S.I. 2016. Crafting one's job to take charge of roal overload: When proactivitiy requires adaptivity across levels. *The Leadership Quarterly.* **27**, pp.713-725.

Spector, P.E. 2011. The relationship of personality to counterproductive work behavior (CWB): An integration of perspectives. *Human Resource Management Review.* **21**(SI 4), pp.342-352.

Spector, P.E. and Zhou, Z.E. 2014. The moderating role of gender in relationships between stressors and personality with counterproductive work behavior. *Journal of Business and Psychology.* **29**(4), pp.669-681.

Stajkovic, A.D. and Luthans, F. 1998. Self-efficacy and work-related performance: a meta-analysis. *Psychological Bulletin.* **124**(2), pp.240-261.

Stevens, J.P. 2009. *Applied multivariate statistics for the social sciences.* 5th ed. New York: Routledge.

Sturges, J., Conway, N., Guest, D. and Liefooghe, A. 2005. Managing the career deal: The psychological contract as a framework for understanding career management, organizational commitment and work behavior. *Journal of Organizational Behavior.* **26**(7), pp.821-838.

Sturges, J., Conway, N. and Liefooghe, A. 2010. Organizational support, individual attributes, and the practice of career self-management behavior. *Group and Organization Management.* **35**(1), pp.108-141.

Sturges, J., Guest, D., Conway, N. and Davey, K. 2002. A longitudinal study of the relationship between career management and organizational commitment among graduates in the first ten years at work. *Journal of Organizational Behavior.* **23**(6), pp.731-748.

Stynen, D., Forrier, A., Sels, L. and De Witte, H. 2015. The relationship between qualitative job insecurity and OCB: Differences across age groups. *Economic and Industrial Democracy.* **36**(3), p2015.

Subbaye, R. and Vithal, R. 2016. Gender, teaching and academic promotions in higher education. *Gender and Education.* **29**(7), pp.926-951.

Super, D.E. 1992. Toward a comprehensive theory of career development. In: Montross, D. and Shinkman, C. eds. *Career development: Thoery and practice.* Springfield, England: Charles C Thomas, pp.35-64.

Sutherland, K.A. 2017. Constructions of success in academia: An early career perspective. *Studies in Higher Education.***42**(4), pp.743-759.

Tabachnick, B.G. and Fidell, L.S. 2012. *Using multivariate statistics.* 6th ed. Boston: Pearson Education.

Taris, T.W. 2007. Is there a relationship between burnout and objective performance? A critical review of 16 studies. *Work and Stress.* **20**(4), pp.316-334.

Taris, T.W. and Schreurs, P.J.G. 2009. Well-being and organizational performance: An organizational-level test of the happy-productive worker hypothesis. *Work and Stress.* **23**(2), pp.120-136.

Thanassoulis, E., Sotiros, D., Koronakos, G. and Despotis, D. 2016. Assessing the cost-effectiveness of University academic recruitment and promotion policies. *European Journal of Operational Research.* **264**(2), pp.742-755

Thumin, F. and Thumin, L. 2011. The measurement and interpretation of organizational climate. *Journal of Psychology.* **145**(2), pp.93-109.

Tims, M., Bakker, A. and Derks, D. 2012. Development and validation of the job crafting scale. *Journal of Vocational Behavior.* **80**, pp.173-186.

Tims, M., Bakker, A. and Derks, D. 2013a. The impact of job crafting on job demands, job resources and well-being. *Journal of Occupational Health Psychology.* **18**(2), pp.230-240.

Tims, M. and Bakker, A.B. 2010. Job crafting: towards a new model of individual job redesign. *South African Journal of Industrial Psychology.* **36**(2).

Tims, M., Bakker, A.B. and Derks, D. 2014. Daily job crafting and the self-efficacy - performance relationship. *Journal of Managerial Psychology.* **29**(5), pp.490-507.

Tims, M., Bakker, A.B., Derks, D. and Van Rehnen, W. 2013b. Job crafting at the team and individual level: Implications for work engagement and performance. *Group and Organization Management.* **38**(4), pp.427-454.

Tims, M., Derks, D. and Bakker, A.B. 2016. Job crafting and its relationships with person-job fit and meaningfulness: A three-wave study. *Journal of Vocational Behavior.* **92**, pp.44-53.

Tjosvold, D., Wedley, W. and Field, R. 1986. Constructive Controversy: The Vroom-Yetton Model and management decision making. *Journal of Occupational Behaviour.* **7**(2), pp.125-138.

Tomarken, A.J. and Waller, N.G. 2005. Structural Equation Modeling: Strengths, limitations, and misconceptions. *Annual Review of Clinical Psychology.* **1**, pp.31-65.

UCU (Universities and College Union). 2013. *Higher Stress: A survey of stress and wellbeing among staff in higher education.* https://www.ucu.org.uk/media/5911/Higher-stress-a-survey-of-stress-and-well-being-among-staff-in-higher-education-Jul-13/pdf/HE_stress_report_July_2013.pdf.

UCU (Universities and College Union). 2014. *HE (Higher Education) Pay Framework Agreement 2004.* https://www.ucu.org.uk/framework

Van Dam, K., Nikolova, I. and Van Ruysseveldt, J. 2013. The importance of LMX and situational goal orientation as predictors of job crafting. *Gedrag & Organisatie.* **26**(1), pp.66-84.

Van de Schoot, R. and Depaoli, S. 2014. Bayesian analyses: Where to start and what to report. *European Health Psychologist.* **16**(2), pp.75-84.

Van de Schoot, R., Winter, S.D., Ryan, O., Zondervan-Zwijnenberg, M. and Depaoli, S. 2017. A systematic review of Bayesian articles in psychology: The last 25 years. *Psychological Methods.***22**(2), SI: Bayesian Data Analysis Part 1, pp.217-239.

