

Change in Person-Job Fit Perceptions
and Job Crafting Behaviours:
Understanding their Intertwined Nature

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy (PhD) is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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List of Abbreviations

BCCI: bias corrected confidence interval
COR: conservation of resources theory
DA fit: demands-abilities fit
CFA: confirmatory factor analysis
CFI: comparative fit index
KSA: knowledge, skills, abilities
IFI: incremental fit index
IMJC: integrated model of job crafting
JCM: job crafting model
JDRMJC: job demands-resources model of job crafting
LCS: latent change score
LMS: latent moderated structural equation model(ing)
NS fit: needs-supplies fit
OVC: organisational value congruence
PE fit: person-environment fit
PG fit: person-group fit
PI: product indicator
PJ fit: person-job fit
PO fit: person-organisation fit
PS fit: person-supervisor fit
PV fit: person-vocation fit
RMSEA: root mean square of error of approximation
SEM: structural equation model(ing)
TLI: Tucker-Lewis index
TWA: theory of work adjustment

Abstract

Nicolas Jourdan

Change in Person-Job Fit Perceptions and Job Crafting Behaviours: Understanding their Intertwined Nature

Positive employee attitudes and behaviours arise when employees perceive that they are compatible with their jobs, known as person-job (PJ) fit (Kristof-Brown et al., 2005). Yet, to date, relatively few studies have examined the antecedents of PJ fit perceptions and their dynamic nature (e.g., Bayl-Smith & Griffin, 2018; De Cooman et al., 2019). In particular, little is known about the proactive role that employees may play in the development of these perceptions. Although scholars have proposed that a lack of PJ fit may trigger job crafting behaviours aimed at improving PJ fit (Tims & Bakker, 2010), more research is needed to test this proposition. Approaching PJ fit as both perceived needs-supplies (NS) fit and demands-abilities (DA) fit, the present research contributes to testing this proposition and develops theoretical arguments about the differential impact of these types of fit on job crafting behaviours, based on conservation of resources theory (Hobfoll, 1989). In so doing, approach and avoidance crafting behaviours are distinguished (Zhang & Parker, 2019). In addition, the interaction between perceived NS fit and DA fit in predicting job crafting behaviours is proposed and tested. Using a three-month time-lag study design, hypotheses were tested using 492 participants from a heterogeneous group of US workers. Results from structural equation modelling showed that perceived DA fit negatively affected approach and avoidance crafting behaviours, while perceived NS fit facilitated approach crafting behaviours. Perceived NS fit strengthened the effect of perceived DA fit on job crafting behaviours. In addition, approach crafting behaviours facilitated a positive change in PJ fit perceptions, while avoidance crafting behaviours hindered this development. Overall, findings suggest that PJ fit perceptions might change through job crafting behaviours over time. The theoretical and practical implications of these findings are discussed and scholars are encouraged to carry out further research to assess their generalisability.

Chapter One

Introduction

1.1 Introduction

“Without the right people in the right positions, neither a company nor its individual units can turn in exceptional performance” (Luecke, 2002, p. xi).

Most human resources management scholars and practitioners will have come across a similar statement, either whilst reading a book related to the field or listening to the speech of a company’s executive. Having the *right* people in the *right* jobs is critical for organisational effectiveness. In other words, organisations may benefit from hiring and retaining employees who match well or *fit* well with their jobs because these employees might perform better than others. In accordance with this perspective, employees who perceive that they fit with their jobs, known as person-job (PJ) fit perceptions, experience greater job satisfaction, greater organisational commitment, increased work performance, and reduced turnover intentions (Kristof-Brown et al., 2005; Oh et al., 2014). Importantly, these perceptions of PJ fit do not affect these desirable employee outcomes only, but they also influence a variety of attitudes and behaviours that pertain to the workplace (Kristof-Brown et al., 2005).

Yet, despite the substantial behavioural and attitudinal impact of these perceptions, relatively little research has investigated how they form and develop over time (Kim et al., 2020). Indeed, although research on PJ fit perceptions has gained momentum over the past few years, only a dozen empirical studies have delved into the dynamics of PJ fit perceptions (Bayl-Smith & Griffin, 2018; Boon & Biron, 2016; Caldwell, 2011; de Beer et al., 2016; DeRue & Morgeson, 2007; Gabriel et al., 2014; Kim et al., 2020; Kooij et al., 2017; Lu et al., 2014; Niessen et al., 2016; Sylva et al., 2019;

Tims et al., 2016; Vleugels et al., 2018; Wang et al., 2011). While different research avenues were taken in these studies, the exploration of the proactive role that employees themselves play in changing their own PJ fit perceptions warrants further attention (e.g., Bayl-Smith & Griffin, 2018).

In particular, further research is required to investigate the PE tenet that individuals might seek to improve their fit with their jobs, or might engage in *coping* activities aiming to deal with lack of fit (French et al., 1974; Harrison, 1978). While results from a few studies suggest that proactive behaviours may positively affect PJ fit perceptions over time (Bayl-Smith & Griffin, 2018; Kooij et al., 2017; Lu et al., 2014; Sylva et al., 2019; Tims et al., 2016), the generalisability of such a finding is difficult to evaluate. First, there are only a handful of these studies. Second, these investigations have focused on different subsets of proactive behaviours. Third, they have relied on generally small or medium sample sizes (e.g., $N = 94$, Bayl-Smith & Griffin; $N = 86$, Kooij et al., 2017; $N = 114$, Tims et al., 2016). Additionally, existing empirical investigations have approached PJ fit perceptions as an outcome, rather than as an antecedent, of proactive behaviours.

As a result, our knowledge of (a) how employees react to their own PJ fit perceptions, in the form of proactive behaviours, and (b) whether these behaviours are related to a change in PJ fit perceptions, is limited and lacking extensive empirical research. Hence, it is difficult to challenge De Cooman et al.'s observation (2019, p. 2) that “the fit literature is still lacking theory as well as empirical evidence concerning the temporality and dynamics of fit and fitting”. A similar appreciation may be made regarding Bayl-Smith and Griffin's (2018, p. 209) statement that “to date the theoretical and empirical link between adaptive and proactive behaviors and P-E fit has been under-developed”. Addressing these research gaps is crucial in order to understand, and

subsequently facilitate, the development of PJ fit perceptions, which are key determinants of employee outcomes.

1.2 Research Aims

This research, therefore, aims to examine both theoretically and empirically the relationship between change in PJ fit perceptions and a set of proactive behaviours referred to as *job crafting behaviours*. These behaviours are particularly relevant to better understanding how PJ fit perceptions change over time, as they have explicitly been argued to be intertwined with change in PJ fit (Tims & Bakker, 2010). More specifically, the present research aims to address the following general questions: how are PJ fit perceptions and job crafting behaviours related? Do lower PJ fit perceptions trigger these behaviours, as suggested by Tims and Bakker (2010) and Tims et al. (2016)? Or could these behaviours also be facilitated by higher PJ fit perceptions, reflecting a more complex relationship? In turn, are job crafting behaviours related to a positive change in PJ fit perceptions? Finally, do PJ fit perceptions change through these behaviours? In order to examine these questions, a time-lag study was used with data being collected twice, separated by a three-month interval, from 492 employees working in different organisations and industries in the United States. In investigating whether PJ fit perceptions change through job crafting behaviours, this study contributes to the literature in several ways.

1.3 Research Contributions

The contributions of this research are theoretical, empirical and methodological, each of these being discussed in turn.

1.3.1 Theoretical and Empirical Contributions

From a theoretical perspective, the present research contributes to a better understanding of job crafting behaviours. Indeed, as proactive behaviours (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001), job crafting behaviours may be defined

by three characteristics: they are (a) self-initiated, (b) future-oriented, and (c) goal-oriented (Grant & Ashford, 2008; Parker et al., 2010; Parker & Collins, 2010). Yet, theoretical arguments and empirical findings conflict regarding the goal-oriented nature of job crafting behaviours. Indeed, while these behaviours have been theorised to target an improvement in PJ fit (Tims & Bakker, 2010), no empirical studies, to the best of my knowledge, have shown that job crafting behaviours stem from lower PJ fit perceptions. More precisely, the effect of PJ fit perceptions on job crafting behaviours seems to have been tested only twice and in vain (Kooij et al., 2017; Tims et al., 2016). Consequently, it is rather unclear whether these behaviours, which may affect PJ fit perceptions (Kooij et al., 2017; Lu et al., 2014; Tims et al., 2016), indeed stem from a lack of PJ fit as proposed by scholars (Tims & Bakker, 2010; Zhang & Parker, 2019).

In investigating the effect of PJ fit perceptions on job crafting behaviours, the present research contributes to the literature by offering a new theoretical perspective on this relationship, building on the distinct conceptualisations of PJ fit (Caplan, 1987; Edwards, 1991). Indeed, while it has been proposed that job crafting behaviours may follow from a lack of PJ fit (Tims & Bakker, 2010; Zhang & Parker, 2019), this proposition does not account for the fact that PJ fit can be conceptualised in two very distinct ways, which are needs-supplies (NS) fit and demands-abilities (DA) fit (Caplan, 1987; Edwards, 1991). In employing the term “PJ fit”, scholars have actually proposed that job crafting behaviours may follow from both a lack of NS fit and DA fit, treating these two conceptualisations of PJ fit as interchangeable and bearing the same effects on job crafting behaviours. Using Conservation of Resources theory (COR; Hobfoll, 1989), I offer an alternative to this proposition and elaborate on why NS fit and DA fit perceptions may bear differential effects on job crafting behaviours.

Furthermore, I develop the argument that these two conceptualisations of PJ fit may interact in predicting job crafting behaviours. As suggested by Dawis (2005),

adjustment behaviours might be the resultant of the joint influence of NS fit and DA fit. Yet, the interaction between perceived NS fit and DA fit in the prediction of job crafting behaviours has, to the best of my knowledge, not been examined. More generally, a look at the person-environment fit literature, from which PJ fit is derived (Kristof-Brown et al., 2005), may show that effects resulting from the interaction between different conceptualisations of fit have rarely been explored. Therefore, the present research contributes to addressing the call to investigate the effect of the interaction between different types of fit on individual attitudes and behaviours (e.g., De Cooman et al., 2019; Kristof-Brown & Guay, 2011). In so doing, the present research also addresses a gap in extant knowledge pertaining to the identification of new job crafting boundary conditions (Zhang & Parker, 2019).

In addition, recent advances in job crafting theory indicate that the antecedents and outcomes of job crafting behaviours should be studied in relation to both approach and avoidance crafting, which are two distinct dimensions of job crafting (Zhang & Parker, 2019). Yet, Zhang and Parker's review of the literature indicates that avoidance crafting behaviours have not been studied as an antecedent of PJ fit perceptions. Importantly, although approach crafting behaviours have been investigated as a predictor of PJ fit perceptions (e.g., Kooij et al., 2017; Lu et al., 2014), these behaviours have, to the best of my knowledge, not been studied as a predictor of *intra-individual change* in PJ fit perceptions. Therefore, the absence of research pertaining to the relationship between (a) avoidance and approach crafting behaviours and (b) *intra-individual change* in PJ fit perceptions has to be studied, both from a theoretical and an empirical perspective. The present research contributes to the literature by so doing.

Building on the aforementioned research gaps, it follows that the question of whether PJ fit perceptions change through job crafting behaviours remains unanswered. Investigating this relationship is needed in order to understand whether job crafting

behaviours and change in PJ fit perceptions are intertwined, as frequently implied when *job crafting* is defined (e.g., Akkermans & Tims, 2017; Radstaak & Hennes, 2017; Tims et al., 2012). Indeed, finding that PJ fit perceptions may affect job crafting behaviours (contribution 1), and that job crafting behaviours may lead to a change in PJ fit perceptions (contribution 2), is theoretically and practically interesting as they would contribute to filling such knowledge gaps. However, these two findings would not indicate an interdependence between change in PJ fit perceptions and job crafting behaviours. They would merely indicate that job crafting behaviours, both following from and not following from PJ fit perceptions, could result in a change in PJ fit perceptions. Consequently, studying whether PJ fit perceptions change *through* job crafting behaviours is necessary to illuminate a potential interdependence between PJ fit perceptions and job crafting behaviours. The present research contributes to the literature by investigating this indirect relationship.

Importantly, making the distinction between perceived NS fit and DA fit in the present research also contributes to better understanding how these two PJ fit perceptions may relate to each other over time and through job crafting behaviours. While it is theoretically possible that job crafting behaviours, potentially stemming from lower DA fit perceptions, may affect a change in not only perceived DA fit but also NS fit, this theoretical possibility has, to the best of my knowledge, not been explored in prior research. Consequently, the present research provides insights into better understanding of how different types of fit relate to each other over time (Boon & Biron, 2016; Yu, 2016). In separating perceived NS fit from DA fit, and approach crafting behaviours from avoidance crafting behaviours, the present research also contributes to better integrating the PE fit and the job crafting frameworks (Dust & Tims, 2019). Overall, the present research provides some responses to the following research questions, which each

contributes to filling a gap in the literature and to a better understanding of the relationship between change in PJ fit perceptions and job crafting behaviours:

RQ1: Do perceived NS fit and DA fit differentially predict job crafting behaviours?

RQ2: Do perceived NS fit and DA fit interact in predicting of job crafting behaviours?

RQ3: Do approach and avoidance crafting differentially affect change in perceived NS fit and DA fit?

RQ4: Do perceived NS fit and DA fit change through job crafting behaviours?

RQ5: Do perceptions of NS fit and DA fit affect each other's over time and through job crafting behaviours?

In summary, the present research contributes to both testing and revisiting existing theory on the relationship between PJ fit perceptions and job crafting behaviours. In this process, it investigates a relationship that has remained overlooked (i.e., the relationship between PJ fit perceptions and avoidance crafting), and it focuses on the relationship between intra-individual change in PJ fit perceptions and job crafting behaviours. In summary, the present research contributes to extending our knowledge of how both perceived NS fit and DA fit change and relate to each other over time through job crafting behaviours. The contributions of this thesis are both of theoretical and empirical nature (Colquitt & Zapata-Phelan, 2007; Corley & Gioia, 2011; Klein & Potosky, 2019; Whetten, 1989).

1.3.2 Methodological Contributions

The detailed aims and contributions of the present research are consistent with using a moderated mediation model. While this type of research model is frequently used in classical path analysis, it is not commonly used in the context of structural equation modelling and latent variables (Sardeshmukh & Vandenberg, 2017). Hence, this research

contributes to the literature by employing a type of analysis that has rarely been used: a structural equation model (SEM) featuring moderated mediation.

Importantly, modelling of the variable representing the interaction between perceived NS fit and DA fit is processed using residual-centred product factor scores. Although this method follows from an observation formulated by Geldhof et al. (2013, p.44), who stated that “the product of latent variables score should be residual centred relative to latent variable main effects, not relative to the main effect indicators”, this research is the first, to my knowledge, to implement this moderation strategy. Opting for the residual-centred product factor scores strategy is desirable for obtaining interpretable conditional effects of PJ fit perceptions on job crafting behaviours. The present research discusses in more detail this analytical strategy. In order to support the interaction effect results obtained with this technique, a parallel analysis using both the products of mean-centred indicators (Lin et al., 2010) and the product of residual-centred indicators (Little, Bovaird, et al., 2006) is used.

In addition, the SEM used in the present research addresses change in perceived NS fit and DA fit with the use of latent change scores (LCS) (McArdle, 2009). While several studies have investigated the effects of job crafting behaviours on residual change in PJ fit perceptions (PJ fit perceptions at T2 controlling for their initial level at T1) (e.g., Lu et al., 2014; Tims et al., 2016), no study to date seems to have examined the effects of job crafting behaviours on intra-individual change in PJ fit perceptions. In the context of the present research, focusing on intra-individual rather than residual change is warranted because (a) differences might exist across individuals regarding their initial levels of PJ fit perceptions, (b) there may not be a unique pattern of change (i.e., some employees might experience a decrease in PJ fit perceptions while some others may experience an increase in these perceptions), (c) the relationships being studied are all about intra-individual phenomena (i.e., PJ fit perceptions are *self*-evaluation, and job crafting

behaviours are *self*-initiated). In using the LCS, and modelling intra-individual change in PJ fit perceptions, the present research contributes to the literature in an important way.

Furthermore, this moderated mediation LCS model features a second-order factor representing approach crafting behaviours. While such hierarchical factor modelling of job crafting was introduced by Zhang and Parker in 2019, this research framework seems to have been used once only to date (Costantini et al., 2020), which warrants further research attention. Importantly, modelling approach crafting as a higher-order factor of several lower-order factors (i.e., seeking resources and seeking challenges), and not as a variable averaging the indicator scores of these factors (i.e., mean score of all items measuring both seeking resources and seeking challenges), has implications for the robustness of the research findings. Indeed, contrary to averaging scale scores, modelling latent variables allows for better addressing measurement error (Little, 2013).

1.4 Practical Significance of the Present Research

Beyond theoretical and empirical contributions, this research has important implications for practice. For instance, finding that employees may engage in job crafting behaviours because their abilities do not match the requirements of their jobs may bear implications for HR practitioners. This would indeed suggest that employee performance may not be addressed by top-down interventions only (organisation-driven interventions), but also by bottom-up actions (employee-driven actions).

Importantly, self-determination theory suggests that people may be more motivated to reach their goals when their actions are self-initiated than when their actions are imposed by the work environment (Deci & Ryan, 2000). Being observable, job crafting behaviours could potentially inform managers of a mis-fitting situation, which could be dealt with by modifying job characteristics. Alternatively, and perhaps as adequately considering the motivational power of autonomous motivation (Deci & Ryan, 2000), organisations could help their employees attain PJ fit by facilitating some of their

behaviours. For example, employees willing to work on tasks not prescribed by their jobs, but which may nonetheless benefit the organisation, may be encouraged to do so.

Examining the intertwined nature of PJ fit perceptions and job crafting behaviours also bears implications for the specific context of recruitment. More precisely, it may suggest that employees who do not possess the right set of skills when they enter an organisation may themselves develop their skills or alter work processes to better meet their job demands. Consequently, if an organisation struggled to recruit a candidate whose skills perfectly match the job requirements, it would not be inappropriate to consider less-skilled applicants but who may be proactive and might seek to fulfil their job requirements. In other words, “attitude” might perhaps be at least as important as “aptitude”. Conversely, an absence of job crafting behaviours when a lack of PJ fit is observed (e.g., underperformance) would indicate that PJ fit improvement may better be facilitated by organisational processes and HR practices (e.g., trainings, recruitment of specific profiles or personalities, etc.). In such a case, job crafting interventions (e.g., Gordon et al., 2018; Kooij et al., 2017) that foster the use of approach crafting behaviours in the workplace could be particularly relevant for developing PJ fit perceptions over the long run.

In addition, it is critical to better understand the relationship between avoidance crafting behaviours and change in PJ fit perceptions. Indeed, while the previous implications focused on the potentially desirable outcomes of job crafting behaviours, it may not be ruled out that avoidance crafting behaviours may negatively affect PJ fit perceptions over time, as these are generally related to undesirable employee outcomes (Zhang & Parker, 2019). In such a case, mitigating these behaviours would be crucial both for employees and organisations.

Finally, understanding better the *interrelationships* between change in perceived NS fit and DA fit and approach and avoidance crafting behaviours is also practically

important. For instance, a reasonable lack of DA fit has been theorised to be potentially desirable for personal development (e.g., Harrison, 1978). Hence, it could be that assigning challenging tasks to employees may foster the development of abilities (with employees themselves developing DA fit) but also facilitate an improvement in perceived NS fit (e.g., opportunities for growth). Consequently, it is critical to develop a better understanding of how perceived DA fit and NS fit relate to each other over time. This could indeed allow for identifying conditions, such as job crafting behaviours or initial levels of PJ fit perceptions, that facilitate their positive development.

1.5 Thesis Structure and Outline

This thesis is structured around eight chapters. The introduction chapter provided the rationale for the present research, and highlighted its contributions to both theory and practice as well as methodological contributions. Chapters 2 to 4 will pertain to the literature review of the present research. More precisely, Chapter 2 will present in detail what PJ fit perceptions are about, how they are typically conceptualised (i.e., NS fit and DA fit), and why better understanding how they develop is important. Chapter 2 will also introduce key PE fit theories that highlight why people may seek PJ fit.

Then, Chapter 3 will move on to a detailed presentation of job crafting, introducing three influential models in this research area. Importantly, this chapter will stress the multidimensionality of job crafting and the necessity to distinguish between approach and avoidance crafting behaviours. Finally, this chapter will end with a detailed discussion about the research gaps existing on the relationship between change in PJ fit perceptions and job crafting behaviours. While theoretical and empirical research gaps were highlighted in this introductory chapter, these were kept at surface-level to facilitate the readability of this chapter and to communicate briefly on the contributions of the present research. In contrast, Section 3.4 goes into the detail of these gaps, supporting the relevance of the present research and its contributions.

In turn, Chapter 4 will integrate key elements of Chapter 2 and Chapter 3 and will elaborate on the relationship between change in PJ fit perceptions and job crafting behaviours. More precisely, Chapter 4 will pertain to the theoretical development of the present research, based on COR (Hobfoll, 1989), and will include the statement of research hypotheses. Chapter 4 may, therefore, be seen as the theoretical contribution of the present research to the literature.

Chapter 5 will give details about the methodology used for the present research. These details will include information about the study design, the nature of the sample used for the present study, but also details about sample size planning.

Subsequently, Chapter 6 will focus on the analytical tools and techniques that were used for testing the research hypotheses stated in Chapter 4. In particular, details will be given regarding model specification, the different steps involved in the testing of hypotheses, and how moderation was handled.

Results will then be presented in Chapter 7 and discussed in Chapter 8. In this last chapter, the contributions of the present research will be highlighted, limitations acknowledged, and areas for future research proposed. Finally, concluding observations about the present research will be made.

Chapter Two

Person-Job Fit

2.1 Introduction

Research on person-job (PJ) fit is rooted in the person-environment (PE) fit paradigm (Kristof-Brown et al., 2005). Consequently, this literature review chapter starts by presenting the fundamentals of PE fit research. Then, PJ fit research will be introduced and a focus will be given on PJ fit perceptions. Notably, PJ fit perceptions will be distinguished from other PE fit perceptions, such as person-organisation fit perceptions. Furthermore, two distinct conceptualisations of PJ fit will be presented and their difference highlighted. The impact of these two types of PJ fit perceptions on individual outcomes will be discussed. By approaching PJ fit as a dynamic phenomenon, the last part of this chapter will present theories that are relevant to the study of change in PJ fit perceptions, viewing employees as active agent of their fit with their jobs.

2.2 Person-Environment Fit

Person-Environment (PE) fit research explores how the interaction between the characteristics of the person (P) and those of the work environment (E) affects attitudes and behaviours (Edwards, 2008). In essence, PE fit may broadly be defined as “the compatibility between an individual and a work environment that occurs when their characteristics are well matched” (Kristof-Brown et al., 2005, p. 281). While this definition may be debated because of the vagueness of terms such as *compatibility* or *match* (e.g., Edwards, 2008), it nonetheless offers a broad definition of PE fit that is relevant for this introduction paragraph.

The concept of PE fit is prominent in industrial and organisational psychology (Kristof-Brown & Billsberry, 2013; Schneider, 2001). Early contemporary research on PE fit is generally traced back to the work of Parsons (1909) on vocational choice and to Lewin (1936), who formalised the equation “ $B = f(PE)$ ”, where B stands for behaviour,

P for person, and *E* for Environment (e.g., De Cooman et al., 2019; Edwards, 2008; van Vianen, 2018; Vleugels et al., 2018). The press-need theory of Murray (1938), which suggested that personal needs and factors in the environment (i.e., press) affect individual outcomes, has also been cited as early work on PE fit (Edwards, 2008).

The basic premise of PE fit research is that positive individual outcomes arise when there is a good fit between *P* and *E* (Ostroff & Schulte, 2007). Consistent with this premise, PE fit has been associated with desirable individual outcomes (e.g., Kristof-Brown et al., 2005; Oh et al., 2014). Importantly, PE fit is central to employees, as it affects their (a) decisions regarding job acceptance and organisational entry (e.g., Cable & Judge, 1996; Resick et al., 2007), (b) attitudes and behaviours once employed (e.g., Kristof-Brown et al., 2005; Oh et al., 2014), and (c) turnover decisions (e.g., Boon & Biron, 2016). Therefore, PE fit influences attitudes and behaviours from pre-hire to post-hire conditions (Jansen & Kristof-Brown, 2006).

2.2.1 *Definitional Elements: Complementary and Supplementary Fit*

The *fit*, also referred to as *compatibility*, *match*, *congruence*, *similarity* or *correspondence*, between individuals and their work environment (Edwards, 2008; Kristof-Brown et al., 2005; Ostroff & Schulte, 2007) may be approached from two different lenses. The first lens approaches fit from a *complementary* perspective, while the second lens approaches fit from a *supplementary* perspective (Muchinsky & Monahan, 1987). Complementary fit occurs when the person and the work environment meet each other's requirements; supplementary fit occurs when the characteristics of the person and those of the work environment are similar (Edwards & Shipp, 2007). In other words, and colloquially, complementary fit may be viewed as relating to the question "is attraction driven by the fulfilment of personal interests?" and supplementary fit to the question "do birds of a feather flock together?".

When requirements are studied from the person's perspective (e.g., personal wants and needs), complementary fit is often operationalised under the process of psychological need fulfilment (e.g., Cable & Edwards, 2004). In this context, complementary fit refers to the needs of a person being met by the characteristics, or supplies, that the work environment provides. This type of fit is typically termed needs-supplies (NS) fit. Importantly, NS fit does not relate to basic and physiological needs only, but more generally to the wider meaning of needs (i.e. interests, preferences, likes, etc.) (Edwards et al., 1998; Ostroff, 2012). When requirements are approached from the view of the work environment, complementary fit is commonly defined as demands-abilities (DA) fit. In this context, complementary fit refers to demands which emanate from the job tasks or the broader social context and are fulfilled by the person's knowledge, skills and abilities (e.g., Edwards, 2008; Edwards & Shipp, 2007).

Supplementary fit has typically been approached as value congruence, which refers to the similarity between what a person values and what the work environment values (Cable & Edwards, 2004). Although supplementary fit may also be operationalised as goal congruence or personality congruence, these operationalisations of fit are less frequently used than value congruence (e.g., Hoffman et al., 2011; Piasentin & Chapman, 2006). Supplementary fit can be viewed as being related to the similarity-attraction paradigm (Byrne, 1971), which emphasises that people are attracted to similar others, and to the attraction-selection-attrition (ASA) framework, positing that people are attracted to organisations resembling them (Schneider, 1987; Schneider et al., 1995).

2.2.2 Perceived Fit and Indirect Fit as Distinct Research Paradigms

The different types of fit (e.g., NS fit, DA fit, and value congruence) may be approached as *direct* fit, or *indirect* fit (Kristof-Brown et al., 2005). Direct fit relates to an evaluation of fit that is processed directly by the person. This type of fit is typically termed *perceived* fit (Kristof-Brown et al., 2005). Perceived fit may be assessed as *molar*

fit, where the person evaluates whether there is a fit between him/herself and the work environment; alternatively, perceived fit may be assessed in a *molecular* fashion, where the person indicates whether a lack of fit is due to an excess or shortage of a given attribute (Edwards et al., 2006). For instance, a molar measure of NS fit pertaining to social interactions at work could be assessed via an item such as “my job provides me with an adequate amount of social interactions” on a Likert-type scale. A molecular measure of NS fit for that same attribute could be assessed with an Osgood scale and an item such as “the social interactions that my job provides me with are” followed by “less than adequate (-3)” up to “more than adequate (+3)”.

The molar approach is undoubtedly the most often used in research exploring PE fit perceptions (e.g., Kristof-Brown & Guay, 2011), presumably because it allows for a holistic assessment of fit that is not bound to a specific attribute (Kristof-Brown et al., 2005). Indeed, a molecular assessment of fit may not be the most appropriate for assessing fit pertaining to a global job situation. For instance, assessing whether overall job supplies exceed personal needs might not be an ideal approach, as it is unlikely that employees possess too much of everything. Importantly, such a measure would result in a conceptual weakness (e.g., a job may hardly provide someone with too much task complexity and simplicity at the same time). In addition, perceived fit measures that pertain to an overall assessment of complementary fit typically assess fit in terms of its underlying fulfilment process. For instance, an item such as “the attributes that I look for in a job are fulfilled very well by my present job” or “the job that I currently hold gives me just about everything that I want from a job” (Cable & DeRue, 2002, p. 879) measures whether personal needs that pertain to the job are fulfilled by job supplies (NS fit). Similarly, I would like to argue that a measure of over-fulfilment would not be appropriate, as overall needs may conceivably be either under-fulfilled (unmet) or fulfilled (met). Taking the filling of a five-litre water tank as a metaphor, this tank might be either underfilled or

filled but not overfilled. This tank will be filled with five litres of water even when seven are poured.

Indirect fit, also referred to as *atomistic* fit (Edwards et al., 2006), relates to an evaluation of fit that is not processed directly by the person, but by mathematical calculations matching measures separately taken about the person and about the work environment (Kristof-Brown et al., 2005). These measures may be taken from the person only (e.g., the person expresses an amount of task variety that is desired and an amount of task variety provided by the job), from the person and the work environment (e.g., the amount of task variety provided by the job is given by the person's boss), or from the environment only (e.g., the level of expertise required by the job and which is possessed by the person are both given by the person's boss).

Until recently, perceived fit and indirect fit were limited to a discussion about fit measurement (e.g., Kristof-Brown et al., 2005). However, research exploring how they relate to each other showed that perceived fit and indirect fit differed in ways that could not be reduced to a mere methodological discussion (Edwards et al., 2006). Perceived fit and indirect fit are now approached as not only “distinctly different domains that should be treated as separate concepts” but also as “two distinctly different paradigms” (Kristof-Brown & Billsberry, 2013, pp. 1–2). This distinction is sensible for at least three reasons.

First, perceived fit and indirect fit are not systematically consistent, such that a perception of fit for a specific job attribute may sometimes not translate into an indirect fit for that same attribute (Edwards et al., 2006). For instance, Edwards et al. (2006) found that those who benefited from a higher salary than they desired (indirect fit) perceived this condition as a good fit. These authors observed a similar pattern for characteristics that may be seen as desirable (e.g., prestige and vacation time), which suggests that getting “more” of a “good” thing may not be perceived as a misfit.

Second, Edwards and his colleagues (2006) found that perceived NS fit was strongly related to anticipated satisfaction, which led these authors to question whether perceived fit and satisfaction were dissimilar. Since Edwards et al.'s (2006) findings, studies exploring the relationship between perceived fit and affective states have been conducted (e.g., Gabriel et al., 2014; Vleugels et al., 2018; Yu, 2009), suggesting that while these variables are related, they are different constructs which mutually influence each other.

Third, and perhaps more importantly, when perceived fit targets the evaluation of an overall sense of fit (i.e., perception of an overall NS fit or overall value congruence), perceived fit allows individuals to “apply their own weighting scheme to various aspects of the environment [and to] report a holistic assessment of fit” (Kristof-Brown et al., 2005, pp. 291–292). It allows people to “describe fit in their own ways that are meaningful to them” (Kristof-Brown & Billsberry, 2013, p. 6). In contrast, although indirect fit measures might focus on several aspects of the work environment (e.g., autonomy, variety, prestige, etc.), these measures may hardly capture all the attributes that relate to the person and the environment. For instance, the *organizational culture profile* (OCP; O'Reilly et al., 1991), which targets the evaluation of an overall value congruence between the person and the organisation, is a tool which requires evaluating the importance of the same 54 attributes for the person and for the organisation (e.g., autonomy, informality, etc.). Although 54 characteristics may seem numerous, contemporary concerns such as being environment friendly or working remotely are not included in the OCP. Furthermore, indirect measures of value congruence do not generally account for the possibility that value congruence for the attributes that a person judges as important may bear stronger effects on attitudes and behaviours than value congruence for the attributes that this person judges as not important. In addition, it is conceivable that people give more weight to the attributes that are relevant to them, rather

than irrelevant, in evaluating their fit (Yu, 2013). In relation to this, it is suggested that people give more weight to the values that are appealing to them than to values being neutral or aversive to them when they form overall value congruence judgements (De Goede et al., 2013). A perception of overall fit might therefore differ from an indirect assessment of fit, for which assessed attributes may be different, not necessarily relevant to the person, and are typically evenly weighted.

The differentiation between perceived fit and indirect fit as two distinct paradigms, or constructs, is acknowledged in most recent reviews of PE fit research (e.g., Edwards, 2008; Kristof-Brown & Billsberry, 2013; Kristof-Brown & Guay, 2011; Ostroff, 2012; van Vianen, 2018). Additionally, perceived fit is generally more strongly related to attitudes and behaviours than indirect fit (e.g., Arthur, et al., 2006; Kristof-Brown et al., 2005; Verquer et al., 2003). Importantly, repeated calls have been made for exploring the antecedents of perceived fit (e.g., perceived NS fit, DA fit, or value congruence) and how fit perceptions develop over time (e.g., De Cooman et al., 2019; Kristof-Brown & Guay, 2011; Su et al., 2015). Contributing to answering these calls, the present research aims to explore how perceptions of *person-job* (PJ) fit develop over time.

2.3 From Person-Environment Fit to Person-Job Fit

As the fundamentals of PE fit research have been reviewed, I will now build on those notions to introduce research pertaining to PJ fit perceptions. In so doing, I will define PJ fit perceptions and will highlight their specificities with regard to other types of PE fit perceptions. Importantly, I will approach PJ fit perceptions as evaluations that reflect a holistic assessment of fit, and not an assessment of fit bound to a particular personal or job attribute.

2.3.1 *Person-Job Fit as One of Several Person-Environment Fit Foci*

Altogether, the different conceptualisations of PE fit (i.e., NS fit, DA fit, value congruence and other types of supplementary fit) may focus on specific or general aspects

of the work environment (Edwards & Shipp, 2007). For instance, fit can focus on a particular characteristic of the work environment, such as autonomy (e.g., Cable & Edwards, 2004; Yu & Davis, 2016), but it can also focus on a class, group, or set, of characteristics. When PE fit focuses on a set of characteristics, the work environment is typically operationalised as a person's job, organisation, group, supervisor, or vocation (e.g., Kristof-Brown et al., 2005). Accordingly, PE fit is approached as person-job (PJ) fit, person-organisation (PO), person-group (PG), person-supervisor (PS), or person-vocation (PV) fit.

Unarguably, PJ fit and PO fit are the fit foci that have drawn the most attention from scholars (see meta-analyses; e.g., Hoffman & Woehr, 2006; Kristof-Brown et al., 2005; Oh et al., 2014; Verquer et al., 2003; Yang et al., 2008). While PV fit is popular, this fit focus tends to be studied independently of the other fit foci in the literature. For instance, studies investigating how different fit foci affect outcomes typically include PJ fit, PO fit, PG fit or PS fit but not PV fit (e.g., Diefendorff et al., 2016; Hamstra et al., 2019; Oh et al., 2014; Vleugels et al., 2018; Wang et al., 2011; Yu, 2016). PV fit is argued to be the broadest type of fit, as it relates to overall career matters (Jansen & Kristof-Brown, 2006; Kristof-Brown et al., 2005). As such, PV fit transcends the specificities of time-bound and place-bound job and organisational conditions. Therefore, it could be seen as not as suitable as PJ fit or PO fit for researching on work conditions or phenomena that are tied to a specific job or organisation, such as organisational commitment or job satisfaction (Su et al., 2015).

PJ fit is typically approached as NS fit pertaining to job supplies, and/or DA fit pertaining to job demands (e.g., Edwards, 1991; Kristof-Brown et al., 2005). As the present research focuses on PJ fit, the terms *NS fit* and *DA fit* will, from this point and up to the conclusion of this monograph, be used to respectively refer to *job-related NS fit* and to *job-related DA fit*. Perceived NS fit and DA fit are respectively assessed with items

such as “the job that I currently hold gives me just about everything that I want from a job” and “the match is very good between the demands of my job and my personal skills” (Cable & DeRue, 2002, p. 879) or “to what degree is your job performance hurt by a lack of expertise on the job?” (Cable & Judge, 1996, p. 299). These two conceptualisations of PJ fit therefore pertain to need fulfilment processes that work in opposite direction, the former being about meeting personal requirement, the latter being about meeting job requirements (see Section 2.2.1). Other fit foci are frequently approached under the supplementary fit perspective, particularly through the study of value congruence, such as is the case with PO fit (e.g., Herkes et al., 2019; Hoffman & Woehr, 2006; Piasentin & Chapman, 2007; Verquer et al., 2003). An example of item allowing for the assessment of perceived PO fit (organisational value congruence) is “the things that I value in life are very similar to the things that my organization values” (Cable & DeRue, 2002, p. 879).

2.3.2 Person-Job Fit Perceptions and Interrelationships Amongst Fit Foci

In general, collinearity amongst the different fit foci may be expected (Jansen & Kristof-Brown, 2006). Indeed, job requirements may be influenced by one’s relationship with his or her supervisor, yielding a relationship between PS fit and PJ fit. Likewise, the job may require one to work with others, causing PJ fit and PG fit to be related. In fact, empirical evidence supports these interrelationships (Kristof-Brown et al., 2005; Oh et al., 2014). As such, the shared variance amongst fit foci may more generally raise the question of whether PE fit may be considered a superordinate (or reflective) construct of the various fit foci. Simply put, a superordinate construct is a construct which dimensions are its manifestation (the removal of one dimension does not affect the nature of the superordinate construct because causality stems from the superordinate construct to its dimensions); in contrast, an aggregate construct is a construct which dimensions define it (the removal of one dimension affects the nature of the aggregate construct) (e.g., Edwards, 2001, 2011; Howell et al., 2007a, 2007b). Interestingly, recent research

suggests that perceived PE fit is an aggregate (or formative) construct determined by the different fit foci (Badger Darrow & Behrend, 2017). The finding that PE fit might be a function of its dimensions is critical because it indicates that there is a value in distinguishing amongst the different fit foci and studying each of them.

It is also important to note that another recent empirical study pointed out perceived PE fit to be a superordinate construct (Chuang et al., 2016). Nevertheless, the study conducted by Chuang et al. (2016) consisted of subscales that may have facilitated the identification of a superordinate construct. For instance, perceived PG fit and PO fit were assessed using the same set of values and goals, which may have inflated the correlation between these two fit foci. Furthermore, their aggregate perceived PE fit factor was not specified as a factor that could also reflect an overall evaluation of PE fit. Importantly, the absence of reflective measures associated with an aggregate construct may affect the stability of the parameters associated to the measurement of this aggregate construct (Edwards, 2011).

Bringing support for the distinctiveness of the different perceived fit foci, CFAs performed on nested models showed that collapsing factors representing different fit foci into a fewer number of factors yielded significantly worse model fits (e.g., Diefendorff et al., 2016; Harold et al., 2016; Huang & Simha, 2018; Vleugels et al., 2018). These analyses support the perspective that the different perceived fit foci are distinguishable from each other. This distinction between perceived fit foci is also supported by their specific relationships with outcomes. For instance, meta-analytical results suggest that aspects of the environment that pertain to a specific focus (e.g., job satisfaction) may relate more strongly to their associated fit focus (e.g., PJ fit) than to other fit foci (Kristof-Brown et al., 2005; Oh et al., 2014). This information brings further supports for the relevance of studying each of the fit foci, and thus PJ fit.

2.3.3 *The Importance of Person-Job Fit Perceptions*

The results of the meta-analyses conducted by Kristof-Brown et al. (2005) and Oh et al. (2014) are consistent with the perspective that PJ fit perceptions and job-related outcomes are closely related. However, these meta-analyses did not distinguish between perceived NS fit and DA fit, which may raise questions about the impact of each of these perceptions on job-related outcomes. Results from single studies suggest that perceived NS fit and DA fit can both be considered key determinants of attitudes and behaviours referencing job aspects. For instance, perceived NS fit has been frequently shown to correlate with job satisfaction in the region of $.60 < r < .80$ (e.g., Badger Darrow & Behrend, 2017; Cable & DeRue, 2002; Vogel & Feldman, 2009; Yu, 2016). Likewise, this type of fit has been evidenced to correlate rather strongly with job frustration ($r = -.50$; Harold et al., 2016), task performance ($r = .39$; Chi & Pan, 2012), and job engagement ($r = .53$; Hernandez & Guarana, 2018). A look at the aforementioned studies will show that perceived DA fit is generally less strongly related to these outcomes. However, weaker impact does not imply weak impact. In particular, perceived DA fit has been shown to correlate strongly with job satisfaction, with correlations typically ranging between $r = .40$ and $r = .60$ (e.g., Vogel & Feldman, 2009; Wang et al., 2011; Yu, 2016). Studies focusing on job performance also suggest a non-negligible relationship with perceived DA fit, with correlations in the region of $r = .30$ (e.g., Astakhova & Porter, 2015; Huang & Simha, 2018; Wang et al., 2011).

Importantly, the impact of perceived NS fit and DA fit on attitudes and behaviours cannot be reduced to an impact on job-related outcomes only. Indeed, empirical evidence suggests that these PJ fit perceptions also largely influence organisation-related attitudes, employee well-being, and a variety of other outcomes. For instance, perceived NS fit has been shown to correlate rather highly with organisation frustration ($r = -.47$; Harold et al., 2016), career satisfaction ($r = .68$; Vogel & Feldman, 2009), turnover intentions ($r =$

-.63; Badger Darrow & Behrend, 2017), work engagement ($r = .58$; Travagianti et al., 2016) and burnout ($r = -.56$; Travagianti et al., 2016). Likewise, perceived DA fit has been evidenced to be rather strongly related to affective organisational commitment ($r = .48$; Greguras & Diefendorff, 2009), organisational identification ($r = .41$; Astakhova & Porter, 2015) and competence satisfaction ($r = .51$; Diefendorff et al., 2016).

Consistent with these empirical results, which show large effect sizes (Cohen, 1988), it seems reasonable to infer that PJ fit perceptions are key determinants of employee attitudes and behaviours. In addition, I would like to suggest that these perceptions are relevant to any work experience, which could, to some extent, distinguish them from other fit foci. Indeed, some workers may not work in teams or may be socially isolated, which could cause perceived PG fit to lack relevance; some may work under low supervision, which could attenuate the attitudinal and behavioural impact of perceived PS fit; some may work remotely and be physically absent from the premises of the organisation, which could cause perceived PO fit to be less impactful on attitudes and behaviours. Interestingly, the perspective that PO fit may bear only little impact on individual attitudes and behaviours depending on situational factors has been around for some time in the literature (e.g., Kristof, 1996). In contrast, it is likely that PJ fit perceptions are relevant in all contexts because workers are employed for meeting job demands and are rewarded job supplies for meeting those job demands. As suggested by Jansen and Kristof-Brown (2006), it is sensible to see PJ fit as being impactful on individual outcomes at all stages of the employment relationship, from the pre-hire to the post-hire employment phases. Interestingly, even early research on PE fit put an emphasis on PJ fit, although the term *PJ fit* was not then used. More than forty years ago already, Harrison (1978, pp. 175–176) noted:

Two kinds of fit between the individual and the environment are considered. One kind of fit is the extent to which the person's skills and abilities match the demands

and requirements of the job. Another kind of fit is the extent to which the job environment provides supplies to meet the individual's needs.

2.4 The Dynamic Nature of Person-Job Fit Perceptions and the Drive to Fit

The fit between employees and their work environment, or more specifically their jobs, may theoretically change over time as a result of employees themselves and/or the work environment (e.g., Caplan, 1987; Harrison, 1978). Importantly, several theories have developed the proposition that employees may *seek* PJ fit. Reviewing these theories is useful for the present research, as they elaborate on the psychological mechanisms that may push employees to better fit with their jobs. Amongst these theories may be listed (a) the theory of PE fit and job stress (French et al., 1974; Harrison, 1978), (b) the theory of work adjustment (Dawis, 2005; Dawis et al., 1964; Dawis & Lofquist, 1976), and (c) the theory of self-regulation applied to PE fit (Johnson, Taing, et al., 2013). While the absence of *job crafting* theory to this list may be noted, this absence is motivated by the fact that job crafting will be discussed in detail in the next chapter. In discussing the relevance of each of the three aforementioned theories to the present research, I will stress the necessity to distinguish between perceived NS fit and DA fit in making predictions that involve behaviours targeting a change in PJ fit perceptions.

2.4.1 The Theory of Person-Environment Fit and Job Stress

Despite its labelling, the theory of PE fit and job stress (French et al., 1974; Harrison, 1978) is not a theory that bears implications for job stress only. In the context of the present research, it may first and foremost be seen as a theory that addresses why and how employees may be motivated to change NS fit and DA fit. Indeed, the theory of PE fit and job stress is compatible with viewing people as being driven to alleviate a lack of NS fit and DA fit when these types of fit result in job stress (Harrison, 1978). As such, this theory provides an explanation regarding the psychological mechanisms that may lead people to alter their jobs and/or themselves. More precisely, where stress would

result from a lack of PJ fit, it is theorised that employees may seek the improvement of PJ fit. This improvement may occur through *coping* (actions taken by employees to change the actual work environment and/or themselves) or *defence* (distortion of employees' perceptions, such as perceiving higher abilities than actual abilities, perceiving a higher PE fit than actual PE fit, or denial of strain) (Harrison, 1978).

Importantly, this theory makes clear the need for distinguishing between NS fit and DA fit in predicting job stress. First, the theory posits that a lack of NS fit will be related to job stress when job supplies are insufficient to meet personal needs (French et al., 1974; Harrison, 1978). Second, it is proposed that “discrepancies between job demands and individual abilities will be related to strain when they result in insufficient environmental supplies for the individual’s goals” (Harrison, 1978, p. 181). In other words, the effect of a lack of DA fit on job stress may be seen as being mediated by NS fit (Edwards, 2008). In addition, a lack of DA fit is suggested to directly affect job stress because such a lack of fit may directly threaten job supplies (Harrison, 1978). In the context of the present research, the theory of PE fit and job stress is therefore compatible with viewing perceived NS fit and DA fit as being interrelated in their relationship with job stress, ergo with coping and defence mechanisms. Consequently, it may be that lower perceptions of NS fit and DA fit may push employees to improve their fit with their jobs. Furthermore, these types of fit may jointly affect stress and thus coping and defence mechanisms.

While the theory of PE fit and job stress provides more detailed propositions, these are not appropriate for the present research. Indeed, the present research builds on (a) a molar approach of fit and (b) evaluations of fit that pertain to a general compatibility, for which a variety of personal and job attributes are simultaneously considered and weighted (Kristof-Brown et al., 2005; Kristof-Brown & Guay, 2011). In contrast, the detailed propositions made in theory of PE fit and job stress primarily (a) build on an atomistic

approach of fit (i.e., lack of fit is assessed in terms of over and under supplies/abilities) and (b) focus on fit pertaining to specific attributes. For instance, whether job stress results from a lack of NS fit is theorised to be a function of the specific job attribute that is assessed: an oversupply of an attribute may result in increased strain, but an oversupply of another attribute may also decrease strain (Harrison, 1978). Overall, the theory of PE fit and job stress offers interesting insights into why people may be willing to improve both NS fit and DA fit, placing stress as a driving force.

2.4.2 *The Theory of Work Adjustment*

The theory of work adjustment (TWA; Dawis, 2005; Dawis et al., 1964; Dawis & Lofquist, 1976) approaches individuals as being driven to maintain correspondence with their work environment. More precisely, TWA posits that employees and organisations are each driven to having their needs satisfied by the other. As a result, adjustment in PE fit may occur when an individual is dissatisfied with the work environment (i.e., when his or her requirements are not met by the work environment) and/or vice versa. Dissatisfaction leads to actions targeting a change in either the dissatisfied party or its counterpart, termed *adjustment*. Importantly, “TWA research has been concerned mainly with job satisfaction, that is, satisfaction with the reinforcers found on the job”(Dawis, 2005, p. 10). Hence, TWA is predominantly a theory about PJ fit adjustment, which builds around the notions of job demands and supplies, and personal skills and needs. For instance, dissatisfied employees may re-evaluate and lower their needs, or they may try to negotiate for better working conditions, in order to ease need fulfilment and restore job satisfaction. Thus, in contrast to the theory of PE fit and job stress, TWA focuses on satisfaction (rather than stress) as the driving force behind achieving NS fit.

TWA also differs from the theory of PE fit and job stress in that it clearly suggests that adjustment behaviours may result from the joint effect of NS fit and DA fit. First, TWA predicts that satisfaction should result from the interaction between job demands

being met by personal capabilities and personal needs being fulfilled by job supplies (Dawis, 2005). Second, as it is dissatisfaction that triggers adjustment behaviours, it may be reasoned that, upstream the causal chain, these behaviours should stem from the interaction between NS fit and DA fit. However, TWA does not clearly explain why this interaction may occur (Edwards, 2008). Despite this shortcoming, TWA is informative because it suggests that distinguishing between NS fit and DA fit is warranted for the prediction of adjustment behaviours. With regard to the present research, it further implies that a potential change in perceived NS fit and DA fit may result from adjustment behaviours that are triggered by the interaction between these two types of fit.

2.4.3 *The Theory of Self-Regulation Applied to Person-Environment Fit*

Akin to TWA, the theory of self-regulation applied to PE fit (Johnson, Howe, et al., 2013; Johnson, Taing, et al., 2013) advances that people should strive to reach PE fit because it is an ideal condition, or goal, to reach. In this theory, a lack of fit is conceptualised as a discrepancy between an ideal condition (e.g., job supplies matching personal needs) and a less favourable experienced condition (e.g., job supplies falling short of personal needs). When ideal conditions are not met, the theory predicts that workers will engage in *corrective self-reactions* in order to reach fit. Importantly, the theory distinguishes between NS fit and DA fit and proposes that the drives to reach both types of fit are hierarchically ordered, such that reaching DA fit is instrumental to reaching NS fit (e.g., Johnson, Taing, et al., 2013).

Thereby, the theory of self-regulation applied to PE fit shares similarities with both (a) TWA and (b) the theory of PE fit and job stress. First, it shares with TWA, to some extent, the instrumental perspective that “P and E interact because their respective satisfactions depend on satisfying the other” (Dawis, 2002, p. 433). This instrumental perspective is also apparent in the theory of PE fit and job stress, which states that receiving job supplies may be contingent on meeting job demands (Harrison, 1978).

Second, the theory of self-regulation applied to PE fit is, as TWA, consistent with seeing NS fit and DA fit interacting in predicting corrective self-reactions. More precisely, it may be thought that the relationship between a lack of DA fit and corrective self-reactions targeting its improvement may become weaker when NS fit increases (the higher-order ideal condition is attained so reaching DA fit is irrelevant as a means to attain NS fit). This perspective, however, is inconsistent with the theory of PE fit and job stress. Indeed, this latter theory is rather compatible with viewing the drive to reach DA fit sustained even when NS fit is high because DA fit may allow to be protected against losing job supplies (Harrison, 1978). Despite this theoretical difference, these theories may nonetheless be reconciled by positing that two interrelated feedback loops may actually exist (e.g., Edwards, 1992): one where DA fit is instrumental to achieving NS fit, and one where reaching DA fit is instrumental not to decrease NS fit. This possibility is consistent with conservation of resources theory (COR; Hobfoll, 1989), which suggests that people may be driven to (a) avoid losing their resources and to (b) acquire new ones. This point will be further developed in Chapter 4.

2.4.4 Empirical Studies and The Relevance of Job Crafting

Despite theory suggesting that employees should strive to reach perceived NS fit, and potentially perceived DA fit, empirical studies exploring this drive to fit are lacking. This paucity of research reflects a wider scarcity of PE fit studies that aim to understand how PE fit perceptions develop over time (e.g., De Cooman et al., 2019; Kristof-Brown & Guay, 2011). In particular, little research has empirically examined how the aforementioned theorised fitting actions, or mis-fitting reactions, which may be termed *coping*, *defence*, *adjustment behaviours* or *corrective self-reactions*, relate to change in NS fit and DA fit. As the present research focuses on *behaviours* (rather than cognitions) that affect change in PJ fit perceptions, I will now develop in greater detail the argument that research in this area has been limited.

From a behavioural perspective, the role that employees themselves play in change in perceived NS fit and DA fit may be investigated by integrating research on PE fit and research on proactive behaviours. Proactive behaviours may be defined as behaviours that are their *self-initiated* and *target* a change in a situation (e.g., Grant & Ashford, 2008). As such, they are relevant for studying a drive (self-initiated) to reach (target) NS fit and DA fit. Interestingly, Parker and Collins (2010) reviewed several of these behaviours and they proposed a framework integrating and differentiating them. In so doing, they indicated that feedback seeking and monitoring, job change negotiation, as well as career initiative could be approached as proactive PE fit behaviours that allow employees to shape their fit with their work environment. While a couple of empirical studies have investigated the impact of job change negotiation and career initiative behaviours on change in perceived DA fit (Bayl-Smith & Griffin, 2018; Sylva et al., 2019), the question of whether these behaviours first originated from lower DA fit perceptions was not examined. Furthermore, their impact on perceived NS fit was not investigated. Hence, empirical research using the typology of behaviours given by Parker and Collins (2010) to better understand how PJ fit perceptions change over time has been limited.

Of note, while the proactive PE fit behaviours identified by Parker and Collins (2010) are indeed very relevant for better understanding how PE fit perceptions develop, these behaviours are not all specific to PJ fit. For instance, career initiative may conceivably be as relevant to PV fit as to PJ fit. In addition, these behaviours were also argued to target a broad change in the organisational environment, and not just a change in the job (Parker & Collins, 2010). Finally, despite an impact not limited to change in PJ fit, the typology of behaviours offered by Parker and Collins (2010) is rather limited in breadth, given that they identified only a few and specific (i.e., feedback seeking) behaviours. Consequently, while these behaviours may allow for better understanding

how PJ fit perceptions change over time, developing a better understanding of the changes that are *specific* to the job and to a drive to reach PJ fit may perhaps be better addressed by focusing on another set of behaviours.

A typology of proactive behaviour that is (a) more specific to PJ fit and (b) may be seen as more diversified than the aforementioned typology (e.g., feedback seeking falls into a wider net of behaviours that includes advice seeking) is offered by the job crafting framework (Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001; Zhang & Parker, 2019). Job crafting behaviours have broadly been defined as behaviours in which people engage in order to improve their job situation (Bruning & Campion, 2018; Zhang & Parker, 2019). These behaviours are thus particularly relevant to better understand how PJ fit perceptions may change over time as a function of individually-driven actions. In order to highlight the research gaps existing on the relationship between change in PJ fit perceptions and job crafting behaviours, the next chapter (Chapter 3) will start by introducing job crafting. Once job crafting and its main theoretical models will have been presented, critical research gaps regarding this relationship will be highlighted (Section 3.4). In the introduction paragraph of the present section, I argued that research was lacking on the relationship between change in PJ fit perceptions and proactive behaviours. In Section 3.4 of the next chapter, I will further defend this position by discussing the specific case of job crafting behaviours. More precisely, I will show that despite empirical studies investigating the relationship between PJ fit perceptions and job crafting behaviours over time (Kooij et al., 2017; Niessen et al., 2016; Tims et al., 2016), our understanding of how PJ fit perceptions change through job crafting behaviours has been severely limited and that empirical studies in this area have been critically lacking. Finally, Chapter 4 will contribute to the literature by elaborating on the theoretical relationship linking change in PJ fit perceptions to job crafting behaviours.

2.5 Conclusion

Rooted in PE fit, PJ fit is typically operationalised as a complementary type of fit. As such, PJ fit occurs when employees have their needs met by job supplies (i.e., NS fit), and/or when job demands are met by personal abilities, or more generally skills (i.e., DA fit). Importantly, perceived NS fit and DA fit are strongly correlated with individual attitudes and behaviours. However, despite the impact of these perceptions, little is known about how they change over time. In particular, research on the process by which perceived NS fit and DA fit might be sought and achieved by people themselves (i.e., through proactive behaviours) has mostly been theoretical. In addition, relevant theories may not all completely apply to understanding how fit develops in the specific research paradigm of perceived fit, when overall perceptions of fit are considered (e.g., the theory of PE fit and job stress). Furthermore, these theories sometimes offer different perspectives regarding the psychological mechanisms leading employees to improve their fit with their jobs. Empirical research exploring the relationship between change in PJ fit perceptions and proactive behaviours has been rare, and it has not offered a complete picture of this relationship. Interestingly, the research stream of job crafting offers a promising avenue for better understanding whether and how PJ fit perceptions change through proactive behaviours. Consequently, job crafting is presented in more detail in the next chapter.

Chapter Three

Job Crafting

3.1 Introduction

This second literature review chapter focuses on job crafting. It starts by succinctly defining what *job crafting* is and by presenting its historical development. Following on from this, job crafting will be presented through the lens of the framework offered by Wrzesniewski and Dutton (2001), and particular attention will be then given to its conceptualisation in the Job-Demands Resources Model (Bakker & Demerouti, 2007, 2014; Demerouti et al., 2001). The integrated model of job crafting formalised by Zhang and Parker (2019) will also be introduced, as the present research builds on key elements of this model (i.e., approach and avoidance crafting; superordinate and aggregate constructs). Finally, the relationship between change in PJ fit perceptions and job crafting behaviours will be discussed in light of existing theoretical propositions and empirical studies.

3.2 Definitional Elements

Job crafting broadly refers to actions that people take in order to improve their job situation (Zhang & Parker, 2019). Importantly, these actions can be defined as proactive because of their self-initiated nature, as well as their target, and anticipated effects (e.g., Grant & Ashford, 2008; Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001; Zhang & Parker, 2019). The particularity of job crafting actions, relative to other forms of proactivity (e.g., organisational citizenship behaviours or voice), can be explained via several criteria. More precisely, job crafting actions (a) are specific to the job situation and target a change in intrinsic, rather than extrinsic, elements of the job, (b) aim to benefit the individual, (c) are not necessarily in line with organisational goals, (d) are not bound to a particular context, (e) are not time-bound, (f) are not bound to supervisor approval, and (g) may be behavioural or cognitive (Tims & Bakker, 2010; Wrzesniewski & Dutton,

2001; Zhang & Parker, 2019). While the introduction chapter stated that the present research focuses on job crafting *behaviours*, the broader term of *actions* is used in this chapter to encompass both behavioural and cognitive forms of job crafting.

From a historical perspective, the view that people may proactively seek improvement in their work conditions or jobs has been around for some time. Indeed, this view has been present in the PE fit literature for several decades, as discussed in the previous chapter. Quoting Harrison (1978, p. 178), “an individual unable to keep up with the current work load may ask a supervisor to reduce the work demands [...] or the individual may seek training to improve his abilities to handle the work load”. The two behaviours described by Harrison (1978) meet the criteria for being categorised as proactive, as these are self-initiated, future-oriented, and target an improvement of the situation (e.g., Grant & Ashford, 2008; Parker et al., 2006). More importantly, the second type of behaviour (i.e., training seeking) meets the criteria for being categorised as a job crafting behaviour, as per the previously listed criteria (a) to (g), provided that self-training, which does not require supervisor approval, is a form of training. More explicitly, Harrison (1978) also proposed that employees may themselves change their jobs to suit their personal preferences when these employees have sufficient control over their jobs. This proposition meets all the criteria relevant to job crafting research.

Second, focusing on role development, Nicholson (1984) emphasised that employees may alter their work role to better align it with their personal needs, abilities and identity. This perspective also matches the theoretical domain of job crafting. Similarly, proactivity at work was also approached in terms of *people as sculptors*, considering that people having personal control in the workplace could be able to shape their work environment (Bell & Staw, 1989). In a similar vein, Kulik et al. (1987, p. 292) noted “employees may on occasion redesign their jobs on their own initiative – either with or without management assent and cooperation” but also (p. 293) “employees may

try to expand the job in order to use these skills [i.e., unutilised in the existing job] at work”.

As an emerging research stream (see Figure 3.1), the theoretical boundaries and definitional elements of *job crafting* have changed over the last two decades, since Wrzesniewski and Dutton introduced this term in 2001 in the literature. Indeed, job crafting has successively been defined as (a) a process where employees alter the physical, relational and/or cognitive boundaries of their jobs to make their jobs more meaningful and consistent with who they are (Wrzesniewski & Dutton, 2001), (b) a form of proactive behaviour that allows employees to balance their job demands and resources with their personal abilities and needs (Tims et al., 2012; Tims & Bakker, 2010), and (c) the changes that employees bring to their jobs with the end-goal of improving the job for themselves (Bruning & Campion, 2018).

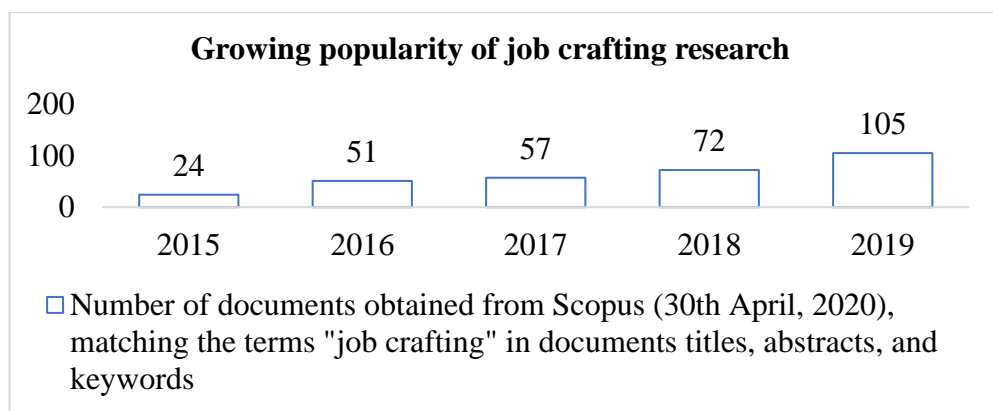


Figure 3.1. The growing popularity of job crafting research

These three definitions emphasise different elements of job crafting. For instance, the first definition captures work identity elements that are not apparent in the second definition. Additionally, the first definition includes change brought to cognitions, while the second definition does not include this non-behavioural type of change. The third and last definition, by its breadth and scope, captures elements from both the first and the second definitions. Job crafting has thus been approached from different lenses. In order

to understand what job crafting research entails, it is necessary to present in more detail its main theoretical models.

3.3 Job Crafting Models

This section introduces three job crafting models: (a) the job crafting model presented by Wrzesniewski and Dutton (2001), (b) the job-demands resources model of job crafting (Tims & Bakker, 2010), and (c) the integrated model of job crafting (Zhang & Parker, 2019). While more models of job crafting have been conceptualised (e.g., Bindl et al., 2019; Kooij et al., 2017; Lichtenthaler & Fischbach, 2016b), a focus is given to these three models because the first two are the most often used in job crafting research (Rudolph et al., 2017; Zhang & Parker, 2019), and the last one combines both of them into an integrated model, conceivably making it the most comprehensive model of job crafting to date (Zhang & Parker, 2019). It should be noted that research studies derived from job crafting but not pertaining to *job* crafting per se are excluded from the present chapter (e.g., Berg et al., 2010; Petrou & Bakker, 2016).

3.3.1 The Job Crafting Model (Wrzesniewski & Dutton, 2001)

The job crafting model (JCM) formalised by Wrzesniewski and Dutton (2001) was the first *job crafting* model introduced in the literature (Rudolph et al., 2017). The key tenet of the JCM is that employees may redefine or shape their jobs in order to satisfy their needs for control, work meaning, positive self-image, and human connection, thereby altering their work identity and the meaning of their work (Wrzesniewski & Dutton, 2001). In fact, the JCM approaches people as being able to change their jobs' task boundaries, relational boundaries, and cognitive boundaries (Wrzesniewski & Dutton, 2001). For example, workers may try to expand, reduce, or modify their job tasks to make their work more appealing to them (i.e., changing task boundaries), or they may try to expand, reduce or qualitatively develop their relational network in the workplace to have more satisfying human connections (i.e., changing relational boundaries). They may also

cognitively reframe their work experience to make it more positive and change the meaning of their work (i.e., cognitive crafting).

While the main focus of the JCM is not about achieving PJ fit (Bruning & Campion, 2018), the process of job crafting could actually be argued to be underpinned by a drive to attain PJ fit, and NS fit in particular. Indeed, Wrzesniewski and Dutton (2001) approach job crafting as a means to increase job satisfaction, and as a means to meet personal needs. Therefore, reaching NS fit, which results in need fulfilment and the subsequent state of satisfaction, is at the heart of the job crafting process. The JCM may thus be seen as adopting a similar perspective to that of TWA (see Section 2.4.2), which posits that employees may alter their work environment or themselves in order to improve satisfaction.

Research based on JCM has examined several antecedents and outcomes of the three job crafting dimensions identified by Wrzesniewski and Dutton (2001). However, quantitative studies have often used scales combining both *expansion-oriented* strategies (i.e., expanding job boundaries) and *reduction-oriented* strategies (i.e., reducing job boundaries) for measuring job crafting. In doing so, these studies have mixed items referring to both task addition and task reduction (Niessen et al., 2016; Sakuraya et al., 2016; Slemp & Vella-Brodrick, 2013). Combining both expansion-oriented and reduction-oriented items into the same scale may have produced findings difficult to interpret. Indeed, expansion and reduction-oriented job crafting were recently shown to relate differently to antecedents and outcomes and scholars have strongly advocated for treating them as separate constructs (Zhang & Parker, 2019).

Of note, a scale measuring each expansion and reduction-oriented job crafting in the JCM was developed by Weseler and Niessen (2016), albeit seldom used. In addition, another scale distinguishing these two aspects of job crafting was developed by Laurence (2010). However, this scale does not exactly mirror the three-dimensional structure of the

JCM. In particular, relational and cognitive crafting were collapsed into a single dimension and task crafting was broadened to physical job crafting, comprising task identity crafting, job autonomy crafting, and job variety crafting.

Although pioneering job crafting research, the JCM has been critiqued as being somewhat inconsistent with the view that job crafting refers to *actively* changing the job situation. More precisely, Tims and Bakker (2010) commented that cognitive crafting might be more akin to a coping mechanism, than to a mechanism by which workers *actively* shape the boundaries of their work. This led Tims and Bakker (2010) to exclude cognitive crafting from their conceptualisation of job crafting, based on the Job Demands-Resources model (JD-R; Bakker & Demerouti, 2007, 2014; Demerouti et al., 2001). Their model has become the most widely used in job crafting research (Rudolph et al., 2017) and is presented hereafter.

3.3.2 *The Job Demands-Resources Model of Job Crafting*

The introduction of the job crafting model proposed by Tims and Bakker (2010) to the literature was associated with a steady growth in job crafting research. Researching the term *job crafting* on Scopus on 30th April, 2020, in titles, abstracts and keywords, resulted in 13 documents identified for the years 2001 to 2010, whereas 361 documents were found for the years 2011 to 2019. The growing popularity of job crafting research might be explained by the popularity of the JD-R model (Bakker & Demerouti, 2007, 2014; Demerouti et al., 2001), which underpins the job crafting framework formalised by Tims and Bakker (2010). For clarity purposes, the job crafting model offered by Tims and Bakker will be referred to as *JDRMJC*, standing for job demands-resources model of job crafting. I will now introduce the JD-R model, before presenting the *JDRMJC*.

The JD-R model approaches one's experience at work as being a function of two broad sets of job characteristics, namely job demands and resources (Demerouti et al., 2001). Job demands comprise aspects of the job that drain people's energy and are

associated with psychological, physiological, and/or physical costs (e.g., heavy workload, task ambiguity, etc.). In contrast job resources refer to aspects of the job that facilitate goal achievement and and/or personal growth and/or decrease the costs associated with job demands (e.g., autonomy, social support, feedback, etc.) (Bakker & Demerouti, 2014; Schaufeli & Taris, 2014). Relatedly, the JDRMJC conceptualises job crafting as consisting of behaviours that target a change in job demands and/or resources, with the end-goal of achieving PJ fit (Tims & Bakker, 2010).

While Wrzesniewski and Dutton (2001) did not make any formal proposition regarding the relationship between job crafting and PJ fit, Tims and Bakker (2010, p. 5) explicitly proposed that “person–job misfit leads to job crafting behaviours”. Furthermore, they asserted that employees may better balance their personal needs and abilities with their job resources and demands through job crafting in order to improve PJ fit (Tims et al., 2012; Tims & Bakker, 2010).

Job crafting behaviours as conceptualised by Tims and Bakker (2010) fall into three categories: (a) increasing job resources, (b) decreasing hindering job demands, and (c) increasing challenging job demands. Although the JD-R does not make an explicit distinction between hindering and challenging job demands (Bakker & Demerouti, 2014; Demerouti et al., 2001), job demands may indeed benefit from being distinguished into these two categories. On the one hand, job demands that are a hindrance require efforts from employees and may deplete their resources; on the other hand, challenging job demands are motivating, stimulating and may allow for personal growth (Crawford et al., 2010). In fact, challenging job demands could easily be categorised as both demands and resources, as per the definition of resources in the JD-R (Demerouti et al., 2001). Hence, employees may be driven to reduce hindering demands, but also to increase challenging demands, which, while still requiring energy, may also benefit them. For instance, adding

tasks to one's job might be costly, but it may also potentially promote skill development (Tims & Bakker, 2010).

In developing a scale allowing for the measurement of job crafting behaviours as conceptualised in the JDRMJC, Tims et al. (2012) identified four, rather than three, dimensions of job crafting behaviours: (a) increasing structural job resources, (b) increasing social job resources, (c) increasing challenging job demands, and (d) decreasing hindering job demands. Structural job resources refer to variety, autonomy and opportunity for development, while social job resources refer to social support, supervisory coaching and feedback (Tims et al., 2012)

While different scales for measuring job crafting behaviours in the JDRMJC have been used (Nielsen & Abildgaard, 2012; Petrou et al., 2012; Tims et al., 2012), the 21-item scale developed by Tims et al. (2012) has been the most popular in the literature (Rudolph et al., 2017). Of note, the 13-item scale used by Petrou et al. (2012), derived from the Tims et al.'s (2012) scale, has also been frequently chosen by scholars (e.g., Cullinane et al., 2017; Demerouti et al., 2015; Gordon et al., 2015, 2018; Petrou et al., 2015). This scale assesses seeking resources, seeking challenges, and reducing demands and thus mirrors the three job crafting behaviours dimensions initially identified by Tims and Bakker (2010).

Importantly, it can be observed that research based on the JDRMJC faced a turning point when the distinctive features of approach (or promotion-focused) and avoidance (or prevention-focused) crafting behaviours were emphasised in the literature (e.g., Lichtenthaler & Fischbach, 2016b). Indeed, these two different dimensions of job crafting respectively pertain to its expansion-oriented nature (e.g., seeking resources, seeking challenges) and to its reduction-oriented nature (e.g., reducing demands). More precisely, avoidance crafting behaviours are withdrawal-oriented and refer to actions taken to avoid or reduce negative work aspects, while approach crafting behaviours target

the resolution of issues and seeking positive work aspects (Bruning & Campion, 2019; Zhang & Parker, 2019). Presumably, the need for distinguishing between approach and avoidance crafting behaviours was put forward by Lichtenthaler and Fischbach (2016a), who showed that both types of crafting actions differentially related to employee outcomes. The difference between these two types of crafting was also apparent in a meta-analysis conducted by Rudolph et al. (2017). Relatedly, many scholars who recently investigated job crafting behaviours through the use of single scores (job crafting operationalised as a unidimensional construct) have chosen to not combine measures of approach and avoidance crafting behaviours (e.g., Bakker, 2018; Harju et al., 2018; Miraglia et al., 2017; Wingerden & Poell, 2017). Before research emphasising the need for distinguishing between avoidance and approach crafting behaviours, scholars who approached job crafting from a unidimensional perspective frequently combined these dimensions into a single job crafting measure (e.g., Akkermans & Tims, 2017; Audenaert et al., 2019; Dierdorff & Jensen, 2018; Mäkikangas et al., 2017; Tims et al., 2016; Travaglianti et al., 2016).

Consequently, approach and avoidance crafting behaviours have been distinguished in the most recent models of job crafting (Bruning & Campion, 2018, 2019; Zhang & Parker, 2019). Importantly, scholars have strongly advocated for distinguishing between these two forms of crafting, calling for a move away from composite scores that mix approach and avoidance scores (Zhang & Parker, 2019). Integrating approach and avoidance crafting actions into a single model, and reconciling the literatures using the JCM and the JDRMJC, the integrated model of job crafting formalised by Zhang and Parker (2019) is presented hereafter.

3.3.3 *The Integrated Model of Job Crafting*

The integrated model of job crafting (IMJC) developed by Zhang and Parker (2019) integrates both the JCM and the JDRMJC and both approach and avoidance

crafting actions. Notably, Bruning and Campion (2018) also developed a model of job crafting that built on these elements. Nevertheless, and contrary to Zhang and Parker's (2019) IMJC, their model distinguished between the focus of the JCM (i.e., work meaning and identify) and the focus of the JDRMJC (i.e., balancing job demands and resources and reaching PJ fit). As noted by Zhang and Parker (2019), distinguishing between these two foci might be inadequate because these models and their theoretical foundations in fact overlap: reaching PJ fit is not relevant to the JDRMJC only but also to the JCM (e.g., Lu et al., 2014; Wrzesniewski & Dutton, 2001), and increasing work meaning is not relevant to the JCM only but also to the JDRMJC (e.g., Tims et al., 2016). In addition, it may be noted that their model did not account for a hierarchical structure of job crafting actions, distinguishing superordinate and aggregate constructs, contrary to the IMJC.