Van den Broeck, A., Ferris, D., Chang, C.-H. and Rosen, C. 2016. A review of self-determination theory's basic psychological needs at work. *Journal of Management.* **42**, pp.1195-1129.

Van Wingerden, J. and Niks, I.M.W. 2017. Construction and validation of the perceived opportunity to craft scale. *Frontiers in Psychology.* **8**, p573.

Van Wingerden, J. and Poell, R.F. 2017. Employees' perceived opportunities to craft and in-role performance: The mediating role of job crafting and work engagement. *Frontiers in Psychology.* **25**(8),p.1876.

Vecchio, R. and Norris, W. 1996. Predicting employee turnover from performance, satisfaction and leader-member exchange. *Journal of Business and Psychology.* **11**, pp.113-125.

Vogel, R.M., Rodell, J.B. and Lynch, J.W. 2016. Engaged and productive misfits: How job crafting and leisure activity mitigate the negative effects of value incongruence. *Academy of Management Journal.* **59**(5), pp.1561-1584.

Volmer, J., Spurk, D. and Niessen, D. 2012. Leader-Member Exchange (LMX), Job autonomy and creative work involvement. *The Leadership Quarterly.* **23**, pp.456-465.

Votsis, I. 2015. Perception and observation unladened. *Philosophical Studies.* **172**(3), pp.563-585.

Vough, H.C., Bindl, U.K. and Parker, S.K. 2017. Proactivity routines: The role of social processes in how employees self-initiate change. *Human Relations.* **70**(10), pp.1191-1216.

Walk, M. and Handy, F. 2018. Job crafting as reaction to organizational change. *Journal of Applied Behavioral Science.* **54**(3), pp.349-370.

Wall, T., Cordery, J. and Clegg, C. 2002. Empowerment, Performance and Operational Uncertainty: A theoretical integration. *Applied Psychology - An International Review.* **51**(1), pp.146-169.

Walsh, K. and Gordon, J.R. 2008. Creating an individual work identity. *Human Resource Management Review.* **18**(1), pp.46-61.

Walumbwa, F.O., Avolio, B.J., Gardner, W.L., Wernsing, T.S. and Peterson, S.J. 2008. Authentic leadership: Development and validation of a theory based measure. *Journal of Management.* **34**(1), pp.89-126.

Wellman, N. and Spreitzer, G. 2011. Crafting scholarly life: Strategies for creating meaning in academic careers. *Journal of Organizational Behavior.* **32**, pp.927-931.

Wesarat, P.-o., Sharif, M.Y. and Majid, A.H.A. 2014. A review of organizational and individual career management: A dual perspective. *International Journal of Human Resource Studies.* **4**(1), pp.101-113.

Weseler, D. and Niessen, C. 2016. How job crafting relates to task performance. *Journal of Managerial Psychology.* **31**(3), pp.672-685.

Wiley, C., Wallingford, V., Monllor-Tormos, M. and Konyu-Fogel, G. 2016. Faculty promotion in business schools: What counts and what should count. *Journal of Higher Education Theory and Practice.* **16**(4), pp.105-123.

Williams, G.C., Halvari, H., Niemiec, C.P., Sørebø, Ø., Olafsen, A.H. and Westbye, C. 2014. Managerial support for basic psychological needs, somatic symptom burden and work-related correlates: A self-determination theory perspective. *Work and Stress.* **28**(4), pp.404-419.

Wong, C.M. and Tetrick, L.E. 2017. Job Crafting: Older workers mechanism for maintaining person-job fit, *Frontiers in Psychology*, **8** (1458), pp.1-12

Wood, S. and de Menezes, L.M. 2011. High involvement management, high-performance work systems and well-being. *International Journal of Human Resource Management.* **22**(7), pp.1586-1610.

Wright, T. and Hobfoll, S. 2004. Commitment, Psychological Well-Being and Job Performance: An Examination of Conservation of Resources (COR) Theory and Job Burnout. *Journal of Business Management.* **9**(4), pp.389-406.

Wright, T.A. 2010. Much More than Meets the Eye: The Role of Psychological Well-being in Job Performance, Employee Retention and Cardiovascular Health. *Organizational Dynamics.* **39**(1), pp.13-23.

Wright, T.A., Cropanzano, R. and Bonett, D.G. 2007. The moderating role of employee positive well being on the relation between job satisfaction and job performance. *Journal of Occupational Health Psychology.* **12**(2), pp.93-104.

Wright, T.A. and Quick, J.C. 2009. The role of positive-based research in building the science of organizational behavior. *Journal of Organizational Behavior.* **30**(2), pp.329-336.

Wrzesniewski, A. and Dutton, J.E. 2001. Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review.* **26**(2), pp.179-201.

Wu, C.-H. and Parker, S.K. 2017. The role of leader support in facilitating proactive work behaviour: A perspective from attachment theory. *Journal of Management.* **43**(4), pp.1025-1049.

Xie, B., Xia, M., Xin, X. and Zhou, W. 2016. Linking calling to work engagement and subjective career success: The perspective of career construction theory. *Journal of Vocational Behavior.* **94**, pp.70-78.

Yetter, G. and Capaccioli, K. 2010. Differences in responses to web and paper surveys among school professionals. *Behavior Research Methods.* **42**(1), pp.266-272.

Zhou, J. and George, J.M. 2001. When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal.* **44**, pp.682-696.

Zyphur, M.J. and Oswald, F., L. 2015. Bayesian Estimation and Inference: A user's guide. *Journal of Management.* **41**(2 (Special Issue: Bayesian Probability and Statistics in Management Research)), pp.390-420.