The IMJC (Zhang & Parker, 2019) may be thought of as the most comprehensive model of job crafting to date (Figure 3.2). Job crafting actions are first categorised as being approach or avoidance-oriented. In fact, job crafting is modelled as an aggregate construct of approach and avoidance crafting, reflecting the difference between these two types of actions and their complementarity in defining job crafting. Indeed, approach and avoidance crafting have been shown to relate very differently to attitudes and behaviours (Lichtenthaler & Fischbach, 2019; Rudolph et al., 2017; Zhang & Parker, 2019), and to correlate poorly (Rudolph et al., 2017). Gathering effect sizes from meta-analyses (Lichtenthaler & Fischbach, 2016a; Rudolph et al., 2017) and single studies, Zhang and Parker (2019) also indicated that approach crafting behaviours were generally related to positive individual outcomes (e.g., work engagement, job satisfaction, job performance, meaningfulness, etc.), while avoidance crafting behaviours were generally related to

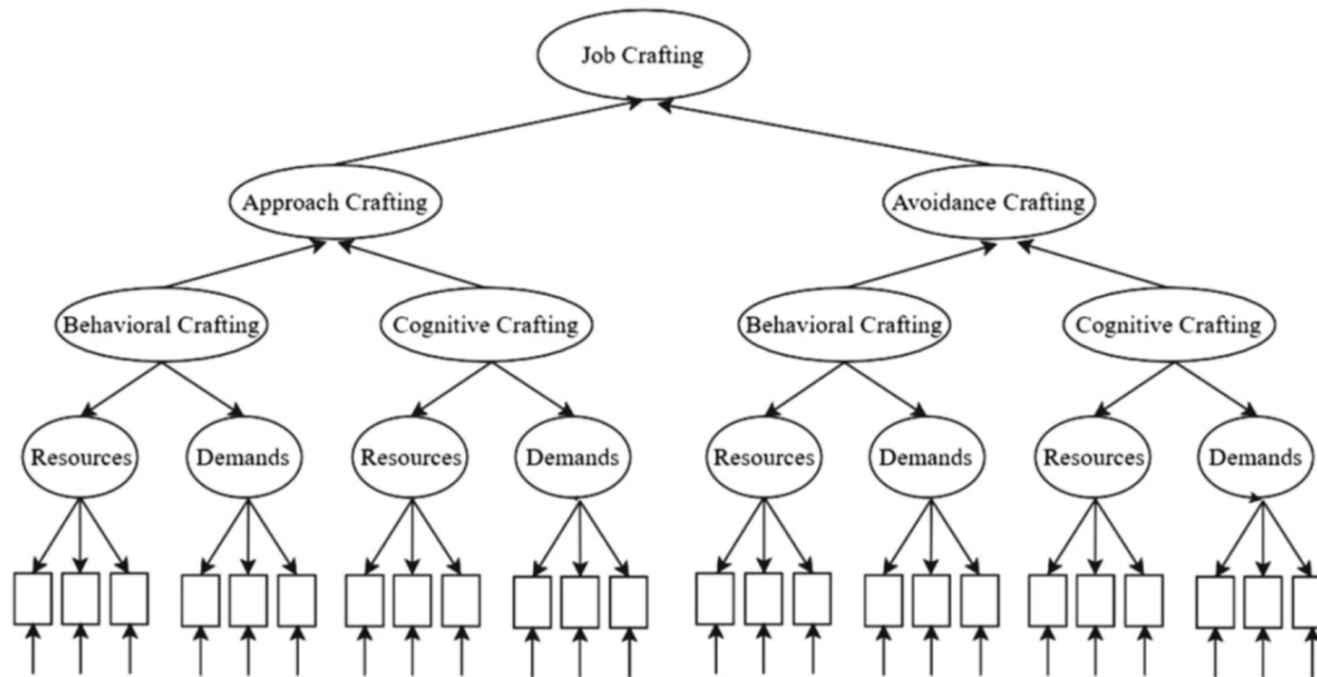


Figure 3.2. The proposed hierarchical model of job crafting (Zhang & Parker, 2019, p. 4)

undesirable employee outcomes (e.g., turnover intentions, burnout, job strain, psychological distress, etc.). Therefore, conceptualising approach and avoidance crafting as two distinct dimensions of job crafting is sensible, with these dimensions forming an aggregate job crafting construct. As per Section 2.3.2, an aggregate construct is defined by its lower-order variables, whereas a superordinate construct defines other lower-order variables as its manifestations (e.g., Edwards, 2001; Howell et al., 2007a, 2007b).

It is worth noting that an ongoing debate is focussed on whether avoidance crafting should be considered proactive (Zhang & Parker, 2019). This debate follows from empirical findings showing that avoidance crafting behaviours are rarely correlated with other constructs measuring proactivity (Zhang & Parker, 2019). Nevertheless, it is argued that such empirical findings may be due to the existing measures of avoidance crafting behaviours, which relate to a passive form of avoidance crafting, rather than to the conceptualisation of avoidance crafting itself, which could theoretically include active withdrawal-oriented behaviours (Zhang & Parker, 2019). Within each of these two categories, actions are conceptualised as being behavioural or cognitive (see Figure 3.2). While Tims and Bakker (2010) had excluded cognitive crafting from the JDRMJC, Zhang and Parker (2019) argued that the intangible nature of this action did not make it unsuitable for being considered a job crafting action: cognitive crafting is a self-initiated action that targets a change in the job situation. As such, an important facet of the JCM is integrated in the IMJC. Approach and avoidance crafting are each modelled as a higher-ordered aggregate construct having as lower-order constructs behavioural and cognitive crafting (see Figure 3.2). This conceptualisation is consistent with viewing both behavioural and cognitive crafting as different sets of actions, which should be combined to fully assess approach and avoidance crafting.

In each of the resulting four categories (i.e., behavioural approach crafting, cognitive approach crafting, behavioural avoidance crafting, cognitive avoidance

crafting), actions are further distinguished between those that target a change in job resources versus job demands. Each of the four categories is modelled as a higher-order superordinate construct having, as lower-order constructs, actions targeting a change in job resources and demands. Defining superordinate constructs at this level of the model is sensible. For instance, behavioural approach crafting, whether targeting a change in job resources or demands, are expansion-oriented (e.g., increasing feedback and increasing challenges) and they can also be differentiated from cognitive expansion-oriented crafting. In addition, approach crafting behaviours that target a change in resources and those that target a change in demands have been argued to share similar antecedents and outcomes (Zhang & Parker, 2019) and were shown to correlate highly (Rudolph et al., 2017). Hence, these behaviours have key characteristics in common, whose differences are minor compared to what they share, and which characteristics make them distinct from other sets of actions (i.e., cognitive approach crafting).

Despite highlighting the differential relationships between approach and avoidance crafting behaviours and employee attitudes and behaviours, Zhang and Parker (2019) proposed that a lack of PJ fit might be a common antecedent to both approach and avoidance crafting. More precisely, they proposed that lack of PJ fit might predict both approach and avoidance crafting in the same direction. Thereby, Zhang and Parker's proposition aligns with Tims and Bakker's (2010) proposition, which did not, then, distinguish between approach and avoidance crafting and solely focused on behavioural crafting. The limits of this proposition are analysed hereafter.

3.4 Change in Person-Job Fit Perceptions: Theoretical and Empirical Perspectives

From a theoretical viewpoint, it can be noted that the JCM, the JDRMJC and the IMJC all suggest that change in PJ fit perceptions and job crafting behaviours are intertwined. This potential relationship is conceptually sound as job crafting, by its nature

(i.e., the alteration of the job situation), maps onto the theoretical domain of PJ fit. Likewise, when Tims and Bakker (2010) posit that balancing personal needs and abilities and job demands and resources may alter PJ fit, it can be observed that there indeed exists a conceptual overlap between job resources and demands and PJ fit. As job resources and demands are job characteristics, they are necessary constituents of PJ fit, which is about the match between personal and job characteristics. Thus, the relationship between PJ fit and job crafting is conceptually strong, akin to attitude-behaviour correspondence (Ajzen & Fishbein, 1977).

However, despite this conceptual overlap, empirical evidence supporting the proposition that a lack of PJ fit (Tims & Bakker, 2010; Zhang & Parker, 2019), or lower PJ fit perceptions (Tims et al., 2016), triggers job crafting behaviours is missing. The investigation of this proposition becomes increasingly critical as job crafting research is growing in popularity (see Figure 3.1). Indeed, the following question may be raised: can job crafting behaviours be defined as actions in which people engage in order to improve their fit with their jobs when *no empirical study*, to date, has actually shown that these behaviours stem from lower PJ fit perceptions? Considering the importance of this question, it is necessary to critically examine existing research on this matter.

From an empirical perspective, some scholars could consider that the proposition linking a lack of perceived PJ fit to job crafting behaviours has been tested twice with inconclusive findings (Kooij et al., 2017; Tims et al., 2016). However, I would like to argue that such investigations did not appropriately test this proposition. To defend this point, I will comment on the two studies carried out by Tims et al. (2016) and Kooij et al. (2017). In so doing, I will reflect on the factors that may have caused these studies to not detect any significant effect, and I will subsequently explain why these studies may not be seen as appropriately testing the proposition that lower PJ fit perceptions trigger job crafting behaviours.

First, Tims et al. (2016) tested the effects of weekly perceived NS fit and DA fit (T1) on weekly job crafting behaviours (T2) on a sample of 114 employees working in different companies settled in the Netherlands. In terms of significant effects, it is possible that none were obtained because the time lag that was used for this study (i.e., one week) was too short or too long: the effect of PJ fit perceptions on job crafting behaviours could potentially require a shorter or a longer period of time to be detected as significant (Taris & Kompier, 2014; Zapf et al., 1996). In addition, the use of too small a sample size might have affected the significance of these effects (Cohen, 1988). Importantly, Tims et al. (2016) treated job crafting behaviours as a latent factor reflecting both approach and avoidance crafting behaviours. Thus, they did not distinguish between approach and avoidance crafting behaviours and this might have affected their results. For instance, it is possible that approach and avoidance crafting behaviours at T2 were respectively positively and negatively affected by PJ fit perceptions at T1, these effects cancelling out each other. I will now explain why this study may not be seen as testing the proposition that a lack of perceived NS fit and DA fit triggers job crafting behaviours. First, this study treated PJ fit perceptions as a state (weekly-bound), rather than as a trait (general PJ fit perceptions being not time-bound) (e.g., Roe & Inceoglu, 2016). As such, this study cannot be seen as best suited for understanding a general change in PJ fit perceptions, which is the focus of the present research. Second, the measures used by Tims et al. (2016) may not be seen as the most appropriate ones for testing an effect of PJ fit perceptions on job crafting behaviours over a one-week period. Indeed, there is little evidence to suggest that lower fit perceptions in the past week would predict job crafting behaviours in the following week because a low fit might have already been addressed. For instance, a medium fit in the past week might indicate that fit was very poor on Monday and rather good on Friday. In such a case, job crafting behaviours might have been enacted between Monday and Friday. The fit being good on Friday, there would be little reason to think

that the medium fit of the past week (not existing on Friday anymore) would trigger job crafting behaviours over the whole following week.

Second, the study conducted by Kooij et al. (2017) tested the effects of perceived NS fit and DA fit (T1) on job crafting behaviours (T2), controlling for job crafting behaviours at T1, over a period of approximately six weeks on a sample of 86 Dutch workers from a single company. As pointed out for the previous study, an absence of significant effect might have been due to the use of too short or too long a time lag, as well as to the use of too small a sample size. Importantly, this study tested the effect of PJ fit perceptions on a *change* in job crafting behaviours, as these behaviours were controlled for at T1. Consequently, the results obtained by Kooij and her colleagues cannot appropriately be viewed as results that pertain to testing the proposition that a lack of PJ fit leads to job crafting behaviours. Indeed, this proposition pertains to the frequency, rather than to the decrease or increase, of job crafting behaviours following fit evaluation. If this proposition were tested using *change* in job crafting behaviours, then this *change* would have to be associated with, or predicted by, a *change* in PJ fit perceptions. Such a relationship was not tested in this study. In addition, even though such a test had been conducted, it would have been a test of correlational rather than of “causal” nature due to changes covering the same period of time. Importantly, the findings obtained by Kooij and her colleagues are limited, given that these authors operationalised job crafting behaviours as approach crafting behaviours only. Finally, no test of longitudinal measurement invariance was reported in their study regarding their job crafting measures. Such a report would have been informative for interpreting the robustness of their findings, given that factor loadings for their job crafting measures changed from T1 to T2. Overall, it is reasonable to consider that the proposition that a lack of PJ fit (or lower PJ fit perceptions) triggers job crafting behaviours has not been tested appropriately. Furthermore, none of these two studies investigated the effect of PJ

fit perceptions on avoidance crafting behaviours. This lack of examination is presumably the reason that led Zhang and Parker (2019) to state that the effects of PJ fit on both avoidance and approach crafting behaviours had not been investigated.

I would also like to argue that the *theoretical* relationship between PJ fit perceptions and job crafting behaviours has been underdeveloped. As far as the two studies conducted by Tims et al. (2016) and Kooij et al. (2017) are concerned, the tests that linked PJ fit perceptions to job crafting behaviours were respectively performed as part of an alternative research model (Tims et al., 2016) and as control effects (Kooij et al., 2017). As these tests were not the focus of these studies, Tims et al. (2016) and Kooij et al. (2017) did not elaborate on the theoretical relationships linking lower NS fit and DA fit perceptions to job crafting behaviours. Therefore, the theoretical relationships explaining these effects may be traced back to Tims and Bakker (2010), who proposed that a lack of PJ fit triggers job crafting behaviours. This proposition necessitates a theoretical re-examination in light of the distinctive features of both (a) NS fit and DA fit, and (b) approach and avoidance crafting behaviours. I will now elaborate on why such a theoretical re-investigation is necessary.

First, the theory of PE fit and job stress (French et al., 1974; Harrison, 1978), the theory of work adjustment (Dawis, 2005) and the theory of self-regulation applied to PE fit (Johnson, Taing, et al., 2013) all explain the psychological mechanisms pushing people to achieve fit (e.g., reducing stress.). In contrast, Tims and Bakker (2010) did not elaborate on the psychological reason(s) leading employees to reach PJ fit except that employees may balance their job demands and resources with their personal needs and abilities. It may be argued that aligning personal abilities and needs with job demands and resources relates to the theory of self-regulation applied to PE fit. Yet, it could be counterargued that self-regulation theory usually (a) necessitates that discrepancies (i.e., ideal versus current states) are assessed on commensurate dimensions, (b) gives a clear

rationale about what ideal conditions are and why, (c) builds on hierarchical feedback loops, where interrelationships amongst loops are clearly defined (e.g., Carver & Scheier, 1982; Edwards, 1992; Johnson, Taing, et al., 2013). As such, the proposition made by Tims and Bakker (2010) may be seen as lacking theoretical detail when it is approached through the lens of self-regulation. For instance, no clear mapping is given regarding the correspondence between (a) the balance of job demands and resources and (b) NS fit and DA fit. This absence of clear mapping affects the conceptual clarity of the discrepancies that may lead employees to alter their job resources and demands. In addition, Tims and Bakker further equate a *resource* with a *supply* when they elaborate on a potential change in NS fit pertaining to *specific* job resources. Such a parallel is conceptually debatable in the indirect fit research paradigm, as an oversupply of a specific job characteristic could be considered a demanding condition in the PE fit framework (e.g., Harrison, 1978) and, by association, a demand in the JD-R framework (Demerouti et al., 2001). Importantly, the reason(s) pushing employees to attain PJ fit is/are not developed (why is PJ fit an ideal condition?). Overall, it may be concluded that the theoretical relationship proposed by Tims and Bakker (2010) may benefit from being revisited. Of note, Dust and Tims (2019) recently suggested that stress resulting from indirect NS fit might be a driver of avoidance crafting behaviours. Thereby, they clearly identified a psychological mechanism underlying the relationship between a lack of NS fit and job crafting behaviours. However, their theoretical argument pertained to *indirect* NS fit relating to a specific job attribute (i.e., task interdependence), and it did not integrate DA fit, nor a focus on approach crafting behaviours. While the integration of a psychological mechanism into job crafting research is insightful, the propositions made by these authors do not differ in essence from those made by Harrison in 1978 about the relationship linking an indirect lack of NS fit to stress and to coping mechanisms.

Secondly, although Tims and Bakker (2010) mentioned that PJ fit could be approached as NS fit and/or DA fit, they did not explicitly distinguish between NS fit and DA fit in formulating their proposition. The same observation holds for the proposition made by Zhang and Parker (2019), who stated that a lack of PJ fit may trigger both approach and avoidance crafting. This absence of distinction between NS fit and DA sharply contrasts with the conceptualisation of PJ fit in the theories pertaining to a drive to fit (i.e., theory of PE fit and job stress, theory of work adjustment, and theory of self-regulation applied to PE fit). Indeed, these theories all suggest, or propose, that NS fit and DA fit both influence job fitting-actions in their own way, but also in conjunction with potential interaction or mediation effects (see Section 2.4). Distinguishing between both types of fit allows for “improving predictions” (Dawis, 2005, p. 7), making hypotheses about “differential effects” (Caplan, 1987, p. 250), and analysing how these types of fit may relate to each other in the prediction of outcomes. The fact that NS fit and DA fit each relate to need fulfilment processes working in opposite direction (e.g., Caplan, 1987; Edwards, 1991, 2008; Harrison, 1978) could be seen in itself as a sufficient reason for analysing each of their effects on job crafting behaviours. In fact, it is even argued that research on PE fit (ergo PJ fit) *should* indicate whether PE fit refers to NS fit, DA fit or supplementary fit (Edwards, 2008). Studying the theoretical relationship linking PJ fit to job crafting behaviours, accounting for the peculiarities of both NS fit and DA fit, is thus necessary.

An additional theoretical limitation pertaining to this relationship may be noted. When Tims and Bakker (2010) formulated their proposition, the necessity of distinguishing between approach and avoidance crafting was then not established. Job crafting was at that time an emerging construct and empirical studies were scarce. Theoretical advances in job crafting theory now highlight that approach and avoidance crafting should be studied separately, as they often relate differently to other variables

(Zhang & Parker, 2019). Hence, the theoretical relationships linking PJ fit perceptions to job crafting behaviours should account for both approach and avoidance crafting. Importantly, Zhang and Parker (2019) distinguished between these two forms of job crafting in proposing that a lack of PJ fit might be a common predictor of approach and avoidance crafting. Yet, their proposition was not underpinned by arguments explaining why this may be the case. Such arguments would have been insightful, as these authors strongly emphasised that avoidance and approach crafting often differed in their relationships with other variables. Overall, both a theoretical and empirical examination of the relationship between (a) perceived NS fit and DA fit and (b) approach and avoidance crafting behaviours is warranted.

In terms of whether job crafting behaviours affect change in perceived NS fit and DA fit, empirical evidence on this relationship has been severely limited. At this stage of the present research, it is critical to note that the *change* in a variable, when this variable concerns individuals, may typically be approached as *residual* change (i.e., residuals obtained from regressing a variable at T2 on itself at T1) or as *intra-individual* change (e.g., Henk & Castro-Schilo, 2016). Importantly, these two types of change are not equivalent and may yield different findings (e.g., Castro-Schilo & Grimm, 2018; Stoolmiller & Bank, 1995). Indeed, the former type of change is rather sensible to inter-individual change (Selig & Little, 2013), while the latter reflects the “true” change that occurs within individuals (Henk & Castro-Schilo, 2016; McArdle, 2009). As perceived NS fit and DA fit are *self*-perceptions, and as job crafting behaviours are *self*-initiated, it seems rather legitimate to argue that the type of change that *should* be studied in relation to PJ fit perceptions and job crafting behaviours is *intra-individual* change. However, no empirical study to date has examined whether this type of change in PJ fit perceptions is affected by job crafting behaviours.

Given this absence of empirical research, I will briefly discuss results from studies that have focused on residual-change in PJ fit perceptions. While these findings are not the most appropriate to build from for the present research, they nonetheless offer insights into change in PJ fit perceptions. A couple of studies only have investigated the impact of approach crafting behaviours on PJ fit perceptions at T2 controlling for these perceptions at T1 (Kooij et al., 2017; Lu et al., 2014; Niessen et al., 2016). Importantly, this relationship has been fully supported in one study only (Lu et al.; 2014). First, Kooij et al. (2017) showed that approach crafting behaviours at T2 (but not at T1) significantly led to perceived NS fit at T2, controlling for this type of fit at T1. However, when DA fit was studied in lieu of NS fit, this relationship was only partially supported in the authors' Table 5, and not supported in their Table 8. Importantly, these results may not be considered as supporting an effect of job crafting behaviours on residual change in PJ fit perceptions due to temporal precedence issues (i.e., a variable at T2 may not affect a change between T1 and T2). Second, Lu et al. (2014), in their the two-wave study, found that a residual change in approach crafting behaviours was significantly associated with a residual change in both perceived NS fit and DA fit. Hence, approach crafting behaviours may lead to a residual change in PJ fit perceptions. Finally, Niessen et al. (2016) conducted a two-wave two-week lag study on a sample of German workers ($N = 118$). In their study, they found a non-significant effect of task crafting (a measure which, I believe, could be classified as approach crafting) on residual change in perceived NS fit. Overall, it is rather sensible to assert that the aforementioned studies have brought *preliminary* (rather than *strong*) evidence for a positive relationship between approach crafting behaviours and residual change in PJ fit perceptions, suggesting that approach crafting behaviours may affect PJ fit perceptions in a positive way. However, whether similar study results would be found focusing on intra-individual change in PJ fit perceptions remains to be investigated. Of note, Chen et al. (2014) showed that job

crafting behaviours could facilitate PJ fit perceptions. However, their study was cross-sectional and the job crafting scale which they used could be seen as mixing both approach and avoidance crafting items.

Importantly, an absence of research regarding the impact of avoidance crafting behaviours on change in PJ fit perceptions should be noted. This lack of research is indeed apparent in Zhang and Parker's (2019) literature review, where they describe as "N/A" the nature of the impact of avoidance crafting behaviours on PJ fit. Therefore, research on this relationship is necessary, both from a theoretical and an empirical perspective.

As a direct consequence of the aforementioned research gaps, it can be deduced that the question of whether and how perceived NS fit and DA fit change through job crafting behaviours remains unanswered. Likewise, whether these types of fit influence each other over time through job crafting behaviours has been unaddressed. Consequently, the next chapter elaborates on the relationship between change in perceived NS fit and DA fit and approach and avoidance crafting behaviours.

3.5 Conclusion

Job crafting actions are volitional and change-oriented actions that target the alteration of one's job situation. As a subset of job crafting actions, job crafting behaviours have been proposed to follow from a lack of PJ fit with the end-goal of improving PJ fit. However, this theoretical proposition does not account for the peculiarities of NS fit and DA fit and thereby neglects their potential differential impact on job crafting behaviours. Consequently, this proposition may benefit from being theoretically re-examined in light of both types of fit. Additionally, the re-examination of this proposition may benefit from distinguishing between approach and avoidance crafting, as these types of crafting have been suggested to relate differently to antecedents and outcomes. Approach and avoidance crafting are in fact theorised to be distinct constructs, such that they may be defined as distinct dimensions of job crafting.

Distinguishing between perceived NS fit and DA fit, and between approach and avoidance crafting behaviours, the next chapter builds on conservation of resources theory (Hobfoll, 1989) to examine how PJ fit perceptions may change over time through job crafting behaviours. This next chapter, therefore, fills research gaps on a relationship that has remained both empirically under-investigated and theoretically underdeveloped.

Chapter Four

Change in Person-Job Fit Perceptions and Job Crafting Behaviours: A Conservation of Resources Perspective

4.1 Introduction

Following the research gaps highlighted in Section 3.4, this chapter examines the intertwined nature of change in perceived NS fit and DA fit and job crafting behaviours through the lens of conservation of resources theory (COR; Hobfoll, 1989). First, I will introduce COR and will briefly elaborate on its relevance for the present research. Then, I will present the research model under investigation and will use COR to develop hypotheses linking perceived NS fit and DA fit to approach and avoidance crafting behaviours. Finally, I will present hypotheses regarding the impact of job crafting behaviours on change in perceived NS fit and DA fit. Following on from this, I will also offer hypotheses regarding change in these PJ fit perceptions through job crafting behaviours. In summary, this chapter pertains to the theoretical development of the relationship between change in PJ fit perceptions and job crafting behaviours.

4.2 Conservation of Resources Theory

Conservation of resources theory (COR; Hobfoll, 1989) is a stress-focused theory positing that individuals are driven to protect and retain their resources, and that they are motivated to acquire new ones. Resources are defined as “those objects, personal characteristics, conditions, or energies that are valued in their own right, or that are valued because they act as conduits to the achievement or protection of valued resources” (Hobfoll, 2001, p. 339). According to COR (Hobfoll, 1989), the threat of resources, or actual loss of resources, engenders stress. Additionally, stress may follow from a lack of resource gain following the investment of resources. When confronted with any of these stressful situations, people are theorised to be driven to minimize resource loss. When not

confronted with stress, they are theorised to be striving to develop resource surpluses, which constitute a buffer against potential future resource loss.

The drive to minimize resource loss may engender both behavioural and cognitive coping strategies, such as proactive behaviours (e.g., Westman et al., 2004) and the downward re-evaluation of the value of threatened resources (Hobfoll, 1989). It may be observed that the former strategy is similar to the coping mechanisms of the theory of PE fit and job stress (French et al., 1974; Harrison, 1978) and to job crafting behaviours (e.g., Zhang & Parker, 2019). The latter strategy is consistent with the defence mechanisms mentioned in the theory of PE fit and job stress (French et al., 1974; Harrison, 1978) and with cognitive job crafting (Zhang & Parker, 2019). Importantly, proactivity is key to COR (Chen et al., 2015; Hobfoll, 2001).

In addition, COR suggests that those possessing a greater amount of resources are more likely to acquire new resources than those possessing a smaller amount of resources (Hobfoll, 2001). It is indeed theorised that the orchestration of resource acquisition is facilitated when resources are abundant. Conversely, COR suggests that people possessing a smaller amount of resources are more vulnerable to resource loss. A key element of COR is that resource loss is disproportionately more salient than resource gain (Hobfoll, 2001). In lay terms, people are more impacted by resource loss than by resource gain. This implies that stressful situations have more motivational power than non-stressful situations regarding the investment of resources as well as the acquisition of new resources (Hobfoll, 2002).

As a stress-focused theory, COR (Hobfoll, 1989) is highly relevant to the present research. In particular, COR may be viewed as more suitable for the present research than the theory of PE fit and job stress (see Section 2.4.1) in explaining how perceived NS fit and DA fit may change as a function of job crafting behaviours. Indeed, despite its general predictions, the theory of PE fit and job stress (French et al., 1974; Harrison, 1978) mainly

focuses on *specific* personal or job attributes, and how fit for these attributes may affect stress, its resulting actions and thus fitting behaviours. In contrast, COR (Hobfoll, 1989) builds around the notion of a *resource pool* and allows for examining how *a set* of attributes may relate to stress, its resulting actions and, thus, fitting behaviours. As PJ fit perceptions encompass a variety of attributes that are weighted at the same time (Kristof-Brown et al., 2005; Kristof-Brown & Billsberry, 2013), COR may be seen as potentially more suitable than the theory of PE fit and job stress in theorising about the influence of stress in the development of PJ fit perceptions.

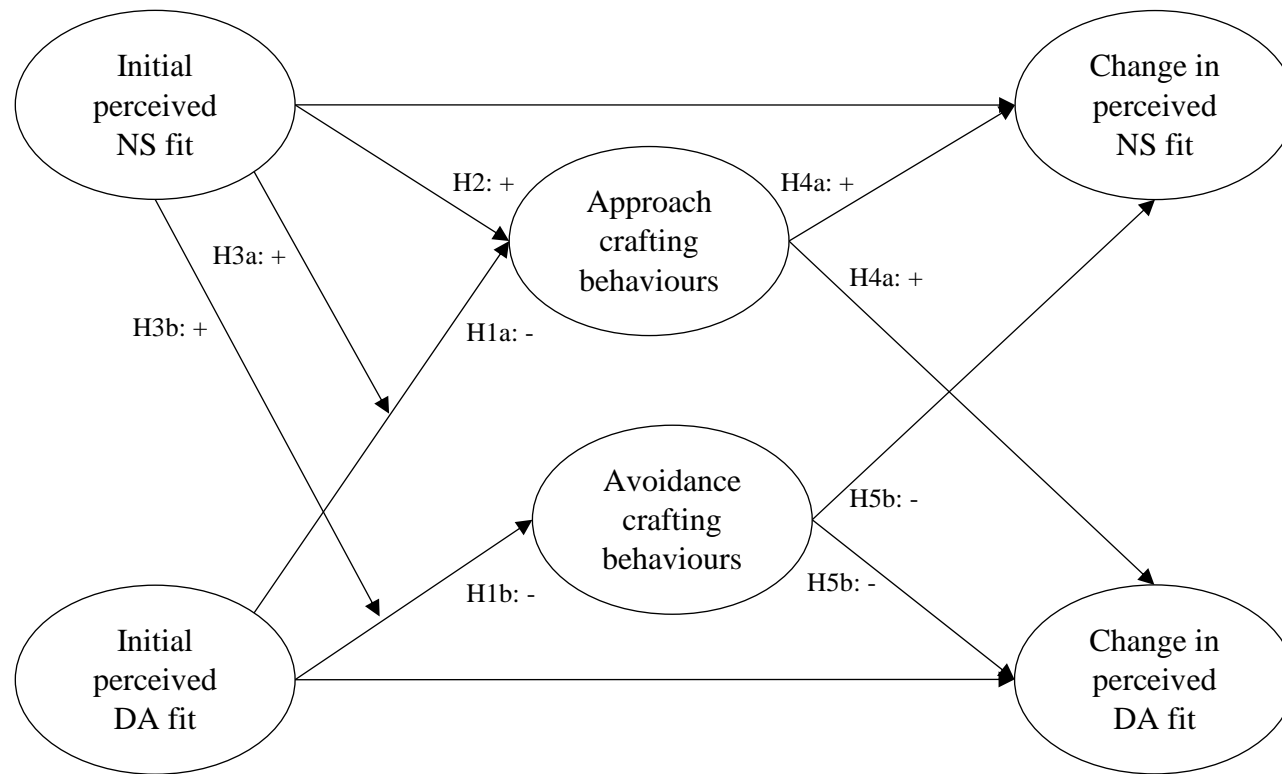
It is worth noting that COR and the theory of PE fit and job stress both posit that stress may occur because of a threat of supply (or resource) loss, and that stress may trigger coping mechanisms (Harrison, 1978; Hobfoll, 1989). Thus, it is rather unsurprising that a theoretical overlap between COR and the theory of PE fit and job stress was acknowledged by Hobfoll (2001). In relation to the present research, COR could be seen as richer than the theory of PE fit and job stress in that COR does not allow for making predictions based on stress only, but it also allows for understanding behaviours that result from a motivational process occurring in the absence of stress (Hobfoll, 1989).

In contrast to the theory of work adjustment (TWA; see Section 2.4.2), COR offers a theoretical framework for understanding actions that are associated with both perceived DA fit and NS fit. On the one hand, DA fit may primarily be seen as being related to the stress process of COR, and NS fit as being related to its motivational (resources acquisition) process (see next section for more detail – Section 4.3). On the other hand, TWA does not clearly explain why and how DA fit may affect fitting action, and it focuses on the role of NS fit in adjustment behaviours (Dawis, 2005; Dawis et al., 1964; Dawis & Lofquist, 1976).

In comparison to the theory of self-regulation framework applied to PE fit (Johnson, Taing, et al., 2013), COR has the advantage of offering and specifying a clear hierarchy of goals, where two hierarchical feedback loops might co-exist: (a) one where employees avoid the loss of job supplies, (b) another where they seek to increase job supplies (see Section 2.4.3). Furthermore, COR posits that resource loss minimisation is more impactful on people's attitudes and behaviours than resource acquisition (e.g., Hobfoll, 2002). In other words, resource loss prevention may be seen as superseding all other motives. While this perspective is not incompatible with the theory of self-regulation applied to PE fit (see Section 2.4.3), this latter theory could be viewed as primarily focusing on the drive to increase rather than to protect or maintain NS fit. Overall, COR is preferred for the present research over the theory of PE fit and job stress, TWA, and the theory of self-regulation applied to PE fit for its clarity, its conceptual breadth, and its relevance to research carried out in the perceived fit research paradigm. It also allows for integrating different elements of the other aforementioned theories. In order to facilitate the reading of the following two sections, which pertain to hypotheses development, the research model under investigation is presented on the next page (Figure 4.1).

4.3 From Perceived NS and DA Fit to Job Crafting Behaviours

Before developing hypotheses based on COR (Hobfoll, 1989), it is first necessary to emphasise that jobs are central to resource possession. Not only are jobs associated with job resources (e.g., autonomy, task variety, prestige, or pay) but they are also very likely to be associated with a variety of life resources (e.g. one may need a job to repay a credit associated with a house or a car, one may need a job to bolster self-esteem, or one may want to save money to be prepared against a potential undesirable life event). For these reasons, and consistent with COR (Hobfoll, 1989), it is reasonable to think that



Note. Only direct effect hypotheses are depicted for clarity purposes

Figure 4.1. Research model featuring direct effect hypotheses

employees should generally strive to remain employed in their current jobs, potentially until they are able to secure more fulfilling jobs.

Employment is offered in exchange for accomplishing job tasks (Kristof, 1996), and thus for meeting job demands. Therefore, employees should strive to reach DA fit in order to keep their jobs and be protected against resource loss. This perspective is consistent with the theory of PE fit and job stress (Harrison, 1978), which suggests that a lack of DA fit may engender stress when job supplies are received in exchange for meeting job demands. This reasoning is also consistent with Tims and Bakker's (2010) proposition, indicating that a lack of PJ fit should trigger job crafting behaviours.

As a result, it is conceivable that approach crafting behaviours may increase as perceived DA fit worsens. Employees who believe that their abilities are deficient may seek to develop their skills or to obtain feedback in order to improve their performance and better cope with job demands. In addition, employees facing unclear or conflicting job demands, which could potentially diminish their abilities to manage those demands, may also engage in information and feedback seeking behaviours in order to clarify those demands (Ashford & Black, 1996). This could, in turn, restore DA fit. Such behaviours fall into approach crafting behaviours, as they are targeted at actively solving job issues and seeking positive job aspects. In the same vein, employees could try to accomplish their tasks in a way that better suits their skillset (Zhang & Parker, 2019).

Low DA fit perceptions are also likely to elicit avoidance crafting behaviours. For instance, employees may attempt to move away from demands that they perceive as inappropriate or overwhelming. In so doing, they may focus on job demands that suit them best with the intent of improving DA fit. Likewise, employees who face a work overload might have to prioritise their tasks, potentially having to neglect some tasks over others (Wickens et al., 2015). In choosing to address specific job demands, rather than all job demands at once, they might make their workload more manageable for a time and

be better able to handle work. Avoidance crafting behaviours may, therefore, follow from a lack of fit between job demands and abilities. The threat of losing resources both at work (e.g., autonomy, prestige, etc.) and in the life sphere (e.g., losing a rented accommodation because of a decrease in salary), may thus push employees to engage in both approach and avoidance crafting behaviours in order to improve DA fit. Overall, the threat of resource loss associated with lower DA fit perceptions may push people to engage in approach and avoidance crafting behaviours.

In contrast, perceived NS fit (or the lack thereof) is not expected to be related to a threat of resource loss, which could lead to an increase in job crafting behaviours. Although COR (Hobfoll, 2001) suggests that those possessing fewer resources (or supplies) may be more vulnerable to resource loss than others, this vulnerability cannot be considered a threat in itself. For instance, people may possess a small amount of resources and yet not have these necessarily threatened. Importantly, NS fit does not address the *conditions or processes* relative to the *provision* of job supplies (*these* are potentially threatening). It may be thought that lower NS fit perceptions may be more threatening for employers than for employees, as they may lead to dissatisfaction and quitting the organisation (Dawis, 2005). Consequently, job crafting behaviours resulting from a threat of resource loss are more relevant to perceived DA fit than to perceived NS fit.

Hypothesis 1: Initial perceived DA fit negatively affects approach crafting (1a) and avoidance crafting (1b).

According to COR (Hobfoll, 1989), people should strive to develop resource surpluses in the absence of current stressors. Furthermore, people may proactively leverage their resources to this end (Chen et al., 2015; Hobfoll, 2001). In this context, it may be reasoned that it is perceived NS fit, and not the lack thereof, that should be positively associated with approach crafting behaviours. This reasoning is coherent with

(a) viewing perceived NS fit as an indicator of resource possession, and (b) seeing resource gain orchestration as a process fuelled by approach crafting behaviours.

First, perceptions of NS fit may be seen as an indicator of resource possession because they encompass a variety of job aspects that are evaluated against personal preferences and needs (Kristof-Brown et al., 2005). Furthermore, these perceptions are related to the total amount of supplies that employees receive from their jobs (Cable & DeRue, 2002). Supporting this perspective, perceived NS fit was evidenced to increase as a variety of personal needs were met by their specific job supplies (Travaglianti et al., 2016). As some needs are universal (Deci & Ryan, 2000), it is also sensible to think that these needs are all taken into account when people form perceptions of NS fit. Similarly, perceived NS fit might reflect that a variety of supplies are provided by the job because some supplies (e.g., ability to organise tasks, role as a leader, etc.) are commonly valued (Hobfoll, 2001). In addition, it was found that the perception of NS fit pertaining to *specific* desirable job supplies (e.g., autonomy, prestige, variety) could increase as the perceived quantity of these job supplies increased (Edwards et al., 2006). Therefore, perceived NS fit may be an indicator of the amount of job resources possessed by individuals, with greater fit indicating a greater pool of resources.

Importantly, the proactive acquisition of resources relates to approach crafting behaviours rather than to avoidance crafting behaviours. The *orchestration* of resource gain (Hobfoll, 2001) denotes moving towards desirable job aspects rather than moving away from undesirable job aspects. In engaging in avoidance crafting behaviours, employees are not expected to develop their resources. Rather, they avoid demanding job situations and the acquisition of low job resources (Zhang & Parker, 2019). In opposition, approach crafting behaviours directly refer to the investment and acquisition of resources.

First, seeking resources and seeking challenges rely on leveraging existing resources. Indeed, resources such as leader-member exchange, feedback, social support

psychological safety, empowering leadership and developmental opportunities have all been suggested to foster approach crafting behaviours (Gordon et al., 2015; Kim & Beehr, 2018; Plomp et al., 2019; Van Wingerden & Poell, 2019). Using existing resources to acquire new ones is, in fact, rather logical. For instance, employees might not persist in seeking feedback or advice if they are not likely to be given any. Supporting this perspective, feedback seeking behaviours have been shown to increase when frequent feedback, either positive or negative, is actually given (Anseel et al., 2015). Likewise, employees will most probably not be able to add on job tasks or increase task variety if they are not given autonomy in the first place to so do, or if these behaviours are not tolerated by supervisors. Overall, employees may hardly seek and obtain resources or challenges if they do not work in an environment that is rather favourable to them.

In conjunction with this, I would like to suggest that the leveraging of existing resources necessary to approach crafting behaviours might be one of the key characteristics of these behaviours, which differentiates them from other self-regulation and adjustment behaviours. When employees are dissatisfied with their work conditions, or when they experience a discrepancy between what they would like to obtain from their jobs and what they actually obtain from their jobs, they should be motivated to change their job or employment situation (e.g., Dawis, 2005; Johnson, Taing, et al., 2013). Hence, it is typically assumed that employees who perceive a lack of NS fit may engage in corrective actions, such as negotiating about their work conditions, quitting the organisation, or looking for another job. However, these behaviours, in contrast to approach crafting behaviours, do not rely on leveraging existing resources. Importantly, job crafting behaviours may be enacted over a period of time and may build on the *continuous* usage of resources. In contrast, actions such as negotiation behaviours are time-bound and do not require the possession of resources. Hence, it is thus rather sensible that approach crafting behaviours should follow from NS fit, rather than the lack thereof,

while other types of adjustment behaviours may theoretically be stimulated by a lack of NS fit.

Importantly, approach crafting behaviours target the acquisition of resources. This acquisition of resources is readily apparent in *seeking resources*, but it is also consistent with seeking challenges. Although challenges are considered a form of demand in the JD-R and JDRMJC (Tims et al., 2012), the argument could be made that these challenges are in fact resources. Allowing for self-development and growth, challenges are job aspects that directly fall within the category of job resources, as defined per the JD-R (Demerouti et al., 2001). Furthermore, the simple fact that employees may *seek* challenges is consistent with viewing these challenges as being valued. If these challenges hold value for employees, then they may be defined as resources as per COR (Hobfoll, 1989). One could even argue that seeking positive job aspects is tautological: most people would not *seek* attributes being harmful for them. In seeking challenges, such as adding more tasks to their work, employees may seek to acquire valued resources, and they may obtain them both directly and indirectly. They may acquire resources directly as they change the nature of their work and successfully deal with challenges that are personally rewarding to them. In addition, they may acquire resources indirectly, through their effort being noticed by the organisation (e.g., pay raise, promotion or prestige gained after improving a work process).

Consequently, and consistent with COR's notions of resource investment and resource acquisition, perceived NS fit should be related to leveraging and acquiring resources with approach crafting behaviours. Interestingly, it could be reasoned that engaging in avoidance crafting behaviours may be indirectly related to the acquisition of resources. Indeed, it could be advanced that avoidance crafting behaviours may allow employees to free up energies being then used to acquire resources through approach crafting behaviours. However, avoidance and approach crafting behaviours are very

weakly related (Zhang & Parker, 2019). It could also be reasoned that perceived DA fit could be related to approach crafting behaviours because abilities are personal resources that could be used to acquire new resources. However, and contrary to perceived NS fit, perceiving greater DA fit does not indicate a greater amount of personal resources. Perceived DA fit merely indicates the possession of greater personal abilities *for the job*. Whether employees possess surpluses of abilities transcending the boundaries of their jobs is not measured by perceptions of DA fit. Indeed, these perceptions indicate that the requirements of the job are being met by personal capabilities, just as perceptions of NS fit indicates that personal requirements are met by job supplies. Importantly, although perceived DA fit reflects the possession of abilities for the job (and potentially extra-abilities), the proximal antecedent of approach crafting behaviours should be perceived NS fit rather than DA fit. First, abilities assessed in relation to job demands are by definition already used in the job. Second, whether extra personal abilities may be leveraged for resource gain should primarily be influenced by NS fit. Indeed, employees may hardly leverage their skillsets if their work conditions preclude them from so doing. This perspective calls for a moderation hypothesis, which I will elaborate on shortly after the following statement:

Hypothesis 2: Initial perceived NS fit positively affects approach crafting behaviours.

Up to this point, I have considered the effect of each perceived DA fit and NS fit on job crafting behaviours. Hereafter, I will put forward arguments pertaining to how these two types of fit might interact in predicting job crafting behaviours. More precisely, I argue that the negative relationship between perceived DA fit and job crafting behaviours should be strengthened when perceived NS fit is high. My argument builds on (a) Hypothesis 1 and the threat of resource loss, (b) Hypothesis 2 and the leveraging of resources, and (c) the *value* of resources.

First, it is sensible to argue that approach crafting behaviours resulting from lower DA fit perceptions might increase as perceived NS fit increases because these behaviours necessitate the leveraging of resources, as previously argued. For instance, employees who fear resource loss due to a lack of DA fit could ask for more feedback on how to improve their performance when they are confident that they will get the feedback they need. Similarly, employees willing to make work processes more suited to their skills might actually alter these processes more when they have the autonomy to bring such a change (Wrzesniewski & Dutton, 2001). Therefore, perceived NS fit should facilitate approach crafting behaviours stemming from lower DA fit perceptions.

The same phenomenon should occur when avoidance crafting behaviours are considered in lieu of approach crafting behaviours. Although the presence of resources has been shown to be weakly negatively correlated with avoidance crafting behaviours (e.g., Gordon et al., 2015; Plomp et al., 2019; Rudolph et al., 2017), perceived NS should facilitate avoidance crafting behaviours that stem from lower DA fit perceptions. For instance, employees benefiting from good relationships at work may attempt to pass on to their colleagues some of their (unpleasant) tasks (Tims & Parker, 2019). Moreover, employees who have some autonomy in their job may use this autonomy to postpone working on undesirable projects.

Second, COR suggests that stress might be greater when the value of resources threatened by loss increases (Hobfoll, 1989). As such, employees might be more motivated to address a lack of DA fit when the job provides them with valued resources. This perspective is compatible with the theory of PE fit and job stress (French et al., 1974; Harrison, 1978), which suggests that the motivational force to fulfil a particular need may depend on the importance placed on this need.

Importantly, resources allowing employees to satisfy their personal needs or goals are valued (Halbesleben et al., 2014). Hence, job supplies matching employees' needs

should be valued by employees. Therefore, it can be reasoned that employees should be increasingly driven to reach DA fit and engage in job crafting behaviours as they experience greater NS fit. Indeed, not meeting job demands and losing resources might have a higher perceived negative impact for someone possessing valued resources than for someone possessing resources of little value. Considering that perceived NS fit relates to both the value of resources and their leveragability, the following hypothesis is stated:

Hypothesis 3: Initial perceived NS fit moderates the effects of initial perceived DA fit on approach crafting behaviours (3a) and avoidance crafting behaviours (3b), such that these effects become stronger as initial perceived NS fit increases.

4.4 From Job Crafting Behaviours to Change in Perceived NS and DA Fit

Approach crafting behaviours are related to seeking positive work aspects and seeking resources. As such, successful enactment of these behaviours should result in a greater resource pool. These resources may be personal (e.g., task mastery or self-efficacy) or job-related (e.g., better-suited tasks or improved relationships with co-workers). Consistent with this proposition, a study showed that the quantity of a variety job resources, measured as a single (composite) variable, increased as a result of approach crafting behaviours (Tims et al., 2013). In addition, self-efficacy has been shown to increase when approach crafting behaviours were engaged by employees (Miraglia et al., 2017). This increase in resources may translate into an increase in both perceived NS fit (related to job resources) and DA fit (related to personal resources). Consistent with these findings, empirical research studies suggest an improvement of both perceived NS fit and DA fit when approach crafting behaviours are engaged by employees (Kooij et al., 2017; Lu et al., 2014).

The relationship between avoidance crafting behaviours and change in perceived NS fit and DA fit is theoretically more complex than the previous one. The reason for this increased theoretical complexity is the paradoxical reasoning that avoidance crafting

behaviours, despite their suggested intent to improve NS fit and DA fit, may actually worsen these types of fit. Indeed, avoiding job demands does not equate with wiping out these job demands from the employees' prescribed tasks and duties nor from organisational demands. When employees choose to focus on a subset of tasks, thereby neglecting other tasks, job demands that are unaddressed may accumulate over time. As such, the accumulation of these demands may create a work overload or work situations that become unmanageable for employees. These employees may become overwhelmed and may struggle with job demands returning to them. In turn, such a situation is likely to result in a decrease in DA fit. Empirically, avoidance crafting behaviours have been related to reduced work performance (Demerouti, Bakker, & Halbesleben, 2015; Gordon et al., 2015), as well as to increased employee exhaustion (Petrou et al., 2015). These results suggest that avoidance crafting behaviours may affect perceived DA fit negatively. Additionally, perceived NS fit may also be negatively affected by these behaviours because a decrease in performance may be associated with a decrease in supplies (e.g., lower bonus, lower autonomy, etc.).

Although it is possible that employees may count on their colleagues to work on tasks that they avoid, avoidance crafting behaviours are not likely to result in a permanent change in the job and an improvement in PJ fit perceptions. Indeed, these behaviours are different from job change negotiation behaviours, which have the particularity to target a formal change in the job (Zhang & Parker, 2019). Furthermore, while employees may try to 'sell' their avoided job demands to their colleagues (e.g., "I think it could be interesting for you to work on this task because..."), co-workers might perceive this 'selling' attitude to be self-interested, which may trigger incivility responses that are harmful for the job crafter's well-being (Tims & Parker, 2019). In the same vein, avoidance crafting behaviours have been related to interpersonal conflict (Tims et al., 2015a). A decrease in the quality of co-worker relationships may thus potentially reduce employees' social job

supplies over time, affecting perceived NS fit negatively. It is also reasonable to think that a deterioration of the quality of relationships at work may negatively affect perceived DA fit when employees have to meet job demands in teams. Overall, as avoidance crafting behaviours are related to (a) an absence of formal job change, (b) a potential accumulation of job demands, (c) a probable non-delivery on those demands, (d) potential social tensions associated with the avoidance of interdependent tasks, as well as to empirical findings that suggest (e) burnout and (f) decreased performance, it may be hypothesized that:

Hypothesis 4: Controlling for initial perceived NS fit and DA fit, approach crafting behaviours positively affect change in perceived NS fit and DA fit (4a); and avoidance crafting behaviours negatively affect change in perceived NS fit and DA fit (4b).

Integrating previous theoretical developments, hypotheses regarding the indirect effects of job crafting behaviours on change in perceived NS fit and DA fit can be formulated. First, lower DA fit perceptions may trigger approach crafting behaviours, which could then affect change in both perceived DA fit and NS fit positively. For example, fearing resource loss due to a lack of DA fit may trigger feedback seeking behaviours allowing for developing skills and improving DA fit. In this process, perceived NS fit could also improve because the feedback provided by co-workers may strengthen perceived social support, in turn resulting in an increase in perceived social supplies. Perceived NS fit could also increase because approach crafting behaviours resulting from a lack of DA fit could in turn improve DA fit, and result in increased in job performance and job rewards. In this regard, the perspective that DA fit may be instrumental to increasing NS fit has been apparent in the theory of PE fit and job stress (e.g., Harrison, 1978), the theory of work adjustment (e.g., Dawis, 2005) and the theory of self-regulation applied to PE fit (Johnson, Taing, et al., 2013). The employment

relationship model has also approached DA fit as facilitating NS fit (Yu, 2016). Hence, if approach crafting behaviours result in an increase in DA fit, it is theoretically reasonable to think that these behaviours may also result in an increase in NS fit.

Similarly, avoidance crafting behaviours resulting from lower DA fit perceptions (e.g., avoiding working on a project) may affect negatively both change in perceived DA fit NS fit. Indeed, the accumulation of job demands, the potential exhaustion and lack of performance resulting from this accumulation, as well as the potential co-worker conflicts stemming from task avoidance may all negatively affect change in perceived NS fit. Indeed, a decrease in job performance could be associated with a decrease in job rewards and thus perceived NS fit, consistent with the notion that DA fit may foster NS fit (e.g., Harrison, 1978). Likewise, conflicts with co-workers may potentially result in a decrease in social supplies and therefore a decrease in perceived NS fit.

In addition, employees benefitting from NS fit may, for example, leverage their relational supplies in order to be given opportunities to work on more interesting tasks. When successful, this strategy could positively affect change in perceived NS fit (e.g., perceived increase in supplies filling a need for social interaction/support and a need for growth). Employees could also leverage their structural job supplies to acquire more relational supplies (e.g., using power and autonomy to work with more pleasant colleagues). In leveraging supplies associated with perceived NS fit, employees may also increase DA fit. For instance, supplies such as autonomy, task variety or positive relationships at work may facilitate working differently and improving DA fit.

Hypothesis 5: Controlling for initial perceived DA fit, initial perceived NS fit indirectly affects change in both perceived NS fit and DA fit through approach crafting behaviours.

Hypothesis 6: Controlling for initial perceived NS fit, initial perceived DA fit indirectly affects change in both perceived DA fit and NS fit through approach crafting (6a) and avoidance crafting (6b).

Finally, taking into account Hypothesis 3 on the moderating role of perceived NS fit in the relationship between perceived DA fit and job crafting behaviours, a final hypothesis on indirect effects is stated:

Hypothesis 7: Controlling for initial perceived NS fit, initial perceived DA fit indirectly affects change in perceived DA fit and NS fit through approach crafting behaviours (7a) and avoidance crafting behaviours (7b), and this relationship becomes stronger as initial perceived NS fit increases.

4.5 Conclusion

COR suggests that people act proactively in order to mitigate resource loss. Furthermore, they are motivated to grow their resource pool in the absence of a threat of resource loss. Associating a threat of resource loss to lower DA fit perceptions, it was hypothesized that employees should engage in both approach and avoidance crafting behaviours in order to mitigate resource loss (e.g. autonomy or job loss). Moreover, it was theorised that perceived NS fit indicated a positive resource situation, which may facilitate further resource acquisition through approach crafting behaviours. It was also theorised that perceived NS fit and DA fit may interact in predicting job crafting behaviours. Providing that both approach and avoidance crafting behaviours were hypothesised to affect change in PJ fit perceptions (positively for the former and negatively for the latter), indirect effect hypotheses were stated such that PJ fit perceptions were hypothesised to change through job crafting behaviours. Overall, the theoretical developments of the present research fill important gaps in the literature (see Section 3.4) and challenge the perspective that job crafting behaviours originate from a lack of PJ fit. Furthermore, the argument that job crafting behaviours could also result in

negative impacts for employees was put forward. This research, therefore, offers new theoretical perspectives on the intertwined nature of change in PJ fit perceptions and job crafting behaviours.

Chapter Five

Research Methodology

5.1 Introduction

This chapter gives details about the methodology that was used in the present research. It starts by introducing the design of the study and by giving details about the prospective study sample. Then, the selected measures for the present research are presented and sample size planning is discussed. Finally, the data collection procedure is presented and sample characteristics are reported.

5.2 Research Design

The present research aimed to test a set of hypotheses which were of quantitative nature. As such, it was adequate to conduct a quantitative survey study (Bryman, 2012; Coolican, 2014). As hypotheses focused on *change* in PJ fit perceptions, the present research was consistent with measuring these perceptions at two different occasions (T1 and T2). As for job crafting behaviours, hypotheses to be tested did not involve the measure of *change* in these behaviours. Rather, they centred around whether job crafting behaviours were triggered by PJ fit perceptions. Hence, the present research was compatible with measuring them once at T2 with participants indicating the extent to which they had engaged in these behaviours between T1 and T2. This approach to measuring job crafting behaviours has been used in a few two-wave studies exploring how job crafting behaviours may lead to change in other variables (e.g., Tims et al., 2013, 2015b). In these studies, job crafting behaviours were measured at T2 and participants were asked how often they had engaged in these behaviours since T1. In summary, the present research entailed a two-wave study with perceived NS fit and DA fit being assessed at T1 and T2 and approach and avoidance crafting behaviours assessed at T2.

When a multiple-wave study is considered, choosing the appropriate time lag is critical (Taris & Kompier, 2014; Zapf et al., 1996). On the one hand, the use of too short

a time lag may lead to the conclusion of an absence of effect because the predictor variable might have not had sufficient time to affect the outcome variable (Taris & Kompier, 2014; Zapf et al., 1996). On the other hand, the use of too long a time lag may also lead to concluding that no effect exists because the effect of the predictor variable on the outcome variable might have already disappeared (Taris & Kompier, 2014).

Considering the importance of choosing an adequate time lag, a three-month lag was retained for the present study, with evidence from the literature to support such a decision. Indeed, studies indicate that this time lag might be appropriate to observe a change in both perceived NS fit (Lu et al., 2014) and DA fit (Bayl-Smith & Griffin, 2018; Lu et al., 2014). Importantly, these studies were conducted without any research intervention, and outside the context of organisational socialisation. Moreover, perceived person-role fit, a type of fit being closely related to PJ fit (encompassing both NS fit and DA fit), was evidenced to change over a six-week period (DeRue & Morgeson, 2007). Additionally, empirical evidence suggests that two months may be enough to see a change in both job demands and resources (Tims et al., 2013), which might be sufficient to appreciate a change in both perceived DA fit and NS fit. Finally, the fact that people may craft their jobs on a daily basis (Petrou et al., 2012) calls for studies using various time lags. From a practical viewpoint, the longer the lag, the most likely it is that people may quit their organisation. Providing that change in PJ fit perceptions was examined, in the present research, for people remaining in their organisation, the use of a three-month lag was also practically preferable over the use of a longer time lag. Overall, using a time lag of three months between T1 and T2 satisfied theoretical as well as practical considerations.

5.3 Sample Choice

Surveying a sample of employees working in a variety of workplace settings was desirable for the present research because results obtained from heterogeneous groups of

workers may facilitate the generalisability of findings (Badger Darrow & Behrend, 2017). Furthermore, drawing data from a variety of organisations and industries may also allow for obtaining increased data variance (Yu, 2016). Importantly, the present research did not build on any organisation-level or team-level variable, which made collecting responses from a heterogeneous group of workers relevant. In addition, it was desirable to avoid conducting the present research in a specific organisational context (e.g., organisational socialisation or organisational change), as research exploring the development of PE fit perceptions in a “normal” context is scarce (De Cooman et al., 2019). Finally, heterogeneous groups are typically used in studies focusing on PJ fit perceptions (e.g., Badger Darrow & Behrend, 2017; Cable & DeRue, 2002; Diefendorff et al., 2016; Guay, 2013; Harold et al., 2016; Lahlouh et al., 2019).

MTurk (Amazon Mechanical Turk) provided the opportunity to recruit such a sample. MTurk is an online platform where people, who may be employed in organisations, are given the possibly to complete human intelligence tasks (HIT), such as filling in a survey, in exchange of a monetary compensation. MTurk has become increasingly popular in research (Cheung et al., 2017; Keith et al., 2017) and many recent organisational behaviour studies have availed of this platform (e.g., Badger Darrow & Behrend, 2017; Duffy et al., 2019; Kuykendall et al., 2020). Interestingly, MTurk has been shown to provide high quality responses (Hauser & Schwarz, 2016). It has also been argued to be as suitable as any other types of sample for conducting research (Landers & Behrend, 2015). In fact, it has been used in a few PE fit studies published in high-impact journals, such as the *Journal of Applied Psychology* and the *Journal of Vocational Behavior* (e.g., Badger Darrow & Behrend, 2017; Brady et al., 2019; Harold et al., 2016).

MTurk was also chosen for the present research because of its suitability for conducting longitudinal studies (Stritch et al., 2017). Furthermore, the characteristics of longitudinal studies that have been conducted on this platform indicate that it may offer

a decent participant retention rate over time. For instance, Feldman et al. (2018), who conducted a two-wave six-month lagged study on MTurk, obtained a participant retention rate of 66%, compensating participants \$US 1.00 at T1 and \$US 2.00 at T2. Using a two-wave thirteen-month lagged study, Daly and Natarajan (2015) had a participant retention rate of 47%, and they paid their participants \$US 0.10 per predicted minute for survey completion. Although no participant retention rate was communicated by Santuzzi and Barber (2018) for their three-wave one-month lagged study, it may be reasoned from their article that they obtained a participant retention rate of at least 65% over the total duration of their study (i.e., three months). As the present study uses a two-wave three-month lag study, it was expected that a participant retention rate greater than 60% would be found.

Importantly, it was preferable to recruit participants from a single country, as research suggests that culture might affect the impact of various fit foci on individual outcomes (Oh et al., 2014). For instance, PO fit perceptions were shown to be more strongly related to job satisfaction in North America than in East Asia samples (Oh et al., 2014). Relatedly, although there exists no meta-analysis exploring the impact of perceived NS fit and DA fit on individual outcomes in several cultures, differential effects may not be excluded. In addition, different labour laws and legal systems across countries could possibly affect the impact of perceived DA fit on job crafting behaviours. For instance, it could be thought that employees working in the US under the “fire at will” doctrine (Connolly, 2010) might be more stressed by a lack of DA fit and the potential loss of resources (job and benefits loss), than employees working in France who might be more protected in terms of employment (e.g., permanent contract) (Levionnois, 2015).

Hence, workers from a single country, the US, were invited to participate in the study. This decision was made because obtaining large samples of US workers (i.e., > 1,000) was achievable (e.g., Harold et al., 2016) and it could thus fit any size of sample that would be determined adequate for the present research. Additionally, using a US

sample may also facilitate inter-study comparability in future research (e.g., comparing inter-study correlations between perceived NS fit and DA fit).

5.4 Selection of Measures and Pre-Testing of Survey Tools

The use of self-report questionnaires at T1 and T2 was considered an appropriate method of data collection because PJ fit perceptions are self-evaluations of a situation. Therefore, the first step towards collecting data from MTurk was to select adequate self-report measures. This selection of measures was necessary to build a draft survey questionnaire that could be tested and potentially improved prior to being used for data collection. Selecting measures was also important for determining the number of participants to invite for the present study (see Section 5.5).

5.4.1 Selection of Measures

Perceived NS fit. This type of fit was measured at both T1 and T2 with the three-item scale developed by Cable and DeRue (2002). An example item is “The attributes that I look for in a job are fulfilled very well by my present job”. As done in other studies (e.g., Hernandez & Guarana, 2018; Lahlouh et al., 2019; Tims et al., 2016), respondents indicated their level of agreement on a five-point Likert scale, ranging from *strongly disagree* to *strongly agree*. Importantly, this measure was chosen because it allows for an overall assessment of NS fit, considering its underlying need fulfilment process (see the item example). In addition, this measure is very often used in perceived PE fit research (as of 30th April, 2020, Scopus indicated that the article featuring this scale had been cited 738 times).

Perceived DA fit. This type of fit was measured at both T1 and T2 with a four-item scale adapted from Resick et al. (2007), substituting the word “internship” with “job”. The scale used by Resick et al. (2007) built on two scales developed by Cable and Judge (1996) and Saks and Ashforth (1997). An example item is “I possess the skills and abilities to perform this job”. Respondents indicated their level of agreement on a five-

point Likert scale, ranging from *strongly disagree* to *strongly agree*, consistent with Resick et al.'s (2007), as well as with the measure used for perceived NS fit. This measure of perceived DA fit was chosen because it reflects an overall assessment of DA fit, considering its underlying need fulfilment process (see item example). While the perceived DA fit scale developed by Cable and DeRue (2002) could have also been used, the present scale was preferred over Cable and DeRue's because its wording could be seen as more explicitly relating to the fulfilment of job requirements. It was indeed important to measure perceived NS fit and DA fit consistently with regard to their underlying need fulfilment process. In addition, using a scale different from the one developed by Cable and DeRue also contributes to making the scale used by Resick et al. (2007) more visible.

Job crafting behaviours. An adaptation of the scale used by Petrou et al. (2012) was used to measure job crafting behaviours at T2. That is, the tense used in the original scale was changed to present perfect and items were preceded by the words "Over the past three months". The scale used by Petrou et al. (2012) captures both approach and avoidance crafting behaviours. Approach crafting behaviours are captured by the subscales referring to seeking resources and seeking challenges (Zhang & Parker, 2019). As done in other studies (e.g., Demerouti et al., 2017; Petrou et al., 2015; Petrou & Demerouti, 2015), two seeking-resources items with factor loadings below 0.40 in the original study conducted by Petrou et al. (2012) were excluded from the scale. As a result, seeking resources was measured with four items (e.g., "Over the past three months, I have asked colleagues for advice") and seeking challenges with three items (e.g., "Over the past three months, I have asked for more responsibilities"). Avoidance crafting behaviours were captured by the four-item reducing demands subscale (Zhang & Parker, 2019). An example item is "Over the past three months, I have made sure that my work is mentally less intense". Participants indicated how often they engaged in job crafting

behaviours on a five-point scale ranging from *never* to *very often*. These behaviours were measured at T2, that is three months after T1. The present scale was used over other scales for its shortness and its popularity in the literature (see Section 3.3.2)

Although it was made explicit that job crafting behaviours were measured over a three-month period, that is in relation to a specific situation (timeframe), proactive personality was nonetheless measured in order to control for any potential proactivity trait that could be undesirably captured by the job crafting behaviours scale used in the present research. As job autonomy, alongside proactive personality, was hypothesised to be a key variable influencing job crafting behaviours (Tims & Bakker, 2010), it was also measured. In addition, both proactive personality and job autonomy could potentially affect PJ fit perceptions. For instance, proactive personality might enhance perceived NS fit and DA fit because proactive individuals tend to be able to change the status quo and obtain favourable work situations (Li et al., 2010). Likewise, autonomy may potentially positively affect perceived NS fit because it is a basic human need (Deci & Ryan, 2000). From an empirical standpoint, studies suggest that these two variables may indeed affect PJ fit perceptions (Cai et al., 2018; Rigotti et al., 2014).

Proactive personality. The 10 highest loadings of the scale developed by Bateman and Crant (1993) were used at T1 to measure proactive personality (see Major et al., 2006; Seibert et al., 1999). In order to minimize the number of items used in the analysis, five parcels were created by averaging the scores of five pairs of items. These pairs were defined using item-scale correlations, such that the item with the highest scale correlation would be associated with the item having the lowest scale correlation. Likewise, the item with the second highest scale correlation would be associated with the item having the second lowest scale correlation, and so on, as suggested by Little (2013). An example item is “I am constantly on the lookout for new ways to improve my life”.

Respondents indicated their level of agreement on a five-point Likert scale, ranging from *strongly disagree* to *strongly agree*.

Job autonomy. This variable was measured at T1 with a three-item scale developed by Idaszak and Drasgow (1987). An example item is “The job gives me almost complete responsibility for deciding how and when the work is done”. Respondents indicated their level of agreement on a five-point Likert scale, ranging from *strongly disagree* to *strongly agree*.

Other control variables. In order to analyse sample characteristics, variables such as age, gender, and job tenure were measured with single items. Although these variables were not hypothesised to affect the study results, preliminary analyses controlling for these variables were considered. Indeed, these potential control variables have been shown to correlate with PJ fit perceptions and job crafting behaviours (Boon & Biron, 2016; Cai et al., 2018; Rigotti et al., 2014; Rudolph et al., 2017).

5.4.2 *Pre-testing of Survey Tools*

At this stage, it is important to note that the self-report questionnaires used for the present research (T1 and T2) actually contained more measures than those presented in the last section. Relatedly, the survey from which this study builds featured a third wave of data collection. The fact that I included more measures and an additional data collection wave in the survey is explained by an evolution in the research question that I initially aimed to address. Originally, my research focused on the effects of PE fit perceptions on well-being (employee engagement and burnout in particular), accounting for the potential role of job crafting in this relationship. However, my research focus changed over data collection for two reasons. First, recent research calls emphasized the necessity to better understand the development of PE fit perceptions over time (e.g., De Cooman et al., 2019; van Vianen, 2018). Furthermore, scholars identified a scarcity of research pertaining to the relationship between the development of PJ fit perceptions and proactive behaviours

(e.g., Bayl-Smith & Griffin, 2018; Sylva et al., 2019). In addition, Zhang and Parker (2019, p.15) asserted that the effect of PJ fit on both approach and avoidance crafting had “not been investigated”. As these research calls and gaps resonated with my research interests and could be answered with the data obtained from the survey, I chose to address them, seeing in the present research important contributions to be made. This information was shared for the sake of transparency in research, and for explaining why a third wave of data collection is mentioned in the plain language statement (Appendix B) that was attached to the questionnaire used for data collection.

The draft questionnaire consisted of several sections, each centred around a theme (e.g., “your work environment”, “your behaviour at work”, etc.). In each section/theme, items from different scales were mixed and presented in a random order. For instance, items used to assess job autonomy were mixed with items used to assess PJ fit perceptions, as well as with items from other scales not included in the present study. Indeed, this strategy may allow for limiting common method bias (Podsakoff et al., 2003). More precisely, when scales are presented one by one, this may push people to provide the same answers (e.g., agree) to all the items of the first scale, then the same answers to all items of the second scale (e.g., disagree), and so on. In other words, the grouping of items from a single scale may increase response consistency (Podsakoff et al., 2003) and undesirable block responses (e.g., Cable & DeRue, 2002; Diefendorff et al., 2016). Common method bias was also limited by the research design itself because predictors and outcome variables were not all measured on the same occasion (Podsakoff et al., 2012). Additionally, participants were informed that their responses would remain confidential, which may have limited the effect of social desirability on responses.

After all measures were chosen, and survey instructions and research details were formalised, the draft survey questionnaire was put online on Qualtrics. Then, it was tested by a dozen participants to ensure that its content was clearly understandable and its format

adequate. People who participated in testing the survey were researchers in DCU Business School and professionals working in other organisations. This test resulted in minor tweaks (e.g., relabelling of a section, shortening of survey instructions). Sample size considerations will now be discussed in light of the present research model (see Figure 4.1).

5.5 Statistical Power and Sample Size Planning

Sample size planning is key to quantitative studies as it affects statistical power (Little, 2013). Statistical power is the probability of concluding that an effect exists (i.e., is significant) when this effect actually exists (Wolf et al., 2013). When power increases, the probability of making a type II error, that is concluding that an effect does not exist when there is actually an effect, decreases (Cohen, 1988). Power is determined as a function of sample size, the statistical significance that is chosen for the study, and the effect size that needs to be detected (Cohen, 1988).

5.5.1 General Notions in the SEM Framework

In the context of SEM, the question of power becomes more complex as it can be approached in terms of both (a) power to detect a specific parameter as being different from 0, and (b) power to detect whether a model, which fits the data well, may indeed be retained over an alternative model that fits the data less appropriately (Little, 2013). Power analysis and sample size planning are not straight forward in the SEM framework because they require making a reasoned guess about a variety of expected parameters. For instance, determining what sample size is needed to detect a correlation of .3 with a power of .80 between two constructs requires knowledge of a variety of parameters such as factor loadings, indicator error variances, the amount of missing data, whether data is normally distributed, etc. (Jorgensen et al., 2018; Kline, 2016; Muthén & Muthén, 2002). Consequently, sample size determination and power are intrinsically related to model specification.

The use of iterative functions (e.g., calculations processed for each value of i , as i increases by 1), allows for running Monte Carlo studies that aid in determining sample size (Muthén & Muthén, 2002). More precisely, after all parameters are specified in a model, one can replicate a power analysis for this model, for several N , until an acceptable power is found for a specific target parameter. Then, the associated N can be retained as a desirable sample size to reach in data collection. It should also be noted that sample size requirement may also be thought in terms of parameter accuracy and the ability for the model to converge (e.g., Beaujean, 2014b; Little, 2013; Wolf et al., 2013). Models with larger samples, greater factor loadings and more indicators per latent variable are more likely to converge (i.e., find a solution) properly (Wolf et al., 2013).

Monte Carlo studies are seen as a better sample size estimation strategy than rules of thumb that have been proposed, such as 5 observations per parameter estimate, or 10 participants for each indicator, which are heuristics that “should not be perpetuated any further” (Little, 2013, p. 120) and which “may lead to grossly over-or underestimated sample size requirements” (Wolf et al., 2013, p. 914). An acceptable minimum sample size for most SEM studies, relying on rather simple models, may be $N = 200$ (Barrett, 2007; Hoyle & Gottfredson, 2015), while complex models might require a greater minimum sample size (Kline, 2016). However, the recommendation of $N = 200$ might always be counterargued depending on model specification, as models having a great number of degrees of freedom, or a great number of indicators per factor, may be satisfactorily estimated with a small sample size and may benefit from adequate statistical power (Little, 2013; Wolf et al., 2013). For instance, a sample size of 120 may be enough to satisfactorily run an SEM when this SEM has a large number of degrees of freedom (Little, 2013). While some may argue that a larger N is better than a smaller N , getting too many participants may result in detecting trivial effects as significant, which is not desirable either (Kline, 2016).

When Monte Carlo studies are inadequate due to a lack of information aiding model specification (e.g., unknown factor loadings and correlations), or a lack of software running such studies, a middle-ground strategy might be to determine sample size based on a model's general detail (e.g., number of factors included in the model). More precisely, Westland (2010, 2012) provided a formula suggesting the minimum sample size required for estimating an SEM with sufficient power, based on (a) the number of indicators present in the model, (b) the number of factors present in the model, (c) the level of power desired, (d) the level of significance desired and, (e) the anticipated minimum effect size to be detected. While more research on this sample size estimation strategy is needed, it nonetheless allows for obtaining a rough lower-bound sample size target to be reached.

5.5.2 *Sample Size Required for the Present Research*

Although specifying an a priori model in order to run a Monte Carlo analysis was challenging for the present research, it was nonetheless done in order to get an understanding of a lower-bound sample size requirement. Importantly, the Monte Carlo study that was run pertained to an anticipated CFA including all the measures used for the present research, with the exception of single-indicator measures which were believed not to be necessarily included in the final model (e.g., gender or age). The Monte Carlo study pertained to an anticipated CFA and not to an anticipated SEM because the specification of anticipated SEM parameters for the present research was hardly realistic. Indeed, as several effects of interest (e.g. effect of perceived DA fit on avoidance crafting behaviours) had not been estimated elsewhere, it would have been necessary to know the correlations between the constructs to accurately “guess” the path from one construct to another. However, correlations could not be specified with the greatest accuracy (as it will be explained shortly after), which may have resulted in substantially distorted SEM parameter estimates.

Running a Monte Carlo study on a CFA presented at least three valuable features: (a) it allowed for determining a potential minimum sample size N for having significant correlations between variables, (b) it allowed for estimating whether the specified CFA had sufficient power at N to yield different fit indices than those produced by a misspecified CFA, and (c) the minimum N that was obtained from the Monte Carlo analysis could be compared with the N obtained with Westland's (2010,2012) formula to determine a minimum target sample size for the study. Details about how inter-construct correlations were determined are given in Appendix D (Table D.1). The correlation matrix resulting from Table D.1 is presented in Table D.2.

It is important to note that some of the model parameters could not be specified accurately due the scarcity of research on change in PJ fit perceptions and job crafting behaviours. First, only one study so far has measured latent perceived NS fit and DA fit twice using the present research time lag (Lu et al., 2014). Although Lu et al.'s study (2014) provided construct correlations, this information was taken with caution because: (a) their sample consisted of people working in China and it might be reasoned that PJ fit perceptions may correlate with each other differently across cultures and within and across occasions (Oh et al., 2014), (b) they gathered data from a single company, which may have affected PJ fit perceptions variance, (c) it is unclear whether their correlations were based on a model specifying measurement invariance, (d) their measures of perceived DA fit and approach crafting behaviours differed from the one adopted in the present research. Despite these potential limitations, their information was still valuable for informing a Monte Carlo analysis. Second, as highlighted in the introduction chapter, prior studies have neglected evaluating the relationships between PJ fit perceptions and avoidance crafting. Thus, only a non-informed estimation could be made on the nature of the relationship between avoidance crafting behaviours and PJ fit perceptions. Third, no research including simultaneously seeking resources, seeking challenges, reducing

demands, and PJ fit perceptions was found, which rendered specifying correlations between these constructs difficult. Therefore, an informed guess or “reasoned guess” (Little, 2013, p. 130) had to be made on correlations (Table D.1) and a variety of other parameters. More precisely, factor loadings and indicator variances had to be specified. Details about these specifications are provided in Appendix D.

The Monte Carlo analysis was performed such that for each N (from $N = 50$ to $N = 1000$ with N increasing by 50) 500 datasets were produced (yielding a total of 10,000 generated datasets). In order to account for a potential moderate skewness in data, a skewness of 1.5 and a kurtosis of 3 were specified (Li, 2016). Relatedly, the estimator chosen for this analysis was robust maximum likelihood, which is advised for running an SEM based on non-normally distributed data (Kline, 2016; Rhemtulla et al., 2012).

This analysis was carried out with the R package *Simsem* (Jorgensen et al., 2018). While a sample size as small as $N = 50$ was sufficient for finding a significant relationship ($\alpha = .05$) between perceived NS fit and DA fit at T1 (correlation set to .5) with a power of .80, a minimum sample size of $N = 356$ was required in the same conditions of power and significance to detect a significant relationship between seeking challenges and perceived DA fit at T2 (correlation set to 0.2). For correlations for which absolute values were set to .1, sample sizes larger than 1,000 were required to have sufficient power (.80) to detect an effect at $\alpha = .05$. Therefore, providing that $r = .2$ seemed to be a reasonable minimum effect size to be detected (at $\alpha = .05$) with a power of .80, it was reasoned that a round number of $N = 360$ could be good sample size target to reach. Additionally, it may be observed from Figure D.1 (Appendix D) that fit indices became satisfactory from $N = 250$ (i.e., CFI and TLI $> .90$; RMSEA $< .05$; and SRMR $< .06$) as per fit indices combination rules suggested by Hu and Bentler (1999).

To further investigate the legitimacy of this sample size, two additional analyses were carried out. For $N = 360$, using all previously specified parameters (i.e., correlations,

factor loadings, indicator variances), 10,000 datasets were required to be generated as suggested by Muthén and Muthén (2002). This data generation was performed twice, using two different random seeds (127 and 198). For each of the two datasets, successful replications (convergence) were at 9,240 and 9,174. Monte Carlo simulation criteria were met (Beaujean, 2014a; Muthén & Muthén, 2002). More precisely, power exceeded .80 for all correlations specified to be superior to .2. Furthermore, for all parameters, coverage was superior to .91 (“proportion of the p samples that the $[1 - \alpha]\%$ confidence interval contains the true parameter value”; Beaujean, 2014a, pp. 133–134). Additionally, parameter estimate biases and standard error biases were below .10 (except for the two correlations set to 0, for which parameter bias was not calculated).

Whether the model was distinguishable from a mis-specified model at $N = 360$ was done graphically, as per Figure D.2. In the mis-specified model, an item of reducing demands was specified to load onto seeking resources and not onto its original factor. This model converged 9,230 times for 10,000 requested replications. As it may be seen from Figure D.2 (Appendix D), the difference in fit indices between the original model and the mis-specified model was substantial. This brought further support for the relevance of targeting $N = 360$, sample size at which there was enough power to notice a difference in fit indices between the correctly specified and the mis-specified CFA.

This sample size was also supported by the formula provided by Westland (2010, 2012), which was adapted as an online software by Soper (2018). Specifying a power of .80, a significance level of .05, nine latent variables, and 33 indicators, a minimum sample size of $N = 374$ was required to detect an effect size of .22. Consequently, this value was close to the one obtained in the Monte Carlo analysis. This result brought additional support for the adequacy of reaching $N = 360$. Importantly, the results obtained from the Monte Carlo study may be considered more precise due to the specification of all

parameters at stake (i.e., factor loadings, indicator variances and correlations) and the specification of distributional characteristics (i.e., indicator skewness and kurtosis).

Departing from the sample size planning analysis, which suggested that obtaining 360 participants across the two waves would be a good base for the present research, it was reasoned that an initial minimum sample size of $N = 600$ ($360 \times 100 / 60$) would be appropriate because a participant retention rate of 60% was expected (see Section 5.3). Given that $N = 600$ concerned the *minimum* sample size required for workers who gave exploitable responses, it was sensible to increase that sample size to account for potentially non-exploitable questionnaires. The final target sample size was thus consistent with $N = 800$, which was the sample size originally chosen when my research also focused on employee well-being. In case of a high participant retention rate, this N would also benefit the research with an increased statistical power.

5.6 Data Collection Procedure

After ethical approval was obtained from Dublin City University Research Ethics Committee (Appendix A), 800 US MTurk participants who were employed in organisations and at least 18 years old were invited via Turkprime to participate in the study at T1, early May 2018. Turkprime was chosen to collect data from MTurk participants because it was argued to facilitate the management of longitudinal studies that use MTurk participants (e.g., ability to send an invitation email to all the workers who filled in the survey at the previous occasion, at once, instead of emailing these participants one by one) (Keith et al., 2017). Prior to embarking on the survey, participants were made aware of the research context and purpose, as per the PLS attached to the survey (Appendix B). The questionnaire instructions and measures pertaining to the present study and which were used for data collection are presented in Appendix C.

Participants were paid \$US 0.80 for completing the first survey, and were made aware they would be paid \$US 1.00 three months later if they completed the second

survey (T2). Although people on MTurk have been suggested to be intrinsically motivated when they participate in research surveys (e.g., Buhrmester et al., 2011), it was reasoned that increasing payment for survey completion from T1 to T2 could diminish attrition rate.

Several steps were taken to ensure that responses collected from participants were of high quality. First, the questionnaire design itself aimed to limit method bias (see Section 5.4.2). Second, only participants (a) who had a HIT approval rate of at least 95% (i.e., reputation of the participant) and (b) who had completed at least 100 HITs were authorised to participate in the survey at T1, similar to the procedure of other studies (e.g., Badger Darrow & Behrend, 2017; Hauser & Schwarz, 2016). Second, two attention check items were used to identify potentially poor responses, at both T1 and T2 (e.g., “if you are not a robot, please choose ‘Never’”). If participants failed to answer these two items, either at T1 or T2, they were excluded from the final sample. Similarly, participants were asked for their age and gender at both T1 and T2 to identify inconsistent responses.

Responses were recorded through Qualtrics and information from MTurk (i.e., participant ID) were sent to Qualtrics to allow matching questionnaires at T1 and T2. In order to verify that Qualtrics could receive information from MTurk, but also to verify that no issue was present with the online questionnaire, eight participants from MTurk were first invited to fill in the survey at T1. Providing that no issue was detected, and that data could be gathered appropriately, the T1 survey was open until 800 participants were paid \$US 0.80 for successfully completing the survey.

Initially, 905 participants went onto the Qualtrics survey page. Disqualified participants ($n = 105$) were those who did not satisfactorily complete the survey to the end and could not be paid. For instance, 40 participants did not provide any information past the PLS page and 27 were disqualified at the second page of the survey as they were not working in organisations (i.e., they were not eligible and could not pursue the survey).

Importantly, completing the survey to the end and then submitting the HIT was necessary for participants to get their ID recorded onto Turkprime, be paid, and be invited to complete the second questionnaire at T2.

Amongst the 800 participants who successfully completed the survey at T1, 15 were excluded from the sample for trying to take the survey several times or for failing to answer the two attention-check items correctly. At T2, 581 participants successfully completed the survey. A few other participants had started filling in the questionnaire ($n = 26$) but did not reach survey completion. Therefore, their responses did not qualify for the present research. Only participants who submitted their HIT and were paid for survey completion were included in the study. Indeed, the non-submission of the HIT associated with the survey could be interpreted as being equivalent to not returning a paper-based questionnaire. After excluding participants with inconsistent responses, and those who failed to answer the two attention-check items at T2, or tried to take the survey several times, 507 participants remained. Amongst these workers, 15 were excluded from the sample because they had changed organisations. In the end, the final sample consisted of 492 participants.

5.7 Sample Characteristics

The mean age of the 492 participants was 37.5 ($SD = 10.7$) and these workers had been working in their current position for 61.3 months on average ($SD = 58.6$). Most of the participants were employed full time ($n = 435$; 88.4%), with no managerial responsibilities ($n = 270$; 54.9%) and were females ($n = 278$; 56.5%). The majority of participants held a degree higher than the high school certificate ($n = 450$; 91.5%) as Table 5.1 shows, and they worked in a variety of occupations (Table 5.2).

Table 5.1. Education of participants

Education	Number of participants (<i>N</i> = 492)
Some high school	1
High school diploma or the equivalent	41
Some college	87
Associate degree	63
Bachelor degree	214
Master degree	62
Professional degree	14
Doctorate degree	10

Table 5.2. Occupation of participants

Occupation	Number of participants (<i>N</i> = 491)^a
Management	56
Business and Financial Operations	64
Computer and Mathematical	39
Architecture and Engineering	12
Life, Physical, and Social Science	11
Community and Social Service	13
Legal	11
Education, Training, and Library	59
Arts, Design, Entertainment, Sports and Media	19
Healthcare Practitioners and Technical	29
Healthcare Support	23
Protective Service	6
Food Preparation and Serving	15
Building and Grounds Cleaning and Maintenance	1
Personal Care and Service	7
Sales	45
Office and Administrative Support	42
Farming, Fishing, and Forestry	3
Construction and Extraction	5
Installation, Maintenance, and Repair	5
Production	13
Transportation and Material Moving	13

Note. ^a One response was missing, hence *N* = 491 instead of *N* = 492.

Research on change in PJ fit perceptions and more broadly change in PE fit perceptions has rarely availed of sample sizes as large as the present research (*N* = 492). For instance, a two-wave time-lagged study on change in perceived NS fit and DA fit was

carried out with $N = 246$ participants (Lu et al., 2014). Another study featuring perceived NS fit and DA fit was built on a three-wave time-lagged design with $N = 114$ participants (Tims et al., 2016). More recently, Sylva et al. (2019) studied change in perceived DA fit with a two-wave time-lagged study with $N = 454$. Additionally, a three-wave time-lagged study was conducted by Kim et al. (2020), investigating change in perceived NS fit and DA fit amongst $N = 168$ participants. Therefore, the sample size obtained for the present study is satisfactory in terms of both (a) how it compares with the original target sample size ($N = 360$) and (b) existing PE fit studies on change in PJ fit perceptions ($114 < N < 454$).

5.8 Conclusion

The present research was consistent with using a quantitative study, where perceived NS fit and DA fit were measured twice, separated by a three-month lag. Job crafting behaviours were measured over this period. In order to carry out this study, participants were recruited from MTurk. The sample size analysis indicated that reaching a sample of $N = 360$ at T2 would be desirable. The final sample size consisted of 492 participants, which met the data collection objective.

Chapter Six

Analytical Strategy

6.1 Introduction

This chapter details the analytical strategy that was used for the present research. Several models and modelling techniques were used, such as residual-centred product factor scores, the effect coding method of factor scaling, second-order factor modelling, latent change scores, and nested models. I will thus introduce these models and techniques in order to provide a better understanding of how results were produced (see Chapter 7). While not of a mathematical nature, this chapter will attempt to share key aspects of the analysis that was conducted.

6.2 Model Estimation

This section gives general information about the software used and the estimator chosen to carry out the present study. Although missing data was not an issue, this aspect of data analysis is nonetheless briefly discussed, as it is key to data analysis.

6.2.1 *Software and Estimator Used*

Data was analysed using R version 3.5.2 and the Lavaan package version 0.6-3 (Rosseel, 2012). As participants were invited to provide their responses on five-point agreement and frequency scales, their responses were treated as continuous variables (Rhemtulla et al., 2012). Consistent with this approach, robust maximum likelihood (MLR) was chosen as the estimator to conduct all CFAs and SEMs. Indeed, the use of robust variants of SEM estimators is advised when data distributions derive from normality, as not using these variants might result in biased estimates and fit indices (Kline, 2016; Rhemtulla et al., 2012).

Consistent with the use of MLR, *robust variants* of fit indices were reported from Lavaan. These fit indices are the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square of Error of Approximation (RMSEA) (Brosseau-Liard et

al., 2012; Brosseau-Liard & Savalei, 2014) and the adjusted chi-square information based on Yuan and Bentler (2000). In addition to reporting these robust statistics, it is important to note that CFI and TLI values had to be re-calculated from Lavaan for models including perceived NS fit and DA fit at both T1 and T2. Indeed, in longitudinal null models, it is reasonable to expect that the variance and mean of indicators may remain stable over time (Little, 2013). However, the default null model provided by Lavaan does not account for this assumption. Therefore, the CFI and TLI, which calculations rely on the null model (Little, 2013), had to be re-calculated from Lavaan with a modified longitudinal null model.

6.2.2 Missing Data

Missing data was not an issue for the present study, presumably due to the Qualtrics pop-up reminding participants of their non-responses each time they were about to enter a new section of the survey. Indeed, workers from the final sample provided full responses for all measures of interest. Had there been random missing responses amongst completed questionnaires (e.g., no response for one or several items), these would have been handled by using the full information maximum likelihood (FIML) estimator (Bowen & Guo, 2011; Newsom, 2015). Indeed, FIML is able to “recover” missing completely at random data (MCAR) and missing at random data (MAR) from analysing patterns in the existing data. MCAR refers to responses that are missing for no particular reason and are not related to an identified cause; MAR refers to responses which missingness is related to another variable in the dataset (e.g., a question may be predominantly answered by females and avoided by males, thus gender may explain an absence of responses). When data is missing not at random (MNAR), the value of the variable for which response is sought is actually the cause of missing data (e.g., people may refuse to communicate high salary figures). In this case, MNAR analysis approaches may be used as sensitivity analyses only (Newsom, 2015). More data may also be

collected and propensity score matching may be used (Bowen & Guo, 2011). Data missingness is however not discussed in more detail, as it was not an issue for the present study.

6.3 General Details about Model Specification

As the analysis conducted in Chapter 7 builds on advanced modelling techniques, I will now give details about each of these techniques. First, I will discuss the importance of latent variable scaling, and will explain why I chose to use the *effect coding method*. Second, I will present how factor collapsing was handled using this factor scaling method. More precisely, I will give detail about the specification of nested models used for this purpose. Then, I will present how I specified the modelling of a second-order factor reflecting approach crafting behaviours. Finally, I will introduce the modelling of latent change scores, which were used for assessing change in perceived NS fit and DA fit.

6.3.1 Latent Variable Scaling

Latent factors were scaled using the effects coding method (Little, Slegers, et al., 2006). This method consist of setting an equality constraints on factor loadings to make them average to 1, and to make indicator intercepts average to 0 (Little, 2013; Little, Slegers, et al., 2006). The effect coding method presents a couple of advantages over the typically used marker variable method and the fixed variance method.

First, the marker variable method, which consists of fixing a factor loading to 1 to set the scale of the latent factor, has been argued to be arbitrary and to have many “undesirable consequences” (Little, 2013, p. 80). Indeed, this method of factor scaling may be applied to any indicator of a given factor. When an indicator is chosen to be the marker variable, the variance of the factor actually becomes the reliable part of the variance of this indicator (Little, 2013). Similarly, the mean of the factor is actually determined by the mean of the marker variable. Therefore, choosing one indicator over another may change the variance and mean of the factor, which is undesirable. In contrast,

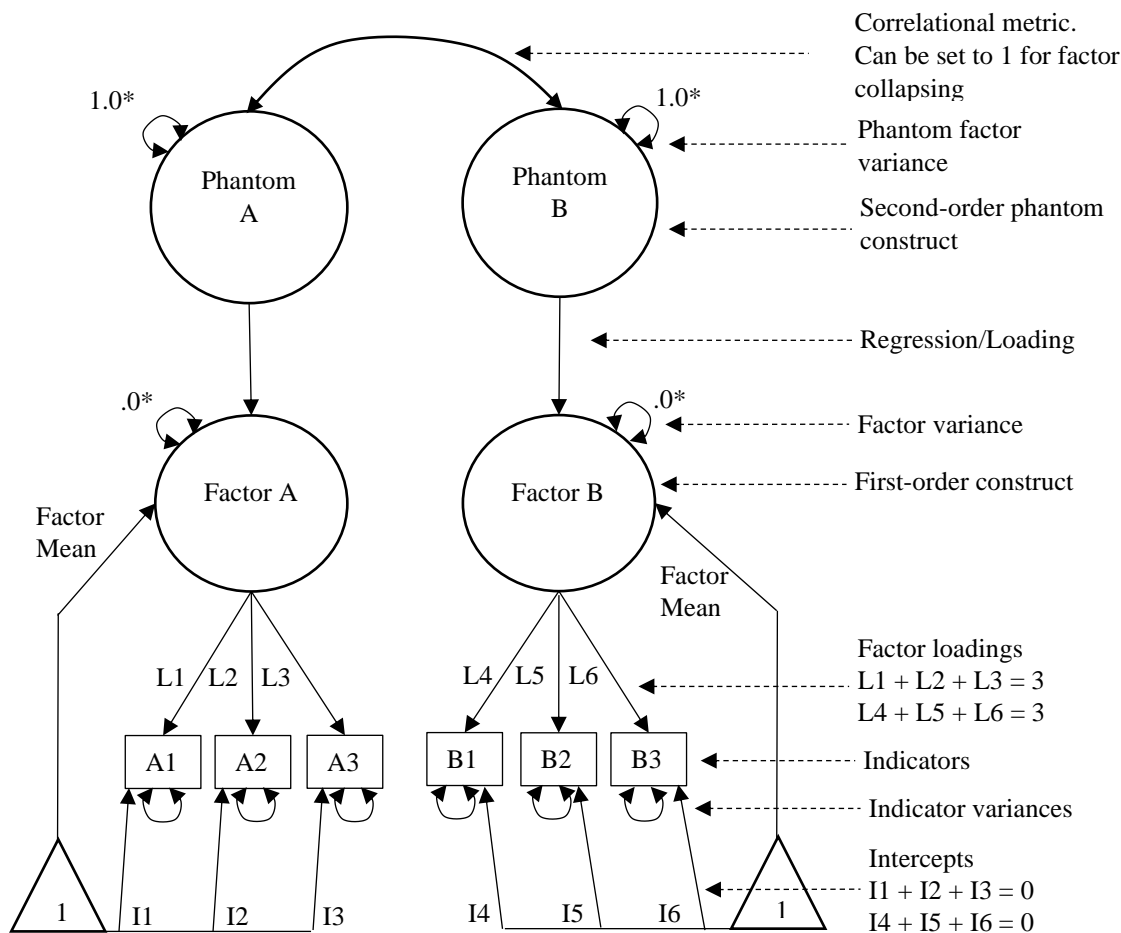
the effect coding method is less arbitrary because all indicators are taken into account in determining the factor's variance and mean (Brown, 2015; Little, 2013). As stated by Brown (2015, p. 234):

Especially in measurement invariance evaluation (i.e., multiple occasions or multiple groups), and more generally in situations where the indicators have interpretable metrics, the effects coding approach may be viewed as superior to the more commonly employed marker indicator method of latent variable scaling.

Second, the fixed variance method, which consist of fixing a factor's variance to 1 and a factor's mean to 0, may result in losing meaningful information about both the mean and variance of this factor (Newsom, 2015). However, the fixed variance method is interesting in that it allows for obtaining factor associations in a correlational metric, which may ease analysis (Little, 2013). For instance, this might be useful when nested models are compared and when correlations between factors may have to be set to a specific value. For example, a correlation between two factors may have to be set to 1 in order to check whether collapsing these two factors into a single factor would be reasonable (Brown, 2015). In this context, the fixed variance method of scaling may be convenient because parameter constraints are set on correlations and not on covariances.

Importantly, the effect coding method is not incompatible with working with correlational associations amongst constructs. Indeed, phantom constructs (defined in the next paragraph) may be used to this end, transforming covariance information into correlations (Little, 2013). In fact, the present research uses conjointly the effect coding method and phantom constructs in order to compare nested models, and to test whether several factors may reasonably be collapsed into fewer factors. Consequently, the effect coding method has advantages over both the marker variable and the fixed variance methods.

A phantom construct is a construct that ‘does not have measured indicators, and it is used to “trick” the SEM program into providing an estimate in a form and metric that it normally would not’ (Little, 2013, p. 96). In fact, phantom constructs are estimation devices that aid transforming available information into relevant metrics (e.g., variances may be transformed into standard deviations, and covariances into correlations). Transforming factor covariances into factor correlations involves a few steps (Little, 2013). First, for each factor (first-order factor), a second-order phantom factor is created. Then, a unique regression path is freely estimated from the second-order phantom factor to the first-order factor. Additionally, the variance of the first order factor is set to 0 and that of the second-order phantom factor is set to 1 (Little, 2013). As a result, the variance of the second-order phantom construct is standardised and the association amongst the phantom constructs are of correlational metrics (Little, 2013). An example of model specification including two phantom constructs based on the effect coding method is depicted in Figure 6.1.



Note. * These are fixed variance parameters. All other parameters are freely estimated, albeit equality constraints placed on factor loadings and intercepts.

Figure 6.1. Correlational associations between factors using the effect coding method and phantom constructs

6.3.2 Nested CFA Models

Nested CFA models were used to assess whether collapsing several factors into a fewer number of factors was advised. Models are nested when they are derived from the same model and when different constraints are placed on these models (Brown, 2015; Little, 2013). For instance, if a constraint was placed in the model depicted in Figure 6.1, the resulting model would be nested in the one depicted in Figure 6.1. In the model presented in Figure 6.1, testing whether collapsing Factor A and Factor B into a single factor would be reasonable would be achieved by comparing (a) model fit obtained for the model as is (freely specified correlation between the phantom constructs A and B)

and (b) model fit obtained for the same model but where the correlation between the two phantom constructs would be constrained to 1. A significant drop in model fit would indicate that collapsing the two factors into one single factor would not be reasonable (Brown, 2015).

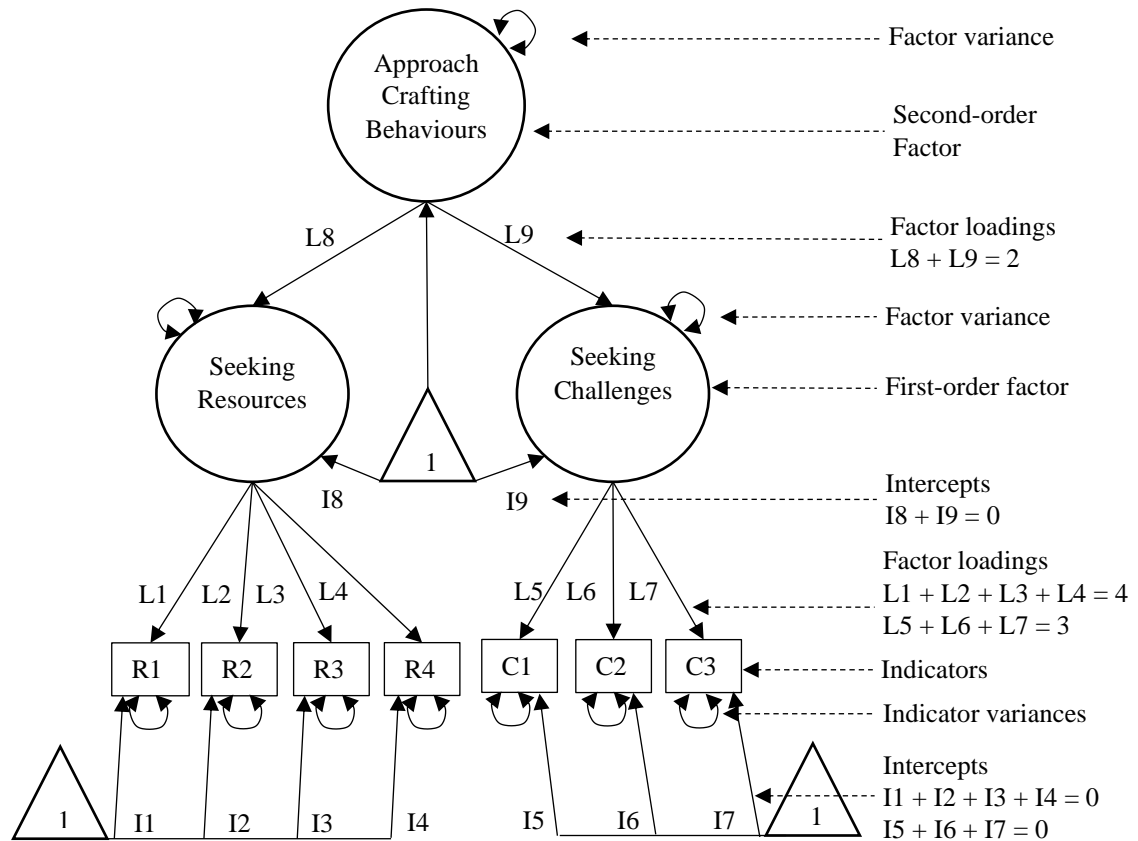
The specification strategy used in Figure 6.1 was used for all nested CFA models that pertained to evaluating the optimal number of factors to be retained (i.e., keeping the effect coding method of latent variable scaling and using phantom constructs to place constraints on construct correlations). Additionally, for more complex models than that depicted in Figure 6.1, factors were collapsed by both (a) setting the correlations of their phantom constructs to 1, and (b) placing equality constraints on other correlating phantom constructs to account for the fact that their associations with the collapsed factors would also be constrained.

For instance, in a CFA pertaining to job crafting behaviours, specifying a correlation between seeking resources and seeking challenges to 1 would imply that the correlations between (a) reducing demands and seeking resources, and (b) reducing demands and seeking challenges, would be the same. This equality parameter constraint has to be specified. Otherwise, biased fit indices are obtained. For example, I specified a CFA model (model A) where the seven items of seeking resources and challenges loaded onto a single factor and where this single factor correlated with a reducing demands factor. Then, I specified another CFA model (model B) that was not nested in model A. In model B, seeking resources and seeking challenges were collapsed into a single factor (i.e., $r = 1$) with the use of phantom constructs, and the phantom constructs of seeking resources and challenges correlated freely with the phantom construct of reducing demands. In order to get identical fit indices for models A and B, which was desirable, equality constraints on the correlations (i.e. associations at the phantom construct level) between (a) reducing demands and seeking resources and (b) reducing demands and

seeking challenges had to be placed in model B. Only then was model B identical to model A in terms of fit.

6.3.3 *Second-Order Factor Modelling*

The modelling of a second-order factor representing approach crafting behaviours (first-order factors: seeking resources and seeking challenges) was done using the effect coding method (see Figure 6.2), as done with other factors. Approach crafting behaviours had only two first-order constituents, which may have resulted in a second-order factor under-identification. However, identification was not an issue providing that the model converged, consisted of other factors and benefitted from many degrees of freedom. As Little (2013, p. 88) states: “in many applications of SEM, the lack of local identification can be made up for by borrowing information from other parts of the model”. In case of under-identification, the two loadings of the approach crafting behaviours factor would have been set to equality to gain a degree of freedom and restore local identification, akin to the resolution of under-identification for first-order factors defined by two indicators (Brown, 2015; Little, 2013).



Note. Triangles with “1” represent mean/intercept information.

Figure 6.2. Effect coding method used for second-order factor scaling

6.3.4 Latent Change Score Modelling

The specification of a latent change score (LCS) allows for investigating a change in the value/score of a variable over time and within and across individuals (McArdle, 2009). Importantly, LCS modelling allows for capturing intra-individual change, and not residual change (i.e., change assessed as residuals obtained from regressing the scores of a factor at T2 on its scores at T1) (Henk & Castro-Schilo, 2016). Thereby, using LCS modelling was highly relevant for the present research, which focuses on change in perceived NS fit and DA fit. Indeed, intra-individual change was a reasonable assumption for the present research and it was important to “connect” job crafting behaviours to such a change. Participants could reasonably experience better or worse PJ fit perceptions at T2 than at T1, without all participants experiencing the same change over time (e.g., all participants experiencing an improvement in PJ fit perceptions). These are those intra-

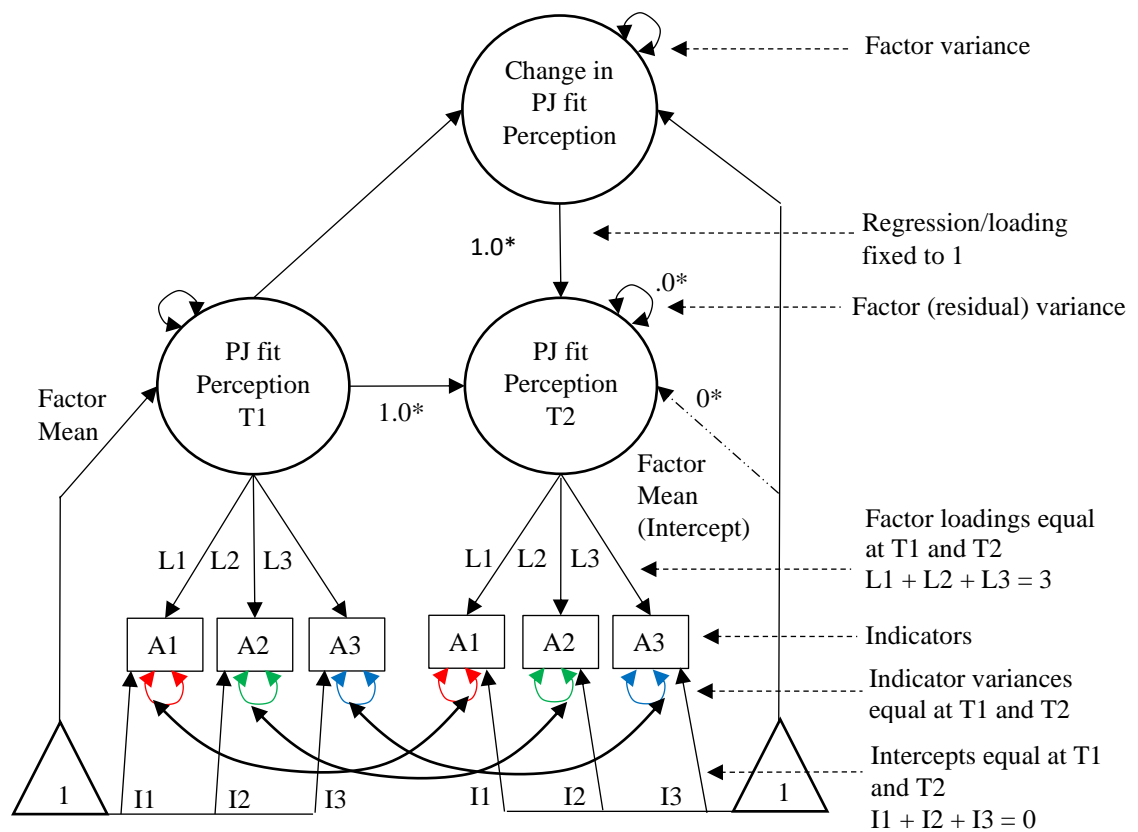
individual differences that mattered the most for the present research, justifying the LCS approach (e.g., Henk & Castro-Schilo, 2016).

In terms of model specification, akin to phantom constructs, a variable reflecting change scores (not measured per se) was created. The factor of interest at T2 was set to have a loading of 1 on that change score variable. Furthermore, the factor at T2 was set to have a (residual) variance and an intercept equal to 0 (e.g., Gawke et al., 2017; Kievit et al., 2018; Kleemeyer et al., 2016). Additionally, a regression weight of 1 was fixed from the factor of interest at T1 to this same factor at T2. These specifications allow the LCS to capture differences between factor scores at T1 and at T2 (McArdle, 2009). Indeed, as the regression between the factor at T1 and T2 was fixed to 1, the scores at T2 were actually set to be identical to the scores at T1 (Newsom, 2015). However, as these scores were likely to be different, this difference “went” to the change score variables entirely because a loading of 1 was fixed between the change score variable and the factor at T2. The relationship between the factor at T1 and the change score was specified as a freely estimated regression path (from the T1 factor to the change score), which then represented the part of change that was explained by the factor itself at T1 (Henk & Castro-Schilo, 2016; McArdle, 2009). This specification was critical for the present research as mediation effects were tested. For instance, it was tested whether perceived DA fit at T1 affected approach crafting behaviours over T1 and T2, and whether these behaviours led to a change in perceived DA fit.

Importantly, the specification of LCS necessitates, just as with other longitudinal models, that factors are measured consistently over time (otherwise, “change” would be biased) (McArdle, 2009). This evaluation of consistent longitudinal measurement, called *longitudinal factorial invariance* or *longitudinal measurement invariance* (Brown, 2015; Little, 2013), was therefore a prerequisite of LCS and was performed for both perceived NS fit and DA fit. These constructs were first tested against weak invariance, which was

about testing whether factor loadings at T1 and T2 could be considered identical for each of these two constructs/factors (Brown, 2015; Little, 2013). Second, tests of strong invariance (i.e., equal indicator intercepts at T1 and T2) and strict invariance (i.e., equal indicator residuals at T1 and T2) were performed (Brown, 2015; Little, 2013). Although reaching strict invariance may be desirable (e.g., Whittaker et al., 2014; Widaman et al., 2010), reaching strong invariance, or more exactly not rejecting the assumption of strong invariance, may also be sufficient to consider that constructs are invariant over time (Little, 2013). Importantly, error variances of identical items at T1 and T2 were freely estimated to account for their non-independence (Little, 2013; Newsom, 2015). As strict invariance held for both perceived NS fit and DA fit, the LCS was specified with this level of invariance. Figure 6.3 shows how change in each perceived NS fit and DA fit was specified.

In order to obtain correlation tables and relevant metrics pertaining to these change scores, the path from each perceived NS fit and DA fit at T1 to their respective change score variable was actually specified to be a covariance rather than a regression, akin to the two-wave latent change score model (2W-LCS; Henk & Castro-Schilo, 2016). Had this transformation of regression to covariance not been specified, the metrics of the change score would have actually been affected by the regression coefficient associated with the factor at T1. Indeed, when the relationship between the factor at T1 and the change variable is expressed as a regression, the intercept of the change score is actually affected by the factor at T1, and this intercept then does not represent the mean change of the factor between T1 and T2. However, when this relationship is expressed as a covariance, the intercept of the change score becomes equal to the mean change.



Note. * These are fixed variance parameters. All other parameters are freely estimated, albeit equality constraints placed on factor loadings, intercepts, and indicator residuals.

Figure 6.3. LCS specified with the effect coding method and the constraint of longitudinal strict invariance.

6.4 Steps in Data Analysis

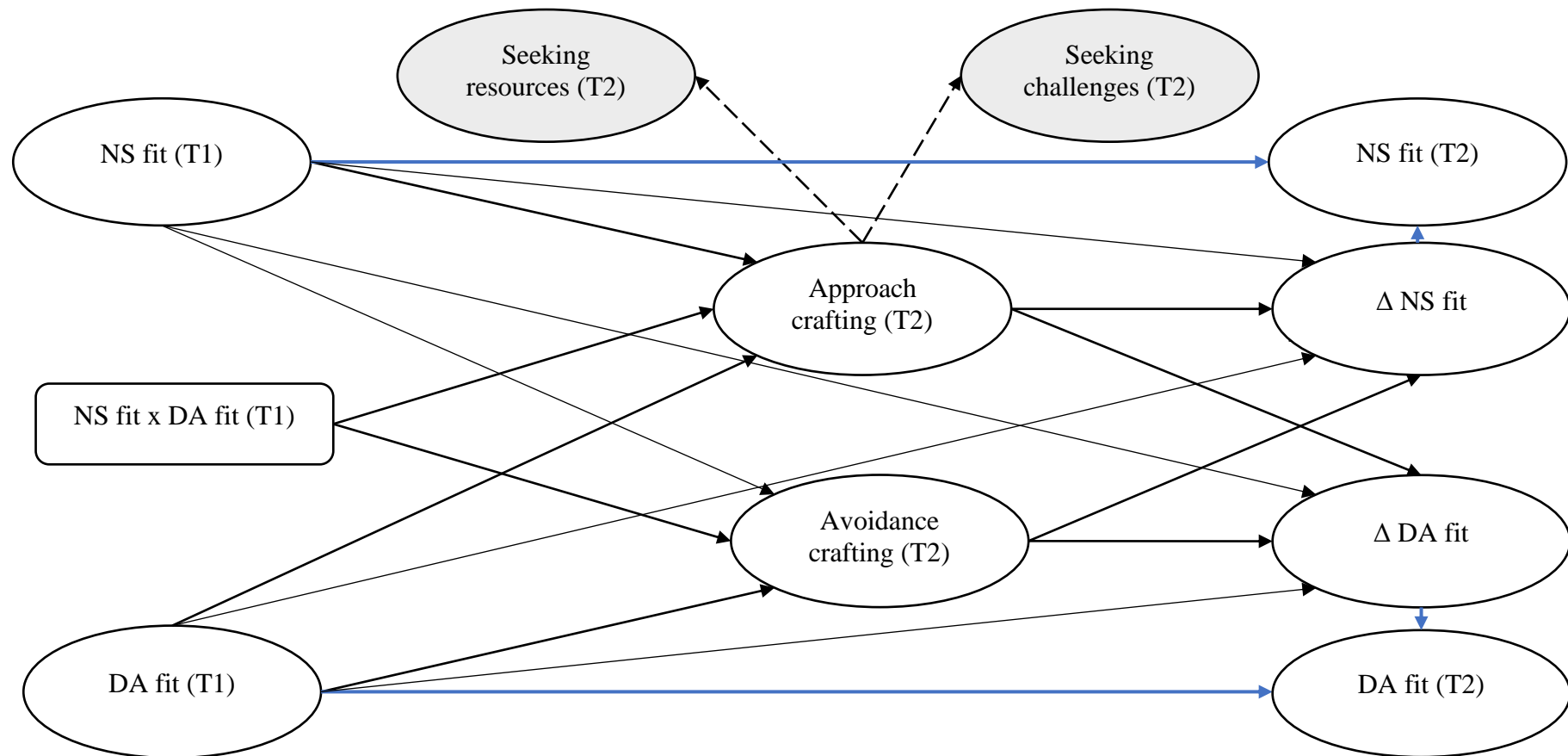
The analysis of data consisted of several steps. First, the distributional characteristics of responses were looked at for each variable (i.e., mean, standard-deviation, skewness, missing data, etc.) to ensure that these responses were exploitable. Second, separate CFAs were conducted for PJ fit perceptions and job crafting behaviours. This was done to ensure that parameter estimates were acceptable for each of the factors in each of these two conceptual domains. For example, factor loadings were looked at for each factor to ensure that they were satisfactory. As a direct consequence, the item “My performance is hurt by a lack of expertise on the job” was excluded from the perceived-DA fit scale, its factor loadings at T1 (i.e., .416) and T2 (i.e., .383) being undesirably low (Hair et al., 2014; Stevens, 2009).

Next, within each of the two conceptual domains (i.e., PJ fit perceptions and job crafting behaviours), factors were tested for their discriminant validity (e.g., seeking resources tested as being different from seeking challenges). Whether factors could be distinguished from each other was assessed with the use of nested CFA models (see Section 6.3.2). Comparisons in model fit determined whether the specification of single factors resulted in a significantly poorer model fit, in which case the multi-factor solution was retained (Brown, 2015). Indeed, it was important to ensure that seeking challenges and seeking resources were distinct factors, which could then be specified as the first-order factors of a second-order reflective approach crafting behaviours factor (see Figure 6.2), as proposed by Zhang and Parker (2019). Had both types of behaviours satisfactorily been collapsed into a single factor, the use of a second-order approach crafting behaviours factor would have been inadequate, as per the principle of model parsimony. More importantly it was critical to test whether perceived NS fit and DA fit were distinct factors.

With regard to these PJ fit perceptions, longitudinal measurement invariance investigations also had to be carried out to ensure that perceived NS fit and DA fit were consistently measured at T1 and T2 (Brown, 2015; Little, 2013). In order to test whether longitudinal measurement invariance held from weak to strict invariance, a difference in CFI of less than .01 between models was retained as evidence of invariance (Cheung & Rensvold, 2002). Indeed, the chi-square difference test has been argued to be very sensitive to sample size and it is faced with criticisms in the context of measurement invariance testing (e.g., Cheung & Rensvold, 2002; Grouzet et al., 2006; Little, 2013; Meade et al., 2008). Therefore, the criterion proposed by Cheung and Rensvold (2002) to evaluate invariance was retained for the present study (i.e. $\Delta CFI < .01$). While Meade et al. (2008) also proposed that $\Delta CFI < .002$ should be retained to evaluate invariance, this criterion may be seen as too restrictive for testing invariance in longitudinal models

(Little, 2013). In particular, these authors arrived to the criterion of $\Delta CFI < .002$ by using a very low error rate in their simulation study (Type I error rate of .01) and by using analytical/model parametrisations that may not fully apply to longitudinal models (Little, 2013). Although the criterion given by Cheung and Rensvold (2002) was also derived from non-longitudinal models, the difference in CFI of less than .01 has been suggested to be an appropriate cut-off value for testing longitudinal measurement invariance (Grouzet et al., 2006; Isiordia & Ferrer, 2018; Little, 2013). Furthermore, as this criterion was suggested to be suitable for assessing the difference in model fit between two nested models in general (Cheung & Rensvold, 2002), this criterion may apply for longitudinal models.

After performing domain specific CFAs, a ten-factor CFA including all the present research measures was specified. This ten-factor model consisted of (a) perceived NS fit at T1 and (b) at T2, (c) perceived DA fit at T1 and (d) at T2, (e) approach crafting behaviours as a higher-order construct of (f) seeking resources and (g) seeking challenges, (h) avoidance crafting behaviours (reducing demands), (i) proactive personality and (j) job autonomy. While all factors were assessed as distinct, subsequent SEM analyses suggested that excluding the control variable *job autonomy* from the research model (Figure 6.4) was warranted. Indeed, once the effects of proactive personality on approach and avoidance crafting behaviours were controlled for, the inclusion of more paths from proactive personality to the other focal variables, as well as the inclusion of new paths from other control variables to the focal variables, did not change the model standardised paths of interest by more than 0.1. Considering this change as trivial (Becker et al., 2016), it was appropriate not to over-complicate the model with unnecessary covariates. Hence, only the effects of proactive personality on job crafting behaviours were retained in the analysis. Importantly, “neutralising” a potential trait dimension of job crafting behaviours was theoretically relevant to the present research, focusing on situational job crafting



Note. Grey ovals represent the first-order factors of approach crafting behaviours. Non-depicted relationships amongst the white shapes are freely estimated covariances. Covariances are set to 0 between the interaction variable (residual-centred product factor scores) and PJ fit perceptions at T1. This will be explained in the next section. Covariances are also set to 0 for all covariances involved with NS fit and DA fit at T2. Blue paths are set to 1. Although not depicted (control variable), job crafting behaviours are regressed on proactive personality.

Figure 6.4. SEM model used for testing research hypotheses.

behaviours. This made proactive personality a control variable more important than others, and this is why other control variables were considered for inclusion only after the effects of proactive personality were assessed.

As a consequence, a more parsimonious nine-factor model, which excluded job autonomy, was specified. This nine-factor model was then tested against more parsimonious models whose factors were collapsed into theoretically plausible fewer factors, as done with domain specific CFAs. The nine-factor model being relevant, it was then tested for longitudinal measurement invariance. Strict invariance was expected to be achieved in this model, as it had already been achieved in CFAs specific to PJ fit perceptions.

After the nine-factor measurement model specifying strict invariance was evaluated as adequate, the modelling of latent change scores for perceived NS fit and DA fit was integrated in a revised CFA. Indeed, factors representing latent change scores could not have reasonably been modelled prior to having the final measurement model identified (it was necessary to first ensure that all measures were distinct from each other and that longitudinal invariance held). Then, the relevance of including the variable representing the interaction between perceived NS fit and DA fit at T1 in the structural model (SEM) had to be assessed. To this end, four models were compared regarding their fit to the data. More precisely, these models assessed whether constraining the effects of the interaction variable on job crafting behaviours to be null resulted in a significant decrease in model fit. The effects of the interaction variable on approach and avoidance crafting behaviours were first freely estimated, then one of these effects was set to be null, then the other, and finally both effects were set to be null.

In order to test hypotheses pertaining to indirect effects, recommendations given by Cheung and Lau (2008) were followed and parameters of the SEM were estimated using maximum likelihood with bootstrapping and 95% bias corrected confidence

intervals (BCCI). In line with other studies (e.g., Lu et al., 2014), bootstrapping was specified to generate 2,000 samples from the study sample.

6.5 Moderation

Performing moderation analyses in the SEM framework is far from common, presumably due to its complexity (Sardeshmukh & Vandenberg, 2017). Reflecting this complexity, this section of the analytical strategy chapter is a bit longer than the others.

6.5.1 General Notions about Moderation in the SEM Framework

In the SEM framework, moderation is broadly approached either in terms of *latent moderated structural equation modelling* (LMS) or *product indicator* strategy (PI) (Kolbe & Jorgensen, 2019; Little, 2013; Sardeshmukh & Vandenberg, 2017). In LMS, the interaction between two constructs is approached as a joint indicator vector representing a finite mixture of normal distributions (Klein & Moosbrugger, 2000). In the PI strategy, the interaction between two constructs is approached as the product of scores that pertain to each of these constructs.

In order to carry out the present research, the PI strategy was used. This choice is explained by two reasons. First, LMS is only available in the *Mplus* software (Little, 2013), rendering its accessibility limited. In opposition, the PI strategy may be implemented in most software, some of which are freely available to all users (e.g., R is a free software). Second, the PI approach has been argued to be a viable alternative to LMS (e.g., Little, Bovaird, et al., 2006), and sometimes preferable to LMS (e.g., Kolbe & Jorgensen, 2019). I will now explain in greater detail the PI strategy that was used for the present research.

As is performed in a typical ordinary least square multiple regression context (Aiken & West, 1991), the PI strategy in the SEM framework approaches a two-way interaction variable as being represented by the mathematical product of the two variables that are suggested to interact. As latent variables are defined by several indicators, a

common way to approach a two-way latent interaction is to multiply the indicators of the first latent variable by the indicators of the second latent variable, and to use these PIs as indicators of the latent interaction variable (e.g., Lin et al., 2010; Little, Bovaird, et al., 2006; Marsh et al., 2004).

PIs are typically created either following an all-possible-combinations strategy or a matched-pair strategy (Little, 2013; Little, Bovaird, et al., 2006; Marsh et al., 2004). When all combinations of pairs are created to load onto the latent interaction variable, covariances amongst PIs that share a common constituent have to be specified (Little, 2013; Little, Bovaird, et al., 2006). For instance, if the latent variable X is defined by the indicators X1, X2, X3, and the latent variable Y by the indicators Y1, Y2, Y3, then the latent interaction variable Z may be defined by nine PIs (i.e., X1Y1, X1Y2, X1Y3, X2Y1, and so forth). Furthermore, covariances between X1Y1, X1Y2 and X1Y3 would have to be specified because these PIs may share information due to the fact that they share X1 as one of their constituents. Similar covariances would be specified for all other PIs. An alternative approach to the all-possible-combinations is to create matched-pairs, where indicators of each of the two constructs at stake are used only once in defining pairs (Marsh et al., 2004, 2007). For example, taking the aforementioned latent variables X and Y, three combinations only would be used to inform the latent interaction variable (e.g., X1Y1, X2Y3 and X3Y2).

The all-possible-combinations and the matched-pair approach each have pros and cons. While the first strategy exploits all possible information, it may also result in complicating an SEM with a substantial amount of additional parameters to be estimated (Marsh et al., 2007). While the latter approach simplifies modelling, the choice of which PI to use may potentially affect results when indicators are congeneric (i.e., they have different loadings) (Little, 2013). In creating PIs with the matched-pair strategy, it is advised to create the first PI by combining indicators whose loadings are the highest, then

the second PI by combining the indicators whose loadings are the second highest, and so forth (Marsh et al., 2004).

In a non-SEM framework (no latent variables; classical multiple regression context), the creation of product variables with no prior or post variable treatment may be inconvenient for at least two reasons. First, it may prevent separating the first-order effects from the interaction effect in the analysis (Lance, 1988). Indeed, if $Z=XY$, then Z is correlated with both X and Y . As a result, when an outcome variable is regressed on X , Y and Z , the effects of X and Y on that outcome variable are influenced by Z due to the shared variance between X , Y and Z . Second, multicollinearity may cause parameter estimation issues and is not desirable for model estimation (Tabachnick & Fidell, 2013). Hence, a pre-treatment or a post-treatment strategy may be employed when dealing with interaction variables. The pre-treatment solution consists of mean-centring X and Y prior to multiplying them (Aiken & West, 1991). The post-treatment solution consists of creating the product variable of X and Y and residual-centring this product relative to its constituents (Lance, 1988). In other words, the product XY is regressed on X and Y and the residuals of this regression are used as the interaction variable. While the mean-centring strategy may *reduce* multicollinearity, the residual-centring strategy results in the creation of an interaction variable that is *completely* orthogonal (i.e., uncorrelated) to its first order constituents (Lance, 1988; Little, 2013). Furthermore, the residual-centring strategy allows for estimating interpretable first-order effects (i.e., they are orthogonal to the interaction variable), which is desirable when hypotheses to be tested are made about *both* (a) the effect of the interaction variable on an outcome and (b) the conditional effects of the constituents of that interaction variable on that same outcome (Lance, 1988).

In the SEM framework, the mean-centring and residual centring approaches may also be used to mitigate multicollinearity. In the former case, indicators of X and Y are mean-centred prior to creating PIs (Lin et al., 2010; Marsh et al., 2004). In the latter case,

PIs are created before being residual-centred relative to all the constituents (indicators) of the two latent variables that interact (Little, 2013; Little, Bovaird, et al., 2006). Residual-centred PIs are then used as indicators of the latent interaction variable. However, and contrary to the non-SEM framework, residual-centring PIs relative to the indicators of the two latent variables that are interacting may not guarantee orthogonality at the latent variable level. Indeed, Lin et al. (2010) showed that the residual-centring PI strategy was prone to a structural inconsistency. More precisely, the latent interaction variable may not be exactly orthogonal to the two latent variables that are suggested to interact when data are not normally distributed (Lin et al., 2010). Hence, Geldhof et al. (2013, p.44) recently suggested that orthogonality might be preserved when the product of factor scores is residual-centred “relative to latent variable main effects, not relative to the main effect indicators”.

6.5.2 Chosen Approach

Following Geldhof et al.'s (2013) observation, the present research uses residual-centred product factor scores to approach the two-way interaction between perceived DA fit and NS fit at T1. Indeed, orthogonality was desirable for the present study because hypotheses were also formulated regarding the conditional effects of PJ fit perceptions at T1 on job crafting behaviours. As such, the mean-centring PI strategy was not the most appropriate to test the conditional effects of PJ fit perceptions. Furthermore, it was considered highly plausible, following Lin et al. (2010), that the residual-centring PI strategy could have yielded an absence of orthogonality between the latent interaction variable and perceived NS fit and DA fit. Importantly, it was not possible to calculate simple slopes and moderated indirect effects using this strategy in the context of the present research. More details about this limitation are provided in Appendix F (Section F.2).

Using residual-centred product factor scores required proceeding with a few steps. For instance, creating the interaction variable representing the interaction between perceived NS fit and DA fit at T1 required (a) obtaining the factor scores for perceived NS fit and DA fit at T1, (b) multiplying them, (c) regressing the resulting variable onto perceived NS fit and DA fit factor scores at T1, (d) taking the associated regression residuals as residual-centred product factor scores, (e) placing these residual-centred product factor scores back into the dataset, (f) using them to specify a single-indicator construct representing the interaction between perceived NS fit and DA fit at T1. While the variable representing the interaction was not latent per se (single indicator construct with no measurement error), it was formed with factor scores, which themselves took into account measurement error. Hence, the interaction variable was formed with the product of “purified” scores. This technique differs from classical approaches to handling latent interaction variables where the unreliable part of indicators are multiplied in creating PIs and where these PIs are subsequently used to inform a “purified” latent interaction variable.

While the use of factor scores has been debated due to their indeterminate nature (Grice, 2001), factor scores are valuable analytical tools, notably when they adequately reflect common factors and reproduce covariance matrices close to those pertaining to these common factors (e.g., Beauducél, 2007; DiStefano et al., 2009; Grice, 2001). Providing that factor scores were deemed adequate for the present research (see Chapter 7 for more detail), they were used to form the interaction variable. The orthogonality of these residual-centred product factor scores with perceived NS fit and DA fit was then assessed prior to estimating the SEM. It is worth noting that factor scores were obtained by using the regression method to maximise their validity (DiStefano et al., 2009; Grice, 2001). This method is also advised when factor scores are computed to then be used as predictors of other factor scores (Skrondal & Laake, 2001). This suggests that using the

regression method for computing factor scores might be reasonable when these factor scores serve as predictors of latent variables.

As research has overlooked using residual-centred product factor scores, the present research also investigated whether the mean-centred PI strategy (Lin et al., 2010; Marsh et al., 2004) yielded similar results in terms of interaction effects (Appendix F, Section F.1). It was indeed important to carry out this supplemental analysis to ensure that the results obtained with the residual-centred product factor scores were consistent with those using a more common strategy. In addition, the residual-centring PI strategy was used to confirm interaction effects that were obtained using both the residual-centring product factor scores strategy and the mean-centring PI strategy (Appendix F, Section F.2). Overall, it is worth noting that any approach to modelling interaction rests on mathematical artefacts that do not measure interactions directly (i.e. interactions are typically not captured by a single construct). Hence, although one method for handling moderation was the focus of the present research, it does not imply that this method was superior over others.

In terms of how moderating effects were calculated and plotted in the results chapter, the below equations were used. In these equations, JC stands for job crafting behaviours. In line with Figure 6.4, and Section 6.4, JC is a function of perceived NS fit at T1 (NST1), perceived DA fit at T1 (DAT1), the residual-centred interaction variable (resDAT1NST1) but also proactive personality (PP).

Hence, JC was determined by:

$$(1) \quad JC = \beta_0 + \beta_1PP + \beta_2DAT1 + \beta_3NST1 + \beta_4resDAT1NST1 + e_{JC}$$

The residual-centred interaction variable (resDAT1NST1) was obtained using the following regression:

$$(2) \quad DAT1NST1 = \alpha_0 + \alpha_1DAT1 + \alpha_2NST1 + e_{DAT1NST1}$$

$$\text{Hence, } e_{DAT1NST1} = DAT1NST1 - [\alpha_0 + \alpha_1DAT1 + \alpha_2NST1]$$

Hence, $resDAT1NST1 = DAT1NST1 - [\alpha_0 + \alpha_1DAT1 + \alpha_2NST1]$

Substituting $resDAT1NST1$ by its mathematical expression in (1) gave:

$$(3) \quad JC = \beta_0 + \beta_1PP + \beta_2DAT1 + \beta_3NST1 + \beta_4(DAT1NST1 - [\alpha_0 + \alpha_1DAT1 + \alpha_2NST1]) + e_{JC}$$

Developing (3) yielded:

$$(4) \quad JC = \beta_0 + \beta_1PP + \beta_2DAT1 + \beta_3NST1 + \beta_4(DAT1NST1 - \alpha_0 - \alpha_1DAT1 - \alpha_2NST1) + e_{JC}$$

Hence, it gave:

$$JC = \beta_0 + \beta_1PP + \beta_2DAT1 + \beta_3NST1 + \beta_4DAT1NST1 - \beta_4\alpha_0 - \beta_4\alpha_1DAT1 - \beta_4\alpha_2NST1 + e_{JC}$$

Factorising $DAT1$ gave:

$$(5) \quad JC = \beta_0 + \beta_1PP + \beta_3NST1 - \beta_4\alpha_0 - \beta_4\alpha_2NST1 + e_{JC} + DAT1(\beta_2 + \beta_4NST1 - \beta_4\alpha_1)$$

Hence, simple slopes (S) were given by:

$$(6) \quad S = \beta_2 + \beta_4NST1 - \beta_4\alpha_1$$

And simple intercepts (I) by:

$$(7) \quad I = \beta_0 + \beta_1PP - \beta_4\alpha_0 + NST1(\beta_3 - \beta_4\alpha_2)$$

In order to calculate moderated indirect effects going from perceived DA fit at T1 to a given change in PJ fit perception through job crafting behaviours, S was then multiplied by the value of the effect of job crafting behaviours on the change in PJ fit perception at stake. In other words, if γ represents the effect of job crafting behaviours on the change in PJ fit perception at stake, the moderated indirect effect of perceived DA fit at T1 on this change in perception through job crafting behaviours was given by:

$$(8) \quad \text{Moderated indirect effect} = (\beta_2 + \beta_4NST1 - \beta_4\alpha_1)\gamma$$

6.6 Conclusion

This chapter highlighted key aspects of the analysis used for the present research. First, the effect coding method of latent variable scaling was presented. Then, nested

CFAs and the use of phantom constructs were discussed. The specification of a second-order factor of approach crafting behaviours was presented, as well as information about the specification of latent change scores. This chapter also gave key information about the analytical steps used in the present research. Finally, moderation was discussed and the residual-centred product factor scores strategy was chosen for the present research.

Chapter Seven

Results

7.1 Introduction

This chapter reports statistical results from the present research study. In line with common practice, descriptive statistics are first reported. Then, results pertaining to preliminary analyses (i.e., longitudinal invariance testing, discriminant validity of factors) are presented. Hypotheses are subsequently tested in an integrated SEM. It is worth reminding that all results from the present chapter were obtained with the removal of one item of the perceived DA fit scale, due to its poor factor loading at T1 and T2, as explained in Section 6.4. Furthermore, it is worth noting that results from the SEM, using the mean-centred and residual-centred PI strategies as approaches to handling moderation, are presented in Appendix F.

7.2 Descriptive Statistics

As longitudinal strict invariance held for PJ fit measures, the four latent variable correlation tables presented in Tables 7.1 to 7.4 were obtained with this level of invariance specified. Indeed, as the SEM used for the testing of hypotheses specified longitudinal strict invariance, it seemed rather logical, for consistency purposes, to report correlational results from the underlying measurement model (CFA) that specified strict invariance. In order to provide full information on the study variables, four tables were generated. Table 7.1 reports latent variable means, standard deviations and correlations pertaining to the different factors included in the present study. As approach crafting behaviours were specified as the second-order superordinate factor of seeking resources and seeking challenges, covariances between these two first-order factors and other variables were not estimated.

Table 7.1. Correlations amongst latent variables (with approach crafting behaviours as a second-order factor) specifying longitudinal strict invariance

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Proactive personality	3.74	.66						
2 Perceived NS fit at T1	3.70	.94	.40***					
3 Perceived DA fit at T1	4.40	.62	.44***	.47***				
4 Approach crafting behaviours	2.89	.67	.46***	.40***	.10			
5 Avoidance crafting behaviours	2.65	.80	.17**	.00	-.14*	.40***		
6 Perceived NS fit at T2	3.70	.97	.37***	.84***	.36***	.42***	-.03	
7 Perceived DA fit at T2	4.38	.63	.41***	.52***	.84***	.23***	-0.16**	0.54***

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7.2. Correlations amongst latent variables (without approach crafting behaviours as a second-order factor) specifying longitudinal strict invariance

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Proactive personality	3.74	.66							
2 Perceived NS fit at T1	3.70	.94	.40***						
3 Perceived DA fit at T1	4.40	.62	.44***	.47***					
4 Seeking resources	3.11	.65	.43***	.42***	.11				
5 Seeking challenges	2.68	.90	.39***	.26***	.04	.76***			
6 Reducing demands	2.65	.80	.17**	.00	-.14*	.38***	.34***		
7 Perceived NS fit at T2	3.70	.97	.37***	.84***	.36***	.44***	.27***	-.03	
8 Perceived DA fit at T2	4.38	.63	.41***	.52***	.84***	.25***	.13*	-.16**	.54***

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7.3. Correlations amongst latent variables (with approach crafting behaviours as a second-order factor) specifying longitudinal strict invariance and change in PJ fit perceptions

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Proactive personality	3.74	.66						
2 Perceived NS fit at T1	3.70	.94	.40***					
3 Perceived DA fit at T1	4.40	.62	.44***	.47***				
4 Approach crafting behaviours	2.89	.67	.46***	.40***	.10			
5 Avoidance crafting behaviours	2.65	.80	.17**	.00	-.14*	.40***		
6 Change in perceived NS fit	0.01	.55	-.03	-.25***	-.18*	.05	-.06	
7 Change in perceived DA fit	-0.02	.35	-.04	.10	-.25**	.24**	-.03	.42**

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7.4. Correlations amongst latent variables (without approach crafting behaviours as a second-order factor) specifying longitudinal strict invariance and change in PJ fit perceptions

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Proactive personality	3.74	.66							
2 Perceived NS fit at T1	3.70	.94	.40***						
3 Perceived DA fit at T1	4.40	.62	.44***	.47***					
4 Seeking resources	3.11	.65	.43***	.42***	.11				
5 Seeking challenges	2.68	.90	.39***	.26***	.04	.76***			
6 Reducing demands	2.65	.80	.17**	.00	-.14*	.38***	.34***		
7 Change in perceived NS fit	.01	.55	-.03	-.25***	-.18*	.05	.02	-.06	
8 Change in perceived DA fit	-.02	.35	-.04	.10	-.25**	.26**	.15*	-.03	.42**

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7.2 reports latent variable means, standard deviations and correlations from an alternative model that did not specify a second-order superordinate approach crafting behaviours factor. In other words, Table 7.2 reports information pertaining to a typical CFA where all factors are first-order factors. This information is given for informational purposes. Tables 7.3 and 7.4 are “sibling” tables of Table 7.1 and 7.2 respectively, the change in these tables pertaining to the presence of change in PJ fit perceptions in lieu of PJ fit perceptions at T2. Additionally, the reporting of latent correlations and metrics obtained from alternative models specifying longitudinal configural invariance is available in Appendix E for information (Tables E.1 to E.4).

7.3 Preliminary Analyses

In two unconstrained CFAs, which specified longitudinal configural invariance only, perceived NS fit and DA fit were evaluated as distinct factors at T1 and T2 (four-factor model) and as a unique factor collapsing the two types of fit at T1 and T2 (two-factor model). The results of these two CFAs (see Table 7.5) showed that approaching perceived NS fit and DA fit as distinct factors, and thus constructs, yielded much better fit indices than approaching these two types of fit as reflecting a same and unique factor (or construct).

Table 7.5. CFAs pertaining to the distinctiveness of perceived NS fit and DA fit

Person-job fit CFAs	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Four-factor model	.98	.96	.06	42	90.08***		
Two-factor model	.84	.74	.16	47	379.61***	5	268.93***

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000).

* $p < .05$; ** $p < .01$; *** $p < .001$.

Longitudinal measurement invariance tests had then to be performed (Table 7.6). The results of these tests indicated that the assumption of strict invariance for both

perceived NS fit and DA fit could not be rejected. Indeed, the difference in CFI between the models specifying configural and strict invariance was inferior to .01 (i.e., .007 to be more accurate). Such a difference suggested that longitudinal measurement invariance held (Cheung & Rensvold, 2002). Furthermore, the difference in fit between the models specifying strong invariance and strict variance was negligible ($\Delta \chi^2 = 8.88$, $\Delta df = 6$, $p > .05$; $\Delta CFI = .002$). It is important to note that strict invariance was also tenable for PJ fit perceptions in univariate CFAs.

Table 7.6. CFAs pertaining to longitudinal measurement invariance for PJ fit perceptions

Person-job fit CFAs	CFI	TLI	RMSEA	df	χ^2	Δdf	$\Delta \chi^2$
Four-factor model (config inv.)	.98	.96	.06	42	90.08***		
Four-factor model (weak inv.)	.98	.96	.06	46	102.02***	4	9.70*
Four-factor model (strong inv.)	.98	.96	.06	50	111.30***	8	17.75*
Four-factor model (strict inv.)	.97	.96	.06	56	118.73***	14	24.61*

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). Δ concerned differences with the model specifying configural invariance.

* $p < .05$; ** $p < .01$; *** $p < .001$.

For information, strict invariance was specified in two univariate LCS. Results from the two LCS indicated that scores pertaining to perceived NS fit and DA fit changed between T1 and T2. Indeed, while mean scores did not change on average, these scores changed within individuals (constraining the variance of change scores to be null significantly worsened model fit). More precisely, the variance of the change score pertaining to perceived NS fit was $\sigma^2 = .30$ ($p < .001$), while that of perceived DA fit was $\sigma^2 = .12$ ($p < .001$). The study of change in PJ fit perceptions was thus relevant.

It was then important to assess whether approach and avoidance crafting behaviours were distinct constructs. Corresponding results are presented in Table 7.7. Not only were seeking resources, seeking challenges and reducing demands distinct, but the

higher-order superordinate factor representing approach crafting behaviours was also distinct from reducing demands (i.e., avoidance crafting behaviours). Support for the distinctiveness of these factors is observable in the significant difference in model fit between models (Table 7.7).

Prior to testing hypotheses, a series of nested CFAs were performed on a nine-factor model to ensure that this model was the most relevant one. The nine factors were: perceived NS fit at T1 (a) and T2 (b), perceived DA fit at T1 (c) and T2 (d), approach crafting behaviours (e) as a higher-order construct of seeking resources (f) and seeking challenges (g), avoidance crafting behaviours (reducing demands) (h), and proactive personality (i). The results of these CFAs are presented in Table 7.8. As this table shows, the nine-factor model fitted the data better than any other alternative models and provided excellent fit indices (Hu & Bentler, 1999).

Furthermore, the nine-factor model specifying longitudinal strict invariance on PJ fit perceptions provided very satisfactory fit indices, very close to the model specifying longitudinal configural invariance (Table 7.8). In fact, the difference in CFI between these two models was inferior to .01 (i.e., .004 to be more accurate). This trivial difference indicated that longitudinal strict invariance could reasonably be specified for the model and could thus be specified in subsequent data analysis (e.g., Little, 2013; Newsom, 2015; Widaman et al., 2010). Furthermore, the difference in fit between the model that specified strong invariance and the model that specified strict variance was negligible ($\Delta \chi^2 = 9.26$, $\Delta df = 6$, $p > .05$; $\Delta CFI = .001$).

Consequently, change scores pertaining to perceived NS fit and DA fit were modelled with the specification of longitudinal strict invariance. The fit of this model was identical to the one not using the latent change scores ($\chi^2(335) = 607.02$, $p < .001$, CFI = .95, TLI = .95, RMSEA = .05). Factor scores pertaining to perceived NS fit and DA fit at

Table 7.7. CFAs pertaining to the distinctiveness of approach and avoidance crafting behaviours

Job crafting behaviours CFAs	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Approach crafting factor not specified							
Three-factor model (seeking resources, challenges, reducing demands)	.97	.96	.05	41	86.15***		
Two-factor model (seeking resources and challenges collapsed, reducing demands)	.92	.90	.09	43	165.41***	2	74.39***
One-factor model (seeking resources, seeking challenges, and reducing demands all collapsed)	.64	.55	.18	44	590.95***	3	483.06***
Approach crafting factor specified							
Four-factor model (approach crafting as a superordinate factor of seeking resources and challenges, and reducing demands)	.97	.96	.05	41	86.15***		
Three-factor model (reducing demands and approach crafting collapsed, approach crafting as a superordinate factor of seeking resources and challenges)	.88	.84	.11	42	226.10***	1	142.04***

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). For models not featuring the approach crafting factor, Δ concerned differences with the three-factor model; for models featuring the specification of an approach crafting factor, Δ concerned differences with the four-factor model. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 7.8. CFAs pertaining to the variables included in the final model

Models	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Nine-factor model (longitudinal configural invariance on PJ fit perceptions specified)	.96	.95	.04	321	575.20****		
Seven-factor model (longitudinal configural invariance on PJ fit perceptions specified) Perceived NS fit and DA fit collapsed as a unique PJ fit factor at T1 and T2	.89	.87	.07	332	1011.22****	11	347.31***
Seven-factor model (longitudinal configural invariance on PJ fit perceptions specified) Approach crafting behaviours, avoidance crafting behaviours and proactive personality collapsed as a unique proactivity factor	.84	.81	.09	332	1336.85****	11	795.29****
Eight-factor model (longitudinal configural invariance on PJ fit perceptions specified) Approach crafting behaviours and proactive personality collapsed as a unique proactivity factor	.92	.91	.06	327	790.69****	6	205.65****
Eight-factor model (longitudinal configural invariance on PJ fit perceptions specified) Avoidance crafting behaviours and proactive personality collapsed as a unique proactivity factor	.86	.84	.08	327	1160.54****	6	664.25****
Nine-factor model (longitudinal weak invariance on PJ fit perceptions specified)	.96	.95	.05	325	588.83****	4	10.40*
Nine-factor model (longitudinal strong invariance on PJ fit perceptions specified)	.96	.95	.05	329	597.82****	8	18.57*
Nine-factor model (longitudinal strict invariance on PJ fit perceptions specified)	.95	.95	.05	335	607.02****	14	25.56*

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). Δ concerned differences with the nine-factor model (longitudinal configural invariance on PJ fit perceptions specified).

* $p < .05$; ** $p < .01$; *** $p < .001$.

T1 were then obtained from the final measurement model including the latent change scores and specifying longitudinal strict invariance. These scores were then multiplied for each individual to obtain a variable representing the interaction between the two types of fit at T1. This variable was then regressed on perceived NS fit and DA fit at T1 to obtain residual-centred product factor scores, as per the procedure described in Section 6.5.2. This single-indicator interaction variable was then placed back into the dataset and used for analysis.

The question of whether using factor scores for creating the interaction variable was appropriate may be raised. First, factor scores extracted from the CFA correlated very highly with their common factors in subsequent analyses. Indeed, the factor scores obtained for perceived NS fit were included in a two-factor CFA that consisted of perceived NS fit at T1 and T2 with strict invariance specified (Model A). Model A gave rise to a non-positive definite matrix and a correlation that exceeded one between the “score variable” and the corresponding latent variable. The same analysis was carried out for perceived DA fit (Model B) and gave identical results. Furthermore, the three indicators of perceived NS fit correlated very highly with the NS fit factor scores ($.87 < r < .92$) and the three indicators of perceived DA fit also correlated very highly with the DA fit factor scores ($.76 < r < .86$). Second, correlations between the factor scores and other latent variables (e.g., avoidance crafting behaviours) were compared with correlations between the corresponding latent variables of perceived NS fit and DA fit with these same other variables. However, including all these variables into a unique model was not feasible due to model convergence issues. Therefore, a first CFA was estimated where perceived NS fit and DA fit at T1 and T2 were factor scores (i.e., single-indicator constructs) and all other variables were latent (Model C). In a second CFA, all variables were latent with strict invariance specified (Model D). The difference between correlations obtained in Model C and D are presented in Table 7.9. Correlations involving PJ fit perceptions at T2

or Change in PJ fit perceptions are not included because factor scores for T2 perceptions were not used in the analysis. As Table 7.9 shows, the largest difference in correlation is of .056. which may be seen as a very small difference (Grice, 2001). Considering these results, the creation of the interaction variable using factor scores was deemed appropriate (i.e. the factor scores could be seen as appropriately reflecting the latent variables of perceived NS fit and DA fit).

Table 7.9. Difference in correlations between a model approaching PJ fit perceptions as factor scores (Model C) and another as latent variables (Model D)

	Perceived NS fit at T1	Perceived DA fit at T1
Perceived NS fit at T1		
Perceived DA fit at T1	.056 (.528 - .472)	
Avoidance crafting behaviours	.000 (.005 - .004) ^a	-.013 (-.155 – [-.142]).
Approach crafting behaviours	.021 (.424 - .403)	.010 (.107 - .097)
Proactive personality	.020 (.416 - .396)	.041 (.481 - .440)

^a There is a difference between the difference value (not in brackets) and the subtracted values in brackets (Model C – Model D) due to number rounding.

Nevertheless, as factor scores are not strictly identical to the “true” scores of latent variables (i.e., common factors) (e.g., Grice, 2001), the question of whether the interaction variable formed with factor scores was orthogonal to its latent constituents was also addressed. Whether orthogonality held was assessed by comparing the fit of two nested CFAs, one where the covariances between the interaction variable (residual-centred product factor scores) and the latent variables of perceived NS fit and DA fit at T1 were set to 0, and one where these covariances were freely estimated. These two models also contained the other variables of the research model (i.e., approach and avoidance crafting behaviours, change in PJ fit perceptions, PJ fit perceptions at T2 and proactive personality). The results of this analysis are presented in Table 7.10. Although PJ fit perceptions at T1 were not strictly orthogonal to the interaction variable, they could

nonetheless be considered as such given the trivial non-significant difference between the models respectively relaxing and specifying orthogonality.

Table 7.10. CFAs pertaining to the orthogonality of the interaction variable with PJ fit perceptions at T1

CFA	CFI	TLI	RMSEA	df	χ^2	Δdf	$\Delta \chi^2$
Orthogonality relaxed	.95	.94	.05	357	646.25*** ^a		
Orthogonality specified	.95	.94	.05	359	640.62*** ^a	2	.27 (ns)

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000).^a While it may be seen as surprising that the adjusted chi-square is better for the model specifying orthogonality than for the model relaxing it, it is important to note that the non-adjusted chi-square for the model relaxing orthogonality was $\chi^2 = 829.54$ and that of the model specifying it was $\chi^2 = 829.59$.

* $p < .05$; ** $p < .01$; *** $p < .001$.

As such, orthogonality was specified with a null covariance between the interaction variable and the PJ fit perceptions at T1. The last step before proceeding with the testing of hypotheses was to evaluate the actual relevance of including this interaction variable into the model. In order to do so, a model where the effects of the interaction variable on job crafting behaviours were specified as free parameters was first estimated (Model A). Then, the effect of the interaction variable onto approach crafting behaviours was set as null, while its effect on avoidance crafting behaviours was freely estimated (Model B). Model C specified symmetrical effects (a null effect of the interaction variable on avoidance crafting behaviours and a freely estimated effect of this variable on approach crafting behaviours). In order to obtain full information regarding the effect of the interaction variable, Model D specified that this variable had an effect on neither type of job crafting behaviours. Results from model comparisons are reported in Table 7.11. As Model A fitted the data significantly better than any other alternative models, it was reasoned that estimating an SEM where the effects of the interaction variable on job crafting behaviours would be specified as free parameters was relevant.

At this stage of the results chapter, the question of whether the modelling of a latent variable representing the interaction (based on PIs) would have yielded similar results may be raised. A parallel analysis was conducted and it gave similar results (Appendix F).

7.4 Testing of Hypotheses

7.4.1 Direct effects

Direct effects are reported in Figure 7.1. Although the effect of proactive personality on job crafting behaviours was not reported for clarity purposes, it may be noted that proactive personality significantly affected both approach crafting behaviours ($\gamma = -.44, p < .001$) and avoidance crafting behaviours ($\gamma = .31, p < .001$).

As it may be seen from Figure 7.1, perceived DA fit at T1 significantly predicted approach crafting behaviours ($\gamma = -.26, p < .001$) and avoidance crafting behaviours ($\gamma = -.28, p < .001$), supporting hypotheses 1a and 1b respectively. Furthermore, consistent with Hypothesis 2, perceived NS fit at T1 significantly affected approach crafting behaviours ($\gamma = .35, p < .001$). Interestingly, it may be seen from Figure 7.1 that perceived NS fit did not affect avoidance crafting behaviours significantly ($\gamma = .02, p = .82$). While no hypothesis was made on this relationship, this effect was nonetheless estimated in order to plot the moderating effect of this type of fit on the relationship between perceived DA fit and avoidance crafting behaviours.

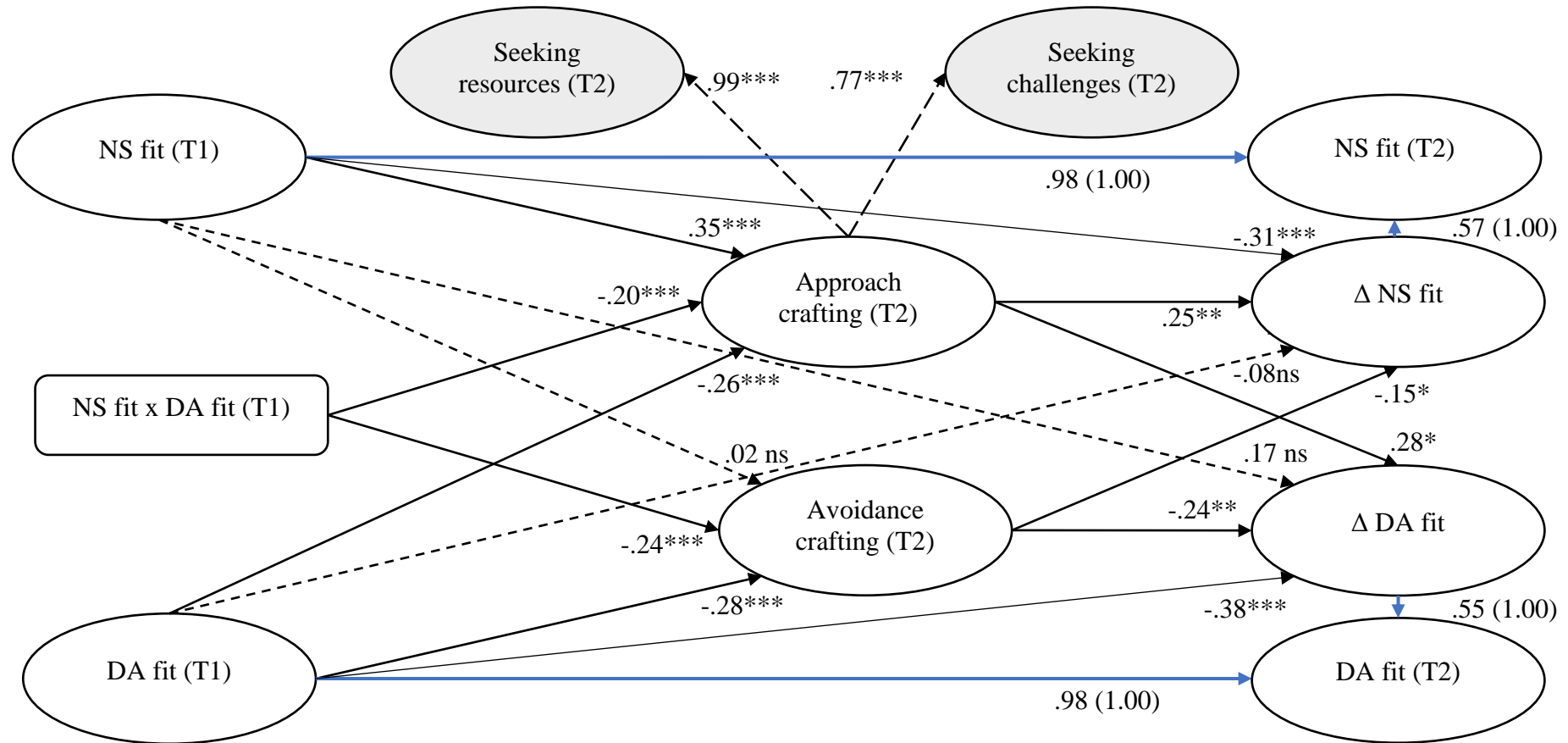
As hypothesised, the effect of perceived DA fit at T1 on job crafting behaviours was moderated by perceived NS fit at T1. More precisely, perceived NS fit at T1 strengthened the negative impact of perceived DA fit at T1 on both approach crafting behaviours ($\gamma = -.20, p < .001$) and avoidance crafting behaviours ($\gamma = -.24, p < .001$), supporting hypotheses 3a and 3b. For ease of interpretation, moderating effects are graphically presented in Figures 7.2 and 7.3.

Table 7.11. SEMs pertaining to the relevance of including the interaction variable into the analysis

Models	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Model A - Effect of interaction freely estimated on approach and avoidance crafting behaviours	.95	.94	.05	359	640.62***		
Model B – Effect of interaction term null on approach crafting behaviours and freely estimated on avoidance crafting behaviours	.95	.94	.05	360	655.75***	1	12.94***
Model C – Effect of interaction term freely estimated on approach crafting behaviours and null on avoidance crafting behaviours	.95	.94	.05	360	660.15***	1	17.97***
Model D – Effect of interaction term null on both approach and avoidance crafting behaviours	.95	.94	.05	361	667.92***	2	25.36***

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). Δ concerned differences with Model A.

* $p < .05$; ** $p < .01$; *** $p < .001$.



Note. Estimates are standardized. Grey ovals represent the first-order factors of approach crafting behaviours. Non-depicted relationships amongst the white shapes are freely estimated covariances. Covariances are set to 0 between the interaction variable (residual-centred product factor scores) and PJ fit perceptions at T1. They are also set to 0 for all covariances involving NS fit and DA fit at T2. Blue paths were set to 1 (values in blue). Although not depicted, the effects of proactive personality on both approach and avoidance crafting behaviours are controlled for.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 7.1. Results from SEM: direct effects

Relationship between approach crafting and perceived DA fit at T1 (mean-centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)

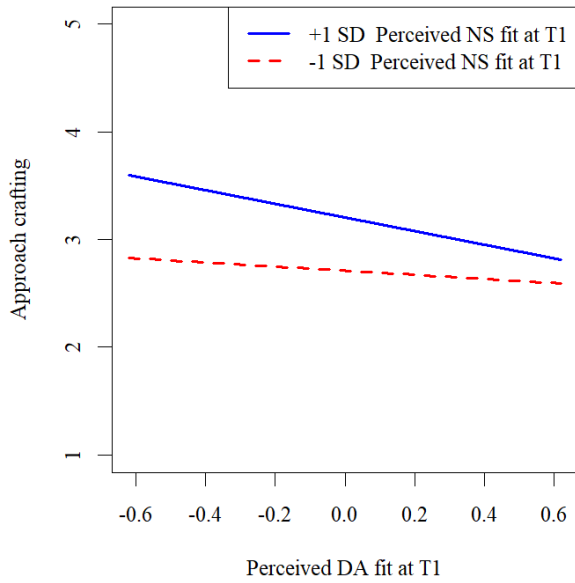


Figure 7.2. Moderating effect of perceived NS fit at T1 on the relationship between perceived DA fit at T1 and approach crafting behaviours at T2

Relationship between avoidance crafting and perceived DA fit at T1 (mean-centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)

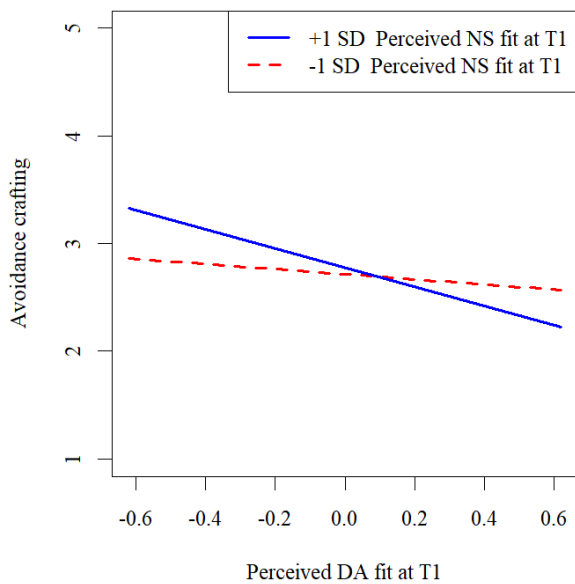


Figure 7.3. Moderating effect of perceived NS fit at T1 on the relationship between perceived DA fit at T1 and avoidance crafting behaviours at T2

For information, results of the analysis carried out using a latent interaction variable based on mean-centred PIs gave similar results (Appendix F, Figure F.1 and Table F.1), which supported the moderating role of perceived NS fit at T1 on the relationship between perceived DA fit at T1 and job crafting behaviours.

In addition, detail about simple slopes, using both the residual-centred product factor scores strategy and the mean-centred PI strategy, are provided in the same appendix (Table F.2). Results about simple slopes were obtained with bootstrap estimates, as simple slopes were tested simultaneously with (moderated) indirect effects. As Table F.2 shows, slopes for both approach and avoidance crafting behaviours were significant when perceived NS fit was one standard-deviation below the mean, as well as one standard-deviation above the mean. A post-hoc analysis using the residual-centred product factor scores strategy showed that the slopes became non-significant when perceived NS fit was 1.2 standard-deviation below the mean. Running this analysis was warranted because the simple slopes clearly decreased when perceived NS fit decreased. It was thus insightful to evaluate at which point the simple slopes would be at level (flat). Although simple slopes were not calculated using the residual-centring PI strategy (see Section F.2), results obtained with this strategy (Figure F.2) showed that the effects of the interaction between perceived NS fit and DA fit on both approach and avoidance crafting behaviours were significant. These additional analyses confirmed the moderating role of perceived NS fit in the relationship linking perceived DA fit to job crafting behaviours.

In turn, approach crafting behaviours positively affected change in perceived NS fit ($\beta = .25, p < .01$) and perceived DA fit ($\beta = .28, p < .05$), controlling for both perceived NS fit and DA fit at T1. Therefore, hypothesis 4a was supported. In opposition to approach crafting behaviours, avoidance crafting behaviours negatively affected change in both perceived NS fit ($\beta = -.15, p < .05$) and perceived DA fit ($\beta = -.24, p < .01$),

controlling for both perceived NS fit and DA fit at T1. These results brought support for Hypothesis 4b.

7.4.2 Indirect effects

Results obtained for indirect effect hypotheses are presented in Table 7.12. As it may be seen from this table, all indirect effects were significant. Indeed, none of the confidence intervals pertaining to indirect effects contained the value “0”. Hence, PJ fit perceptions changed through both approach and avoidance crafting behaviours, and they affected each other’s development through these behaviours, supporting hypotheses 5 and 6. As for hypotheses 7a and 7b, which posited that perceived NS fit at T1 would moderate the effect of perceived DA fit at T1 on change in PJ fit perceptions through approach and avoidance crafting behaviours, these hypotheses were supported.

Table 7.12. Unstandardized (b) and standardized (β) indirect effects obtained with bootstrapping ($n = 2000$)

Indirect effects	b (β)	SE	Lower Limit BCCI 95%	Upper Limit BCCI 95%
Perceived NS fit (T1) → Approach crafting behaviours → Change in perceived NS fit	.050 (.087)	.021	.015	.099
Perceived NS fit (T1) → Approach crafting behaviours → Change in perceived DA fit	.037 (.100)	.017	.009	.078
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived DA fit	-.042 (-.074)	.022	-.098	-.008
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived NS fit	-.057 (-.064)	.028	-.126	-.014
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived DA fit	.037 (.066)	.015	.014	.078
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived NS fit	.037 (.042)	.020	.005	.088
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived DA fit				
Perceived NS fit +1 SD	-.095 (-.174)	.044	-.196	-.023
Perceived NS fit mean	-.062 (-.118)	.030	-.131	-.015
Perceived NS fit -1 SD	-.029 (-.062)	.018	-.081	-.004
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived NS fit				
Perceived NS fit (T1) +1 SD	-.129 (-.152)	.058	-.263	-.033
Perceived NS fit (T1) mean	-.084 (-.103)	.039	-.176	-.021
Perceived NS fit (T1) -1 SD	-.039 (-.054)	.023	-.103	-.006
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived DA fit				
Perceived NS fit (T1) +1 SD	.092 (.169)	.037	.031	.181
Perceived NS fit (T1) mean	.058 (.112)	.023	.022	.116
Perceived NS fit (T1) -1 SD	.024 (.055)	.012	.008	.057
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived NS fit				
Perceived NS fit (T1) +1 SD	.091 (.107)	.047	.011	.200
Perceived NS fit (T1) mean	.058 (.071)	.030	.007	.127
Perceived NS fit (T1) -1 SD	.024 (.035)	.015	.002	.065

Note. Standard errors and confidence intervals are given for unstandardized indirect effects.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Chapter Eight

Discussion and Conclusion

8.1 Introduction

This chapter discusses the findings of the present research. First, the findings are summarised. Then, they are discussed in relation to existing studies. In so doing, their contributions to research are highlighted. Practical implications derived from these findings are then considered. Finally, this chapter ends with a discussion that pertains to the limitations of the present research and by presenting future research directions. As with other chapters, the terms “NS fit” and “DA fit” will be used to refer to perceived *job-related* NS fit and DA fit. Therefore, NS fit and DA fit will be approached in terms of their underlying need fulfilment process: a lack of NS fit (or lower NS fit perceptions) refers to job supplies not meeting personal needs, and a lack of DA fit (or lower DA fit perceptions) to abilities not meeting job requirements, rather than to the notions of under-over supplies/abilities relating to the indirect fit research paradigm.

8.2 Research Findings

The present research aimed to extend our knowledge of how PJ fit perceptions change over time, focusing on the role played by job crafting behaviours in those changes. Conducting this research was critical given (a) the positive impact of PJ fit perceptions on employee attitudes and behaviours (e.g., Kristof-Brown et al., 2005), (b) the repeated calls for better understanding how PE fit perceptions develop over time (e.g., De Cooman et al., 2019), and (c) the scarcity of research addressing the role played by proactive behaviours in change in PJ fit perceptions (e.g. Bayl-Smith & Griffin, 2018). In particular, the review of the literature (see Chapter 3) highlighted that the relationship between change in PJ fit perceptions and job crafting behaviours, assumed to be intertwined (e.g., Tims & Bakker, 2010), warranted more research, both from a theoretical and an empirical perspective. The present research, therefore, aimed to contribute to filling research gaps

in this relationship, and to examine the potential mediator role of job crafting behaviours in change in PJ fit perceptions. From a theoretical perspective, the interdependency between change in perceived NS fit and DA fit and approach and avoidance crafting behaviours was analysed through the lens of COR theory (Hobfoll, 1989). Research hypotheses derived from this theoretical investigation were then empirically tested using a two-wave three-month lag study. In testing these hypotheses, the present research yielded five critical findings.

First, it was hypothesized that DA fit would negatively affect approach and avoidance crafting behaviours, while NS fit was hypothesized to positively affect approach crafting behaviours. Consistent with these hypotheses, NS fit and DA fit differentially predicted job crafting behaviours. Second, as predicted, the effects of DA fit on both approach and avoidance crafting behaviours were moderated by NS fit, such that the negative impact of DA fit job crafting behaviours was stronger when NS fit was high versus low. Third, in line with the hypotheses, approach crafting behaviours positively affected both changes in NS fit and DA fit. In contrast, also in line with the hypotheses, avoidance crafting behaviours negatively affected change in these PJ fit perceptions. Fourth, tests of indirect effects showed that change in NS fit and DA fit indirectly occurred through avoidance crafting behaviours. Approach crafting behaviours also mediated change in NS fit and DA fit. Thereby, indirect effects hypotheses were supported. In addition, the effects of initial DA fit on change in DA fit and NS fit through each approach and avoidance crafting behaviours were greater when NS fit was high. These results provided support for the moderated indirect effect hypotheses. Fifth, tests of indirect effects also showed that NS fit and DA fit related to each over time and through job crafting behaviours. As expected, controlling for initial NS fit, job crafting behaviours, following an initial DA fit, significantly affected both change in DA fit and

NS fit. Likewise, controlling for initial DA fit, approach crafting behaviours following initial NS fit had positive effects on both changes in NS fit and DA fit.

Of note, I did not develop any research hypothesis regarding the effect of NS fit on avoidance crafting behaviours because COR (Hobfoll, 1989) was not consistent with so doing. Nevertheless, I estimated and tested this relationship because (a) this estimation was necessary for plotting the interaction effect of NS fit and DA fit on job crafting behaviours, and (b) it was also interesting to do so for exploratory purposes and in order to get a full picture of the relationship between PJ fit perceptions and job crafting behaviours. Results revealed that NS fit did not significantly predict avoidance crafting behaviours (i.e., trivial positive effect). This finding completed those derived from the test of hypotheses and further supports the perspective that DA fit and NS fit may have differential effects on job crafting behaviours.

8.3 Research Contributions

The present research contributes to the literature in several important ways by providing insights into the role of personal agency in change in PJ fit perceptions. More precisely, its findings contribute to extending our knowledge of how perceptions of NS fit and DA fit change over time and influence each other through job crafting behaviours. I will now explain how these findings contribute to (a) developing our understanding of the impact of PJ fit perceptions on job crafting behaviours, (b) identifying a new job crafting boundary condition, and (c) extending our knowledge of the effects of job crafting behaviours on change in PJ fit perceptions. Integrating these findings, I will explicate how the present research (d) fills knowledge gaps that pertain to the intertwined relationship between change in PJ fit perceptions and job crafting behaviours.

8.3.1 Impact of PJ Fit Perceptions on Job Crafting Behaviours: Differential Effects

First, it is important to note that the present research contributes to the literature by examining, theoretically and empirically, the effects of PJ fit perceptions on both approach and avoidance crafting behaviours. Indeed, the present research built on COR (Hobfoll, 1989) to propose that perceptions of NS fit and DA fit would differentially affect job crafting behaviours. Such a theoretical proposition had not been made in the literature, which had not accounted for the distinctive features of NS fit and DA fit (e.g., opposite need fulfilment processes) in making predictions regarding the effect of PJ fit on job crafting behaviours. (e.g., Tims & Bakker, 2010; Zhang & Parker, 2019). It may thus come as no surprise that Dust and Tims (2019, p. 20) recently stated: “the integration of person-environment fit theory as it relates to job crafting is *oversimplified* [italics added]”. Although Dust and Tims’ (2019) statement was made in the context of a study conducted in the indirect fit research paradigm, their comment may also apply to the perceived fit research paradigm. From an empirical perspective, the effects of PJ fit on both approach and avoidance crafting behaviours had “not been investigated” (Zhang & Parker, 2019, p. 15) prior to the present research.

In terms of findings, the present research contributes to the literature by showing that DA fit and NS fit may differentially predict job crafting behaviours. Indeed, consistent with hypothesized effects, the results of the present research showed that NS fit facilitated, rather than inhibited, approach crafting behaviours, while it bore no effect on avoidance crafting behaviours. In contrast, DA fit inhibited both approach and avoidance crafting behaviours. These findings are inconsistent with the proposition that a lack of *both* DA fit and NS fit stimulates job crafting behaviours (Tims et al., 2016; Tims & Bakker, 2010; Zhang & Parker, 2019).

Observing that lower DA fit perceptions stimulate job crafting behaviours matches with the COR perspective (Hobfoll, 1989) that employees might be willing to alter their job situation to avoid losing resources when those resources are threatened. As developed in the present research, not possessing the abilities needed to meet job requirements may conceivably lead employees to fear resource loss, and this may, in turn, result in a drive to alter DA fit via job crafting behaviours. This finding makes an empirical contribution that is consistent with the propositions made by Tims and Bakker (2010) and Zhang and Parker (2019). As the effect of lower DA fit perceptions on job crafting behaviours aligns with existing propositions, I will not elaborate further on this point and will now discuss in more depth the finding that NS fit (and not the lack thereof) related to increased approach crafting behaviours in the present research.

From a theoretical perspective, observing that approach crafting behaviours are facilitated by NS fit is coherent with COR (Hobfoll, 1989), as argued in Chapter 4. More precisely, COR (Hobfoll, 1989) posits that those with greater resources are more capable of resource gain. Providing that (a) perceived NS fit reflects the possession of resources (see Chapter 4) and that (b) approach crafting behaviours target the acquisition of resources (also see Chapter 4), it makes sense to have found NS fit as a condition that facilitates, rather than inhibits, approach crafting behaviours. Importantly, this finding is not compatible with COR only but also with the revised version of the JD-R model (Bakker & Demerouti, 2014). This model advances that the presence of job resources may facilitate work engagement, in turn resulting in the acquisition of resources through job crafting behaviours. Moreover, the findings of the present research align with the broaden-and-build theory (Fredrickson, 2001), which highlights that positive emotions may stimulate people thought-action repertoires and the building of resources. Indeed, as perceived NS fit is related to positive affective experiences (e.g., Edwards et al., 2006; Vleugels et al., 2018), it seems logical that positive emotions resulting from NS fit might

be associated with approach crafting behaviours and the acquisition of resources. Finding that NS fit facilitates approach crafting behaviours contributes to the literature in an important way. More precisely, it conflicts with the shared view amongst scholars (Tims et al., 2016; Tims & Bakker, 2010; Zhang & Parker, 2019) that job crafting behaviours should follow from a lack of NS fit. It is thus critical that more research on this specific relationship is carried out.

While the aforementioned supporting arguments are mainly theoretical, the pragmatic question of *why* employees may engage in approach crafting behaviours when NS fit is already established may be raised. Indeed, do employees not stop acquiring resources when their needs are satisfied? Applying COR (Hobfoll, 1989) to PE fit provides a potential answer to this question. Indeed, COR is compatible with viewing the attainment of NS fit as not an end in itself. More precisely, COR suggests that people are driven to grow their resource pool continuously because extra resources may allow for dealing with potential future loss (Hobfoll, 1989). Hence, although employees may already possess things they need or desire, they may be willing to get more of them. This perspective is consistent with results obtained by Edwards et al. (2006), who showed that an extra supply of desirable job characteristics such as salary, prestige or vacation time (in comparison with individual needs) was not perceived as a mis-fitting situation. In fact, the potential drive that people might have for acquiring supplies exceeding their needs was suggested in the PE fit literature forty years ago by Harrison (1978). He then indicated that *security motives* may encourage people to build reservoirs of desirable job supplies.

Overall, in distinguishing between NS fit and DA fit, and between approach and avoidance crafting behaviours, the present research provides findings that contribute to clarifying the relationship between PJ fit perceptions and job crafting behaviours and to better understanding the motives of job crafting behaviours (e.g., Bindl et al., 2019). For

instance, as avoidance crafting behaviours were found to only stem from lower DA fit perceptions (and not from NS fit perceptions), this suggests that employees do not engage in avoidance crafting behaviours to improve NS fit but do so to alter DA fit. Likewise, it may be interpreted that employees may engage in approach crafting behaviours to both (a) acquire resources and build resources surpluses, and (b) alter DA fit.

8.3.2 *Boundary Condition of Job Crafting Behaviours*

The present research contributes to the literature by identifying a condition that may affect the accuracy of predictions made within job crafting theory, that is a boundary condition (e.g., Busse et al., 2017; Gonzalez-Mulé & Aguinis, 2018). Indeed, it was found that NS fit moderated the negative effects of perceived DA fit on both approach and avoidance crafting behaviours, such that these effects were stronger when NS fit was high. Importantly, the findings of the present research further suggest that employees who perceive very low NS fit perceptions (as opposed to those perceiving NS fit) may not engage in more approach and avoidance crafting behaviours when their DA fit worsens. Thereby, the present research contributes to the literature by answering the call made by Zhang and Parker (2019) to identify new job crafting boundary conditions.

Identifying NS fit as condition that may affect the relationship linking DA fit to approach crafting behaviours is consistent with COR (Hobfoll, 1989). Indeed, acquiring resources, and engaging in approach crafting behaviours to this end (e.g., seeking resources), may be facilitated by the possession of resources. As posited by COR (Hobfoll, 2001, p. 349), “those with greater resources are [...] more capable of orchestrating resource gain. Conversely, those with fewer resources are [...] less capable of resource gain”. Providing that NS fit was theorised to indicate resource possession, it seems rather logical that the greater NS fit, the easier gaining resources should be. When employees experience a pronounced lack of NS fit, they may not have sufficient resources, or job supplies, to engage in approach crafting behaviours. For instance, it is

conceivable that employees whose needs are thwarted (e.g., lack of autonomy, social relationships, supervisor support or task variety) may hardly seek challenges or resources if their job conditions do not allow them for so doing. Hence, although lower DA fit perceptions may be a trigger to engaging in approach crafting behaviours, employees not experiencing NS fit may just not be in a position to engage in such behaviours when they want to alleviate a lack of DA fit.

While COR (Hobfoll, 1989) is centred around the notion of *resources* and does not make any prediction about the avoidance of demands, it may be argued that the possession of resources may also be a prerequisite for engaging in avoidance crafting behaviours, as developed in Chapter 4. Indeed, avoiding job demands may also plausibly be fuelled by the possession of resources. When an employee strongly agrees with an item such as “I make sure that my work is mentally less intense” (Petrou et al., 2012), the question of “how” might be asked. Importantly, job crafting behaviours are not formal job change negotiation behaviours (Zhang & Parker, 2019). This suggests that “making one’s work less intense” might be facilitated by (a) colleagues sometimes accepting to take over a bit of the workload, (b) having enough autonomy, control or power, which may allow for postponing deadlines and/or altering the workload, (c) having one’s boss’ informal approval or benefiting from their tolerance, (d) or other conditions. Each of these conditions may be seen as resources, as they are functional in achieving personal goals (i.e., avoidance goals). Consequently, without job supplies or resources, employees may hardly engage in avoidance crafting behaviours. Interestingly, Tims and Bakker (2010) had proposed that job autonomy and task variety could be key boundary conditions of job crafting behaviours. Yet, they did not identify resources in general, and more precisely NS fit, to be such a condition. In this regard, the present research makes an important contribution to the literature. Indeed, it brings preliminary support to viewing perceived NS fit as a boundary condition of the relationship linking DA fit to job crafting

behaviours. Further research on this relationship is needed to evaluate whether this potential boundary condition holds across samples and organisational contexts.

Interestingly, plotting of the moderating effect of NS fit on the relationship linking perceived DA fit to avoidance crafting behaviours allowed for observing an unexpected result. More precisely, Figure 7.3 showed that employees who perceived a high DA fit but a low NS fit engaged in more avoidance crafting behaviours than employees who experienced the same high DA fit and a high NS fit. While more research would be needed to assess the robustness of this finding (e.g., using a balanced design), this finding could bear important implications regarding the motives driving avoidance crafting behaviours. Indeed, consistent with this finding, it would not be unreasonable to hypothesize that avoidance crafting behaviours might not always target an *improvement* in DA fit. For instance, from a typical social exchange theory perspective (e.g., Cropanzano & Mitchell, 2005), it may be thought that avoidance crafting behaviours could be used to *purposely* hinder DA fit and harm the organisation when the organisation fails to provide its employees with adequate job supplies. From an employee's viewpoint, the question of "why fulfil the job requirements when the job does not fulfil mine?" could be raised. Interestingly, withdrawal-oriented behaviours may be considered counterproductive work behaviours when they are enacted to harm the organisation (Spector et al., 2006). Hence, avoidance crafting behaviours could theoretically be defined as such behaviours if they aimed to hurt the organisation. (e.g., Fox et al., 2001; Spector et al., 2006).

Overall, finding that perceived NS fit might be a key boundary condition of job crafting behaviours fills an important gap in the literature. It also further implies that lower PJ fit perceptions may not systematically trigger higher levels of job crafting behaviours. Also, the interaction between NS fit and DA fit in predicting job crafting behaviours, and avoidance crafting behaviours, in particular, raises questions about employees' motives to engage in job crafting behaviours when NS fit is low and DA fit

is high. The investigation of this interaction, as well as its findings, also contribute to filling a gap within the PE fit literature. This gap pertains to a better understanding of how the interaction between different types of fit affects individual outcomes (e.g., Kristof-Brown & Guay, 2011).

8.3.3 Job Crafting Behaviours and Change in PJ fit Perceptions

The present research offers new insights on the relationship linking job crafting behaviours to change in PJ fit perceptions. More precisely, it was found that, controlling for initial PJ fit perceptions, approach crafting behaviours were associated with a positive change in NS fit and DA fit, while avoidance crafting behaviours were associated with a negative change in both of these PJ fit perceptions. These two findings contribute to starting filling consequential research gaps.

While the positive impact of approach crafting behaviours on change in PJ fit perceptions is consistent with empirical findings in the literature (Kooij et al., 2017; Lu et al., 2014), the findings of the present research add to the existing literature in at least two ways. First, the present research is the only study to date to provide evidence that approach crafting behaviours positively affect *intra-individual change* in PJ fit perceptions. Indeed, the two studies conducted by Kooij et al. (2017) and Lu et al. (2014) measured residual-change as opposed to intra-individual change in PJ fit perceptions (e.g., Henk & Castro-Schilo, 2016). The use of residual-change modelling in investigating the relationship between change in PJ fit perceptions and job crafting behaviours may be seen as a strong limitation because this relationship is fundamentally intra-individual. Indeed, PJ fit perceptions might deteriorate for some people, while they may improve for others, and these are those within-person differences that should be studied in relation to job crafting behaviours. As Selig and Little (2013, p. 267) state:

the panel mode [...] lacks an explicit theory of change, or at least that the model's theory of change may not align with the researcher's implicit theory of change

[...] The problem with autoregressive effects is that they describe stability in individual differences but do not describe within-person stability.

Consequently, the present research makes an important contribution to the literature by showing that approach crafting behaviours may affect “true” within-person change in PJ fit perceptions, rather than change *predicted* by autoregressive effects, which is not the type of change that should theoretically be studied when job crafting behaviours are considered from an individual standpoint.

Second, while the present research used measures of approach crafting behaviours that fell within the JD-R framework (Demerouti et al., 2001; Tims & Bakker, 2010), Kooij et al. (2017), as well as Lu et al. (2014), measured approach crafting behaviours using different conceptual lenses. They respectively conceptualised approach crafting behaviours as “crafting towards strengths and interests” and as “physical and relational job crafting”, as in the JCM (Wrzesniewski & Dutton, 2001). Although using different conceptualisations of approach crafting behaviours should not result in very different findings (i.e., all these behaviours are approach-oriented and aim to alter the job situation), the present research nonetheless contributes to the literature by using a job crafting framework (i.e., JD-R) that has been underexploited in relation to change in PJ fit perceptions. While Tims and Bakker (2016) did use the JD-R framework in studying change in perceived NS fit and DA fit, their study (a) did not distinguish between approach and avoidance crafting behaviours, (b) was based on residual-change (i.e., autoregressive effects), and (c) pertained to weekly change and temporally-bound PJ fit perceptions (weekly-perceptions). Overall, the present research provides preliminary findings that extend our knowledge of the impact of approach crafting behaviours on change in PJ fit perceptions.

In addition, the present research is the first to offer evidence that avoidance crafting behaviours have a negative impact on change in PJ fit perceptions. This

relationship had not been investigated prior to the present research. Importantly, the findings of the present research are inconsistent with the perspective that avoidance crafting behaviours may allow for an increase in perceived DA fit, as suggested by Tims et al. (2016). As developed in Chapter 4, a potential explanation to this phenomenon is that job crafting behaviours do not target a permanent change in the job with formal job change negotiation (e.g., Zhang & Parker, 2019). As such, avoided job demands may accumulate, rather than disappear from one's job duties. These avoided job demands could in turn adversely affect employees, who might increasingly struggle to meet them, resulting in detrimental effects on perceived DA fit and NS fit.

8.3.4 Change in PJ Fit Perceptions through Job Crafting Behaviours

The findings of the present research indicate that perceived NS fit and DA fit may develop through job crafting behaviours, providing support for their intertwined nature. The finding that lower DA fit perceptions stimulate job crafting behaviours, which may then lead to a change in this type of fit, is consistent with theory of PE fit and job stress and its notion of *coping mechanisms* (Harrison, 1978). Indeed, this theory posited that employees could be willing to reduce a lack of DA fit behaviourally through coping mechanisms, such as “asking a supervisor to reduce the work demands” or “seeking training to improve [...] abilities to handle the work load” (Harrison, 1978, p. 178). This finding is also compatible with the theory of self-regulation applied to the PE fit framework (Johnson, Taing, et al., 2013), which indicates that corrective behaviours targeting fit should follow from the perception of a lack of fit. Importantly, this finding aligns with the job crafting proposition made by Tims and Bakker (2010). However, and contrary to existing research, the present research is the first to empirically test that a change in perceived DA fit occurs through job crafting behaviours. Furthermore, the present research also contributes to the literature by providing theoretical explanations to

this relationship within the specific research paradigm of perceived fit (e.g., Kristof-Brown & Billsberry, 2013).

Moreover, it was found that perceived NS fit also changed through approach crafting behaviours, consistent with a virtuous circle of supplies acquisition and the COR concept of resource caravans (Hobfoll, 2001). Consequently, the present research contributes to the literature by empirically showing that PJ fit perceptions may be self-regulated and that their change may potentially be affected by different fit conditions and motives. More precisely, and as theorised, reaching DA fit could be underpinned by the desire to protect resources; while the development of NS fit could relate to the motivation to build resource surpluses.

Importantly, the present research contributes to the literature by showing that perceived NS fit and DA fit may mutually influence each other in their development and through job crafting behaviours. Specifically, approach crafting behaviours resulting from NS fit did not affect change in NS fit only, but also change in DA fit. Likewise, job crafting behaviours stemming from lower DA fit perceptions did not affect change in DA fit only, but also change in perceived NS fit. For this latter relationship, these behaviours were more frequent when perceived NS fit was high. The role of NS fit in facilitating change in PJ fit perceptions had not been investigated prior to the present research.

In addition, theory usually points to a positive effect of DA fit on change in NS fit (e.g., Harrison, 1978; Johnson, Taing, et al., 2013; Yu, 2016), reflecting the instrumental perspective that employees may be driven to achieve DA fit in order to benefit from an increase in job rewards (e.g., increase in pay following meeting job demands). Nevertheless, the potential theoretical effect of NS fit on a positive change in DA fit has not, to the best of my knowledge, drawn research attention. Therefore, the present research contributes to the literature by developing and supporting the perspective that perceived NS fit may also facilitate reaching DA fit. This reverse perspective is rather

sensible. For instance, workers may use their social job supplies to learn about the job and in turn better meet job demands. While it could be argued that “supply” does not equate with “NS fit”, it could also be counter argued that, as someone is perceiving an increase in an overall perception of NS fit, this person is also likely to benefit from greater job supplies. As stated by Cable and DeRue (2002, p. 877), “needs-supplies fit perceptions relate to *the total set* of returns that people receive from their jobs” (italics added). Reflecting the mutual influence that perceived NS fit and DA fit have in their change, a look at Table 7.3 will show that change in perceived NS fit was, in the present study, significantly correlated with change in perceived DA fit.

Although the following is a minor contribution, the findings of the present research further support the necessity to distinguish between the two different conceptualisations of PJ fit (e.g., Caplan, 1987; Edwards, 1991). Indeed, clearly distinguishing between NS fit and DA fit in the present research resulted in contributing to the literature in several important ways. Future research focusing on *PJ fit* should thus avoid referring to this term without explicitly defining to which conceptualisation it refers, along with Edwards' (2008) recommendations.

8.4 Implications for Practice

8.4.1 Initial Perceived NS fit and Approach Crafting Behaviours

The present research findings indicate that perceived NS fit might be associated with approach crafting behaviours positively, and that these behaviours might in turn be related to a positive change in both perceived NS fit and DA fit. Importantly, perceived NS fit was not found to be associated with avoidance crafting behaviours. This suggests that providing employees with supplies matching their needs may put in motion a virtuous circle that may benefit both employees and organisations. For organisations, the potential benefit would result from an improvement of DA fit due to behaviours turned towards “doing more” or “doing better”. In fact, approach crafting behaviours have been related

to desirable outcomes such as increased job performance, work engagement and diminished turnover intentions (Rudolph et al., 2017). Hence, perceived NS fit may foster approach crafting behaviours, which in turn may allow for increasing DA fit in a *desirable way*. Organisations may consequently benefit from inquiring about their employees' needs and meeting them. Such inquiry may be done either informally by managers in daily conversations or formally in a process such as appraisal interviews (e.g., Meinecke et al., 2017).

8.4.2 Initial Perceived DA fit and Job Crafting Behaviours

According to the present research findings, a lack of skill or inappropriate job demands (lack of DA fit) could cause employees to avoid working on some of their prescribed tasks. In turn, avoidance crafting behaviours were found to negatively affect change in both perceived NS fit and DA fit. This finding suggests that avoidance crafting behaviours may be harmful to both individuals and organisations, in line with research showing that these behaviours result in increased strain, decreased job performance and satisfaction (Rudolph et al., 2017). Therefore, organisations could mitigate these behaviours, notably by facilitating DA fit. Nevertheless, it is worth highlighting that lower DA fit perceptions were also found to be associated with higher levels of approach crafting behaviours. Hence, it may be concluded that giving employees assignments that challenge their abilities may not necessarily bear negative consequences. In fact, findings from the present research suggest that a *reasonable* mismatch between employees' skills and job demands could positively affect change in PJ fit perceptions. This positive change could occur when approach crafting behaviours are encouraged (e.g., an open-door policy with frequent feedback given when asked) *and* avoidance crafting behaviours are mitigated (e.g., helping employees see job demands as an opportunity [cognitive crafting] rather than as an unmanageable condition leading to behavioural withdrawal). A reasonable mismatch between the skills of employees and their job demands could allow

employees to develop their self-efficacy when they improve DA fit (Bandura, 1991), and this could also result in a pleasant situation related to, or leading to, stimulation and growth (Harrison, 1978). Relatedly, a recent qualitative study highlighted that workers could indeed see misfit as an opportunity for growth and could make the “decision to ‘beat’ the misfit and become better or stronger as a result of it, usually through skill development” (Follmer et al., 2018, p. 452).

Importantly, a *small discrepancy* (Harrison, 1978), or a reasonable mismatch as previously stated, between personal skills and job demands could benefit individuals and organisations. As suggested by Harrison (1978), large discrepancies may likely bear detrimental effects on individuals with an increased level of strain. Not only have high-performance goals been related to depletion (Welsh & Ordóñez, 2014), but high workload has also frequently been related to burnout (Alarcon, 2011) and turnover intentions (Bowling et al., 2015). Thus, tasks that are exceedingly demanding in relation to abilities could result in diminished perceptions of PJ fit and an increase in withdrawal-oriented attitudes and behaviours. When job demands are not matching well with employees’ abilities, facilitating approach crafting behaviours may be of utmost importance for organisations. In addition, job crafting interventions (e.g., Gordon et al., 2018) that foster approach crafting behaviours could be set up in order to promote this type of behaviour in the workplace. However, seeing employees as agents of their fit with their jobs should not place the responsibility of skill development in the hands of employees only. This might indeed be a risk. As Harrison (1978, p.198) stated:

Another approach [...] would place much of the responsibility for reducing stress on the individual worker. By increasing the control workers have over their jobs, they can modify the demands of their jobs themselves to bring about a better fit with their individual preferences.

Rather than letting employees themselves adapt to job demands exceeding their abilities, job demands that are *reasonably* challenging employees' abilities could be determined during appraisal interviews (Meinecke et al., 2017), where performance goals might be discussed and agreed upon. This collaborative way of determining work goals being both interesting to employees and beneficial for organisations may increase intrinsic motivation (Chang & Lorenzi, 1983). Relatedly, it may be thought that approach crafting behaviours enacted to achieve DA fit could also be motivating because these behaviours are self-determined (Deci & Ryan, 2000). Hence, approach crafting behaviours could be a relevant complement to formal training activities when employees have to meet challenging job demands and to develop their skills. Research on the complementarity of both approaches is needed.

Finally, setting job demands that slightly exceed abilities may not be a “one-size-fits-all” solution for developing PJ fit perceptions, even when avoidance crafting behaviours are mitigated. For instance, job crafting behaviours have been shown, in general, to correlate negatively with age (Rudolph et al., 2017). Hence, rather than expecting older workers to engage in approach crafting behaviours when they experience a lack of DA fit, it might be relevant to foster approach crafting behaviours with an external drive, such as a job crafting intervention (Kooij et al., 2017). Relatedly, it could be sensible to keep discrepancies between abilities and job demands at a minimum level for older workers, as it may be best for them to fit the job tasks to their abilities (tasks tailored to their abilities) rather than the other way around (Truxillo et al., 2015). As stated by Zaniboni et al. (2014, p. 518) “it seems that older workers may not benefit from simply doing more tasks, but rather from opportunities to use their wide range of accumulated skills”. Overall, organisations may be willing to provide their employees with job supplies matching their needs and to assign them with job demands that do not deviate too much from their skills. Importantly, approach crafting behaviours should be encouraged.

8.5 Limitations of the Present Research

Although the present research makes important contributions to the literature by disentangling the complex relationship between change in PJ fit perceptions and job crafting behaviours using lagged data from two time points, it is not without its limitations. These are now discussed.

8.5.1 Research Design and Sample Characteristics

As self-reports were used for data collection, common method bias might have affected the present study (Podsakoff et al., 2003). However, it is worth noting that precautions were taken regarding the quality of data collected (e.g., attention-check items) and that the research design and the survey instrument itself should have minimized method bias (e.g., clear instructions, random ordering of items from different scales, temporal separation between predictor and criterion variables) (e.g., Podsakoff et al., 2003, 2012). Importantly, collecting data through the use of self-reports was appropriate for the present research, as perceived NS fit and DA fit are self-evaluations that pertain to the job situation. Furthermore, it was also appropriate to evaluate job crafting behaviours in self-reports because these behaviours are theoretically originating from fit perceptions. While using other-reports could have also been insightful for measuring job crafting, it was not possible to proceed with such a collection of data. Indeed, as job crafting behaviours may leverage a variety of social resources (e.g., supervisor(s) and colleague(s)), gathering other-reports would have necessitated, to be thorough, that these reports were collected for all the co-workers of each employee in the study sample. The present study sample did not satisfy such a data collection plan.

In order to carry out the present research, a two-wave, three-month lagged study was conducted, in accordance with previous studies suggesting that using such a time lag was appropriate for observing a variability in PJ fit perceptions (e.g., Lu et al., 2014; see Section 5.2 for more details). While using this time lag was indeed sufficient for obtaining

an intra-individual change in PJ fit perceptions, opting for a longer time lag may have also provided interesting insights into changes in PJ fit perceptions. It is also worth noting that the study of *change* in PJ fit perceptions in the present research was limited by the number of waves of data collection that was used (i.e., two). In this regard, intra-individual changes in PJ fit perceptions, and some of their proposed relationships with job crafting behaviours, could also benefit from being investigated with more waves of data collection, over a longer period of time, and different analytical techniques in future research. More precisely, modelling techniques that specifically target the study of intra-individual change with more than two time points, such as curve-of-factors (CUFFS) (e.g., Isirdia & Ferrer, 2018), or extensions of the LCS (e.g., Usami et al., 2015), could be used to further investigate some of the findings of the present research. For example, it might be insightful to measure PJ fit perceptions and job crafting behaviours at several occasions (e.g., four times, over one year), and to then analyse a model consisting of a latent slope and an intercept for each NS fit, DA fit, approach crafting behaviours, and avoidance crafting behaviours. Such a model would allow for a different examination of some of the relationships proposed in the present research, over a longer period of time and with a more fine-grained measure of change in PJ fit perceptions. For instance, in a CUFFS model, the slope of avoidance crafting behaviours could be specified to predict the slope of DA fit. If a significant negative effect were found, it would bring further support to the finding that avoidance crafting behaviours might negatively affect the development of PJ fit perceptions. More generally, a significant association (i.e., correlation) between the slope of DA fit and that of avoidance crafting behaviours would suggest that changes in these two constructs are intertwined. Conducting a two or three-year study with the use of such a model would bring insights into better understanding the development of PJ fit perceptions over the longer term, rather than over the shorter-term as in the present research. On a related note, a diary study (e.g., Ohly et al., 2010)

could also be used to examine the relationship between change in PJ fit perceptions and job crafting behaviours. However, carrying out such a study would be consistent with approaching PJ fit perceptions as states that reflect an evaluation of a fit situation that is very specific and time-bound (e.g., “today, my fit is...”) rather than as general perceptions of fit that are not time-bound. In this regard, findings obtained from such a study would complete, rather than “compete with”, those of the present research, which pertain to changes in general PJ fit perceptions.

With regard to the study sample that was used for the present research (i.e., a sample of US workers recruited from MTurk), several potential limitations should be mentioned. First, it is important to note that the MTurk US population does not equate the US population, as the former is not fully representative of the latter (Keith et al., 2017). Second, conclusions derived from the use of MTurk samples are preliminary, as ongoing research using these samples add to our understanding about the generalisability of findings obtained with such samples. For instance, it was recently found that people on MTurk may experience lower levels of subjective well-being than other survey participants (Stone et al., 2019), and higher levels of negative affectivity than people in the general population (McCredie & Morey, 2019). This result could potentially limit the generalisability of the present study findings, as it may not be excluded that people experiencing lower subjective well-being may, for example, be more inclined to engage in avoidance crafting behaviours. Third, it was also found that data collected on MTurk could be prone to misrepresentation (MacInnis et al., 2020). Also, it cannot be excluded that some participants may extensively use MTurk in addition to working in an organisational setting. In this regard, people who regularly take survey studies on MTurk, sometimes referred to as “super Turkers”, could experience exposure effects, which may affect study results (Keith et al., 2017). Consequently, the use of MTurk comes with a set of potential limitations, which may affect the present study findings. Nevertheless,

research carried out using this online platform presents noticeable strengths (see Section 5.3). Hence, despite being associated with several potential limitations, the use of MTurk is considered to be a satisfactory alternative to collecting data from other typical survey sources (Mortensen & Hughes, 2018), provided that precautions are taken in relation to data collection (Keith et al., 2017). These were taken in the present research (e.g., use of attention-check items, recruitment of participants having a HIT approval rate of at least 95%, a reasonable monetary compensation with regard to other studies).

In any case, as with the majority of single studies, the findings of the present research should be approached with a certain caution. Most significantly, it would be necessary, for generalisability purposes, to replicate this study using other samples consisting of US workers, such as, for example, a sample consisting of US workers who are employed by a single organisation. So doing would allow for a better evaluation of the generalisability and the robustness of the present research findings. Indeed, the more studies are conducted, with the use of different samples and different populations from which these samples are drawn, the more accurate our view of the relationship between PJ fit perceptions and job crafting behaviours will be. Meta-analyses make it clear that single studies are generally not sufficient to accurately assess the strength of the association between several variables, as effect sizes between variables may be very different from one study to another (e.g. Oh et al., 2014).

Of note, the present study could also be replicated in other countries or cultures to evaluate the extent to which the present findings hold in these different contexts. As mentioned in the Methodology Chapter (Chapter 5), it would not be unreasonable to think that stress resulting from the fear of resource loss (here theorised to be related to a lack of DA fit) might be lower in contexts where employees benefit from increased job protection. As such, the effects of lower DA fit perceptions on job crafting behaviours could potentially be different from those obtained in the present study.

8.5.2 COR Theorisation and Findings Interpretation

The present research built on COR (Hobfoll, 1989) to inform research hypotheses and to interpret study findings. However, although all stated hypotheses were supported, more research is needed to assess the extent to which COR indeed explains the present study findings. For instance, *the fear of resource loss*, to which I have frequently referred (e.g., last paragraph), is only a *potential* explanation to the relationship linking lower DA perceptions to job crafting behaviours. More precisely, conducting a study exploring whether the relationship between PJ fit perceptions and job crafting behaviours is indeed underpinned by COR would be needed to evaluate whether COR appropriately explains this relationship. In this regard, it would be insightful to conduct a qualitative study and to ask employees about their experience of fit and how it specifically relates to job crafting behaviours. In so doing, it could also be explored whether (and how) their perceptions of PJ fit are associated with COR principles (e.g., are lower DA fit perceptions associated with the fear of resource loss?). Carrying out such a study, building on people's narratives, would also indirectly contribute to our knowledge of the role that cognitions, as opposed to emotions and affective experiences (Yu, 2009), may play in self-initiated change in PJ fit perceptions. Overall, the interpretation of the present research findings is preliminary, as more research would be needed to empirically pinpoint, and explore in detail, the psychological mechanisms underpinning the relationship between change in PJ fit perceptions and job crafting behaviours.

8.5.3 Conceptualisation of Job Crafting Behaviours

Another limitation of the present research pertains to the way job crafting behaviours were conceptualised. Indeed, these behaviours were not assessed holistically, as avoidance crafting behaviours were limited to the avoidance of hindering job demands (Zhang & Parker, 2019). Ideally, it could have also been insightful to measure behaviours relating to the avoidance of resources, which are defined as “actions to avoid aspects of

the job that lack positive resources” (Zhang & Parker, 2019, p. 6). However, it may be thought that the omission of such behaviours in the present research did not substantially affect its findings. First, avoidance resources and demands crafting behaviours have been theorised to be the components of a superordinate avoidance crafting behaviours construct (Zhang & Parker, 2019). This suggests that the removal of one of these components (e.g., avoidance resources crafting) *could* affect the measure of avoidance crafting behaviours, but it would not change the concept of avoidance crafting behaviours (Howell et al., 2007a). Second, research is lacking regarding the added value of studying these behaviours. For instance, Zhang and Parker (2019, p.6) exemplify avoidance resources crafting by the following situation “Alex rejects participating in projects that lack support or decision latitude”. Here, it could be reasoned that Alex is not avoiding resources only, but that he is also avoiding the demands associated with these projects (e.g., workload, increased efforts, etc.). Importantly, if job resources are lacking, it de facto implies that demands are prevalent. Furthermore, Zhang and Parker (2019) did not define avoidance resources crafting as behaviours taken to avoid resources alone, but to avoid *aspects of the job* that lack positive resources. Thus, it seems reasonable to assert that more research is needed to assess the necessity of measuring avoidance resources crafting behaviours.

The absence of distinction between seeking resources and seeking challenges could also be seen as a limitation, as the present research focused on approach crafting behaviours as a whole. In particular, it could be argued that it is necessary to distinguish between seeking resources and challenges because perceived DA fit could stimulate, rather than inhibit, seeking challenges. However, it could also be counter-argued that such a stimulation would more likely occur when employees are able to meet job demands *and* possess an extra set of abilities that are unused. Future research could, therefore, investigate this particular relationship, which was not the focus of the present research.

8.6 Future Research

Several future research directions, which directly address the limitations of the present study (e.g., generalisability), were communicated in the last section and in Section 8.3. Now, I will present avenues for future research that are derived from the present research, yet not directly related to its design or to the generalisability of its findings.

8.6.1 Change in PJ Fit Perceptions and Job Crafting Behaviours

An interesting direction for future research pertains to the relationship between perceived DA fit and avoidance crafting behaviours. More precisely, it was found that lower DA fit perceptions fit resulted in higher levels of both approach and avoidance crafting behaviours. Providing that these behaviours yielded opposite effects on change in PJ fit perceptions, it would be insightful to identify potential moderators of this relationship. More precisely, could there be conditions simultaneously inhibiting avoidance crafting behaviours stemming from, and fostering approach crafting behaviours resulting from, lower DA fit perceptions? Answering such a question would allow for further answering the call made by Zhang and Parker (2019) about the identification of new job crafting boundary conditions. Interestingly, positive affectivity might be such a condition. Indeed, positive emotions relate to acquiring resources (Fredrickson, 2001) and may thus relate to approach crafting behaviours. Relatedly, work engagement, a positive state of mind, has been shown to predict positively approach crafting behaviours and negatively avoidance crafting behaviours (e.g., Hakanen et al., 2018). Conversely, negative emotions might cause counterproductive behaviours (Spector & Fox, 2002), with which avoidance crafting behaviours could be associated given their withdrawal-oriented nature (e.g., Bruning & Campion, 2019; Spector et al., 2006). Hence, emotional valence could theoretically affect the relationship between DA fit and approach and avoidance crafting behaviours.

Another interesting avenue for future research could be to investigate how cognitive crafting relates to change in PJ fit perceptions. Not only is cognitive crafting an important dimension of job crafting (e.g., Wrzesniewski & Dutton, 2001; Zhang & Parker, 2019), but it is also an adjustment strategy that has been frequently referred to in theories pertaining to a drive to reach fit. For instance, it has been referred to as “defence mechanisms” in the theory of PE fit and job stress (Harrison, 1978) or “shifting the focus of attention” and “reevaluating resources” in COR (Hobfoll, 1989). It has also been apparent in the theory of work adjustment, where employees may re-evaluate their needs when they are confronted to a lack of NS fit (Dawis, 2005). Interestingly, Caplan (1987) suggested that employees may prefer to change their environment rather than themselves. While job crafting behaviours may target both a change in the environment (e.g., new tasks) and in the person (e.g., new skills), cognitive crafting is inherently self-change oriented. Hence, it would be insightful to investigate (a) whether cognitive crafting is indeed intertwined with a change in PJ fit perceptions, (b) whether cognitive crafting follows from unsuccessful job crafting behaviours. In line with this research direction, it was recently suggested that employees might cognitively reevaluate their job situation after unsuccessful adjustment strategies (Follmer et al., 2018). Investigating this causal relationship and its link with change in PJ fit perceptions is warranted to better understand how employees maintain or change their fit with their jobs.

8.6.2 Indirect PJ Fit Research Paradigm and Job Crafting Behaviours

While PE fit perceptions are more strongly related to employee attitudes and behaviours than indirect measures of PE fit (Kristof-Brown et al., 2005), it would nonetheless be informative to conduct research similar to the present one in the indirect fit research paradigm (Kristof-Brown & Billsberry, 2013). Indeed, indirect fit measures have been suggested to be less influenced by affective experiences than perceived fit measures (Edwards et al., 2006). As approach crafting behaviours may potentially be

fostered by positive affective experiences (Fredrickson, 2001), it could be interesting to see how approach crafting behaviours relate to a change in indirect measures of NS fit and DA fit.

Importantly, research in the indirect fit paradigm could be an opportunity to evaluate how the under or oversupply of certain job characteristics relate to job crafting behaviours. Edwards et al.'s (2006) findings suggest that an oversupply of some job characteristics is not necessarily perceived as a misfit (e.g., autonomy, task variety). Hence, the oversupply of some job characteristics could be desirable. In relation to the firstly presented contribution of the present research (Section 8.3.1), knowing more about the relationship between job crafting behaviours and NS fit pertaining to specific job characteristics over time may allow for clarifying whether employees (a) seek NS fit or supply surpluses (e.g., are employees looking for autonomy NS fit, or do they look for an oversupply of autonomy?), and (b) are more capable of crafting their jobs when they are oversupplied with these characteristics (e.g., are approach crafting behaviours facilitated when there is an excess of autonomy or task variety?) While Dust and Tims (2019) showed that an over and undersupply of task interdependence was related to avoidance crafting behaviours (i.e., decreasing hindering demands), this is to date the only job crafting study existing in the indirect fit research paradigm. More research is needed.

8.6.3 Broadening Job Crafting to Organisational Crafting

In terms of broadening the conceptual framework of the present research, future research could also focus on *organisational crafting*. Indeed, if job crafting is the conceptual sibling of PJ fit, then organisational crafting should be the conceptual sibling of PO fit. In this context, and given the importance of organisational value congruence in determining employee attitudes and behaviours (e.g., Kristof-Brown et al., 2005; Verquer et al., 2003), it may be interesting to evaluate the potential role of cognitive organisational crafting in the development of perceived organisational value congruence. In addition,

the behavioural aspect of organisational crafting could also be explored. Just as workers have been theorised to look for meaningfulness through job crafting (Wrzesniewski & Dutton, 2001), they could theoretically also look for meaningfulness when they engage in behaviours such as voice or taking charge (e.g., Parker & Collins, 2010), trying to make the organisation change in a way that is more aligned with their identity and which could satisfy their needs, such as a need for belongingness.

8.6.4 Methodological Considerations about Interactions between Latent Variables

Although the present research did not intend to make a methodological contribution per se, it nonetheless offers interesting insights for future research pertaining to the modelling of moderation in the SEM framework. Indeed, not only were moderation effects consistent across the mean-centred PI strategy (e.g., Marsh et al., 2004), the residual-centred PI strategy (e.g., Little et al., 2006) and the residual-centred product factor scores strategy, but the latter strategy allowed for assessing (a) interpretable conditional effects and (b) moderated mediation effects using R and the Lavaan package (Rosseel, 2012). Nonetheless, a potential weakness of this strategy might be factor score indeterminacy, or in lay terms the fact that factor scores may not truly reflect the factor from which they are extracted (e.g., Grice, 2001). While factor score indeterminacy appeared not to be a limitation for the present research, it is conceivable that it might be in other studies where measures might be less reliable, the sample size smaller and effect sizes amongst variables different. Research on the strengths and weaknesses of using the residual-centred product factor scores strategy is needed, as this underexploited analytical strategy could offer, despite some caveats, a promising avenue for investigating interaction effects in the SEM framework.

8.7 Conclusion

The present research is the first to examine the relationship between change in PJ fit perceptions and job crafting behaviours. In so doing, PJ fit perceptions were conceptualised as perceived NS fit and DA fit, and job crafting behaviours as approach and avoidance crafting behaviours. Deriving hypotheses from COR theory (Hobfoll, 1989), it was theorised that DA fit would negatively affect job crafting behaviours. Furthermore, it was expected that NS fit would positively affect approach crafting behaviours, while no hypothesis was made regarding its effect on avoidance crafting behaviours. As such, the present research proposed and tested that the sign of the effect of PJ fit perceptions on job crafting behaviours would actually depend on the conceptualisation of PJ fit perceptions. Consequently, it challenged the proposition that job crafting behaviours stem from a perceived lack of PJ fit only (Tims & Bakker, 2010; Zhang & Parker, 2019). Results obtained from the present research provided support for the expected relationships, notably by showing that approach crafting behaviours were differentially affected by perceived NS fit and DA fit. Importantly, the proposition that NS fit would strengthen (moderator role) the effect of DA fit on job crafting behaviours was supported. This suggests that perceived NS fit could be an important boundary condition of job crafting (Zhang & Parker, 2019).

In turn, and as expected, approach crafting behaviours had a positive effect on change in PJ fit perceptions, while avoidance crafting behaviours negatively affected change in perceived NS fit and DA fit. These findings bring further support to the necessity to foster approach crafting behaviours in the workplace, while mitigating avoidance crafting behaviours, which are generally related to undesirable employee outcomes (Rudolph et al., 2017; Zhang & Parker, 2019). Importantly, change in PJ fit perceptions occurred through job crafting behaviours, which brings supporting evidence for their intertwined nature. While this intertwined relationship had been suggested (Tims

& Bakker, 2010), the present research is the first to provide empirical support for this relationship. As importantly, results from the present research showed that perceived NS fit and DA fit changed in concert, a change in one type of fit being intrinsically related to a change in the other.

Overall, the present research makes important contributions to the literature, by filling theoretical and empirical gaps, and by offering insights into the intertwined nature of change in PJ fit perceptions and job crafting behaviours. More specifically, conditions that facilitate versus thwart the positive development of PJ fit perceptions were found for the specific study sample under investigation. These findings, should they be replicated in other studies, might bear critical implications for practice, as PJ fit perceptions are key determinants of employee attitude and behaviours (Kristof-Brown et al., 2005). Finally, the present research paves the way for future studies that aim to investigate the role of personal agency in change in PJ fit perceptions.

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Appendix A
DCU Research Ethics Committee Approval

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University



Mr Nicolas Jourdan
DCU Business School

16th March 2018

REC Reference: DCUREC/2018/043
Proposal Title: The impact of Person-Environment Fit on employee well-being
Applicant(s): Mr Nicolas Jourdan, Dr Janine Bosak, Dr Yseult Freaney

Dear Nicolas,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this project.

Materials used to recruit participants should state that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,

A handwritten signature in blue ink that reads "Dónal O'Gorman".

Dr Dónal O'Gorman
Chairperson
DCU Research Ethics Committee



Taighde & Nuálaíocht Tacaíocht
Ollscoil Chathair Bhaile Átha Cliath,
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Appendix B

Plain Language Statement (PLS)

B.1 PLS at T1



RESEARCH STUDY ON WORK ENVIRONMENT AND EMPLOYEE WELL-BEING

Dear Research Participants,

You are invited to participate in a research study on employee well-being in the workplace. Your participation will allow us to better understand how employees' opinions, attitudes, and behaviors towards their work environment relate to positive or negative experiences at work.

Your participation will involve the completion of a questionnaire, which will take you approximately 10-15 minutes to fill in.

In order to take part in this study, **you will need to be employed by an organization** (for example, a company, an institution or a public-sector organization) either on a **full-time or part-time basis**. **You cannot be unemployed or self-employed.**

You will be compensated \$0.80 upon completion of this first survey, which you can complete only once. Should you decide to participate, please note that I will invite you to fill in a second, shorter questionnaire in 3 months' time and you will then receive \$1.00 upon completion of the survey. If you have participated in both surveys, you will then receive an invitation to participate in the third and final survey in 6 months' time and you will be compensated \$1.30 for the completion of this survey.

All information collected will be securely stored at DCU. Only the researchers will get access to the data that you will provide. In addition, data compiled from this study will only be reported in an aggregated form and your information will remain confidential. Confidentiality will be assured within the limitation of the law (for example, it is possible for data, as per law, to be subject to subpoena). In order to contact you for the follow-up surveys in 3 months' time and 6 months' time respectively, your Mturk workerID (anonymized Mturk identifier) will be kept on our research database file until the project ends in 6 months. Please note that this information will be disposed of at the end of the research project. Your participation in the study is voluntary and it is possible to withdraw from the study at any point.

To participate in this study, you will be required to take the following steps:

- Fill in the survey
- Enter the code (secret key) that you will get upon survey completion in the space provided when you submit your HIT

Please note that only those entering the code given upon survey completion will be compensated.

If you have any questions regarding this survey, or the progress of our research, please email us at nicolas.jourdan2@mail.dcu.ie. If you have any concerns about the study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel +353 (0)1-7008000.

Thank you for participating in this research project, which is critical to the completion of my PhD degree. I greatly appreciate your time and conscientiousness in filling in my research survey.

Yours sincerely,

Nicolas Jourdan

Nicolas Jourdan (PhD candidate)
Dublin City University, Ireland

Dr. Janine Bosak
Dublin City University, Ireland

Dr. Yseult Freeney
Dublin City University, Ireland

Research supported by the Irish Research Council

ENTER THE STUDY

To participate in the study and be compensated, please click "**I agree**" if you **agree with the above information/conditions, are at least 18 years old** and are **working full-time or part-time at an organization** (i.e., you are not self-employed or unemployed). Otherwise, click "I disagree" not to participate.

- I agree
 I disagree

B.2 PLS at T2



RESEARCH STUDY ON WORK ENVIRONMENT AND EMPLOYEE WELL-BEING

Dear Research Participant,

You were invited 3 months ago to participate in a research study on well-being in the workplace. Now we would like to invite you to participate in the second phase of our project. We kindly ask you to complete the follow-up survey, which will take approximately 10 minutes to fill in.

Your participation will allow us to better understand how employees' opinions, attitudes, and behaviors towards their work environment relate to positive or negative experiences at work.

In order to take part in this study, **you will need to be employed by an organization** (for example, a company, an institution or a public-sector organization) either on a **full-time or part-time basis. You cannot be unemployed or self-employed.**

You will be compensated \$1.00 upon completion of this survey, which you can complete only once. If you decide to participate, please note that we will send you another invitation to complete a final survey in 3 months' time. You will be compensated \$1.30 for the completion of the final survey.

All information collected will be securely stored at DCU. Only the researchers will have access to the data that you provide. In addition, data compiled from this study will only be reported in an aggregated form and your information will remain confidential. Confidentiality will be assured within the limitations of the law (for example, it is possible for data, as per law, to be subject to subpoena). In order to invite you to participate in our final follow-up study in 3 months' time, we will keep your Mturk worker ID (Anonymized Mturk Identifier) in our research data file. This information will be destroyed at the end of the research project (i.e., in 3 months' time). Your participation in the study is voluntary and it is possible to withdraw from the study at any point.

To participate in this study, please:

1. Provide your consent at the bottom of this page
2. Proceed to the survey and complete all questions
3. Enter the code that you will get upon survey completion in the space provided when you submit your HIT

Please note that only those entering the code given upon survey completion will be compensated.

If you have any questions regarding this survey, or the progress of our research, please email us at nicolas.jourdan2@mail.dcu.ie. If you have any concerns about the study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel +353 (0)1-7008000.

Thank you for participating in this research project, which is critical to the completion of my PhD degree. I greatly appreciate your time and conscientiousness in filling in my research survey.

Yours sincerely,

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Dublin City University, Ireland

Dr. Janine Bosak
Dublin City University, Ireland

Dr. Yseult Freaney
Dublin City University, Ireland

Research supported by the Irish Research Council

ENTER THE STUDY

To participate in the study and be compensated, please click "**I agree**" if you **agree with the above information/conditions, are at least 18 years old and are working full-time or part-time at an organization** (i.e., you are not self-employed or unemployed). Otherwise, click "I disagree".

- I agree
 I disagree

B.3 PLS at T3



RESEARCH STUDY ON WORK ENVIRONMENT AND EMPLOYEE WELL-BEING

Dear Research Participant,

You were invited 3 months ago to participate in the second phase of our research study on well-being in the workplace. Now we would like to invite you to participate in the third phase of our project. We kindly ask you to complete the follow-up survey, which will take approximately 10 minutes to fill in.

Your participation will allow us to better understand how employees' opinions, attitudes, and behaviors towards their work environment relate to positive or negative experiences at work.

In order to take part in this study, **you will need to be employed by an organization** (for example, a company, an institution or a public-sector organization) either on a **full-time or part-time basis**. **You cannot be unemployed or self-employed.**

You will be compensated \$1.30 upon completion of this survey, which you can complete only once.

All information collected will be securely stored at DCU. Only the researchers will have access to the data that you provide. In addition, data compiled from this study will only be reported in an aggregated form and your information will remain confidential. Confidentiality will be assured within the limitations of the law (for example, it is possible for data, as per law, to be subject to subpoena). In order to understand how aggregated data changed over the last 6 months, we will keep your Mturk worker ID (Anonymized Mturk Identifier) in our research data file for one more month, after which this information will be destroyed. Your participation in the study is voluntary and it is possible to withdraw from the study at any point.

To participate in this study, please:

1. Provide your consent at the bottom of this page
2. Proceed to the survey and complete all questions
3. Enter the code that you will get upon survey completion in the space provided when you submit your HIT

Please note that only those entering the code given upon survey completion will be compensated.

If you have any questions regarding this survey, or the progress of our research, please email us at nicolas.jourdan2@mail.dcu.ie. If you have any concerns about the study and wish to contact an independent person, please contact: The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel +353 (0)1-7008000.

Thank you for participating in this research project, which is critical to the completion of my PhD degree. I greatly appreciate your time and conscientiousness in filling in my research survey.

Yours sincerely,

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Dublin City University, Ireland

Dr. Janine Bosak
Dublin City University, Ireland

Dr. Yseult Freaney
Dublin City University, Ireland

Research supported by the Irish Research Council

ENTER THE STUDY

To participate in the study and be compensated, please click "I agree" if you **agree with the above information/conditions, are at least 18 years old** and are **working full-time or part-time at an organization** (i.e., you are not self-employed or unemployed). Otherwise, click "I disagree".

- I agree
 I disagree

Appendix C

Survey Questionnaire

'###' indicates comments to this thesis' reader.

PRELIMINARY INFORMATION

What is your employment status? ### (time 1, time 2, time 3)

- I am employed full-time at an organization
- I am employed part-time at an organization
- I am self-employed
- I am unemployed

How long have you been working at your current organization? (years and months)
(time 1)

How long have you been employed in your current position? (years and months)
(time 1)

How long have you been working with your current supervisor? (years and months)
(time 1)

How long have you been working within your current work-group? (years and months)
(time 1)

Do you manage people in your job? ### (time 1, time 2, time 3)

- Yes, I manage people in my job
- No, I do not manage people in my job

CHANGE IN EMPLOYMENT

Please answer "yes" or "no" to each of the following questions, which pertain to possible changes in your employment over the past three months. ### (time 2, time 3)

Please note that:

The term 'co-workers' refers to people working in your immediate work-group. The term 'direct reports' refers to people working directly under your supervision. ### only displayed for participants managing people.

Three months ago...

- ... I was working at the same organization (yes, no)
- ... I was working in the same position (yes, no)

- ... I was working under the same supervisor (yes, no)
- ... I was working with the same co-workers (yes, no)
- ... I was working with the same direct reports (yes, no) ### only displayed for participants managing people

At time 2, if “no” was answered to “three months ago I was working at the same organization”, then the following question was displayed:

What are the reasons that contributed to you leaving your previous organization?

Open field

At time 3, if “no” was answered to any of the item, then the following question was displayed:

What are the reasons that contributed to you experiencing a change in employment?

Open field

YOUR WORK ENVIRONMENT ### (items from all scales were mixed in random order)

At time1, the following instructions were used:

Following are several statements about you and your work environment. Please indicate your level of agreement with each of these statements, ranging from "strongly disagree" to "strongly agree". ### (five-point scale)

Please note that:

Co-workers refers to people working in your immediate work-group. *Values* refers to things that are important to you (for example, you may value honesty, fairness, helping others, taking risk, security, competitiveness, etc.)

At time 2 and 3, the following instructions were used:

Several statements about you and your work environment will follow. Please indicate your level of agreement with each of these statements on a scale ranging from “strongly disagree” to “strongly agree”. ### (five-point scale)

Please note that:

The term ‘*co-workers*’ refers to people working in your immediate work-group. The term ‘*values*’ refers to things that are important to you (for example, you may value honesty, fairness, helping others, taking risk, security, competitiveness, etc.)

Person-Job Needs-Supplies fit (Cable & DeRue, 2002)

- The attributes that I look for in a job are fulfilled very well by my present job
- There is a good fit between what my job offers me and what I am looking for in a job
- The job that I currently hold gives me just about everything that I want from a job

Person-Job Demands-Abilities fit (adapted from Cable and Judge [1996] Saks and Ashforth [1997], as in Resick et al. [2007])

- I believe my skills and abilities match those required by the job
- My job performance is hurt by a lack of expertise on the job
- My knowledge, skills and abilities match the requirements of the job
- I possess the skills and abilities to perform this job

Person-Organization value-congruence (Cable & DeRue, 2002)

- The things that I value in life are very similar to the things that my organization values
- My personal values match my organization's values and culture
- My organization's values and culture provide a good fit with the things that I value in life

Person-Group value-congruence (adapted from Cable and DeRue [2002], substituting "organization" for "co-workers", as in other PE fit studies)

- The things that I value in life are very similar to the things that my co-workers value
- My personal values match my co-workers' values
- My co-workers' values provide a good fit with the things that I value in life

Person-Supervisor value-congruence (adapted from Cable and DeRue [2002], substituting "organization" for "supervisor", as in other PE fit studies)

- The things that I value in life are very similar to the things that my supervisor values
- My personal values match my supervisor's values
- My supervisor's values provide a good fit with the things that I value in life

Task interdependence with co-workers (adapted from Pearce and Gregersen [1991], substituting "others" for "my co-workers"; taking the three highest factor loadings for each of the two dimensions of task interdependence - reciprocal interdependence and independence)

- I work closely with my co-workers in doing my work
- I frequently must coordinate my efforts with my co-workers

- My own performance is dependent on receiving accurate information from my co-workers
- I work fairly independently of my co-workers in my work
- I can plan my own work with little need to coordinate with my co-workers
- I rarely have to obtain information from my co-workers to complete my work

Task interdependence with supervisor (adapted from Pearce and Gregersen [1991], substituting "others" for "my supervisor"; taking the three highest factor loadings for each of the two dimensions of task interdependence - reciprocal interdependence and independence)

- I work closely with my supervisor in doing my work
- I frequently must coordinate my efforts with my supervisor
- My own performance is dependent on receiving accurate information from my supervisor
- I work fairly independently of my supervisor in my work
- I can plan my own work with little need to coordinate with my supervisor
- I rarely have to obtain information from my supervisor to complete my work

Job autonomy (Idaszak & Drasgow, 1987)

- The job gives me almost complete responsibility for deciding how and when the work is done
- The job gives me considerable opportunity for independence and freedom in how I do the work
- The job gives me a chance to use my personal initiative and judgment in carrying out the work

If participants replied "Yes, I manage people in my job" at the beginning of the questionnaire, they were displayed the following statement and the items from two following scales were mixed:

At time 1, the following instructions were used:

Previously, you replied that you were managing people in your job... Could you please tell us more?

Following are several statements about you and the people who work directly under your supervision. Please indicate for each statement your level of agreement, ranging from "strongly disagree" to "strongly agree". ### (five-point scale)

Please note that:

Direct reports refers to people working directly under your supervision.
Values refers to things that are important to you (for example, you may value honesty, fairness, helping others, taking risk, security, competitiveness, etc.)

At time 2 and 3, the following instructions were used:

Earlier in this survey, you indicated that you manage people in your job.

Several statements about you and the people who work directly under your supervision fill follow. Please indicate your level of agreement with each of these statements on a scale ranging from “strongly disagree” to “strongly agree”. ###
(five-point scale)

Please note that:

*The term ‘direct reports’ refers to people working directly under your supervision.
The term ‘values’ refers to things that are important to you (for example, you may value honesty, fairness, helping others, taking risk, security, competitiveness, etc.)*

Supervisor-Followers value-congruence (adapted from Cable and DeRue [2002], substituting "organization" for "direct reports", as in other PE fit studies)

- The things that I value in life are very similar to the things that my direct reports value
- My personal values match my direct reports’ values
- My direct reports' values provide a good fit with the things that I value in life

Task interdependence with followers (adapted from Pearce and Gregersen [1991], substituting "others" for "my direct reports"; taking the three highest factor loadings for each of the two dimensions of task interdependence - reciprocal interdependence and independence)

- I work closely with my direct reports in doing my work
- I frequently must coordinate my efforts with my direct reports
- My own performance is dependent on receiving accurate information from my direct reports
- I work fairly independently of my direct reports in my work
- I can plan my own work with little need to coordinate with my direct reports
- I rarely have to obtain information from my direct reports to complete my work

HOW YOU FEEL ABOUT YOUR WORK ### (items from the engagement and burnout scales were mixed, and then items from the job satisfaction and intention to leave scales were mixed)

At time 1, the following instructions were used:

Following are several statements about how you feel about your work. Please indicate for each statement how often you have such feeling, ranging from "never" to "always".

(seven-point scale)

At time 2 and 3, the following instructions were used:

The following statements are about how you feel at work. Please indicate for each statement how often you have this feeling on a scale ranging from “never” to “always”.

(seven-point scale)

Work Engagement (Short UWES, Schaufeli et al. [2006])

- At my work, I feel bursting with energy
- At my job, I feel strong and vigorous
- I am enthusiastic about my job
- My job inspires me
- When I get up in the morning, I feel like going to work
- I feel happy when I am working intensely
- I am proud of the work that I do
- I am immersed in my work
- I get carried away when I am working

Burnout (MBI-GS, two core dimensions. Maslach et al. [1996])

- I feel emotionally drained from my work
- I doubt the significance of my work
- Working all day is really a strain for me
- I feel burned out from my work
- I have become less interested in my work since I started this job
- I have become less enthusiastic about my work
- I feel used up at the end of the workday
- I just want to do my job and not be bothered
- I feel tired when I get up in the morning and have to face another day on the job

- I have become more cynical about whether my work contributes anything

Attention-check item

Please choose “Always” to indicate that you are not a robot

At time 1, the following instructions were used:

Following are several statements about how you feel at/regarding your work. Please indicate for each statement your level of agreement, ranging from "strongly disagree" to "strongly agree". ### (five-point scale)

At time 2 and 3, the following instructions were used:

Several statements relating to how you feel about your work will follow. Please indicate for each statement your level of agreement on a scale ranging from “strongly disagree” to “strongly agree”. ### (five-point scale)

Job Satisfaction (Rothbard et al., 2005)

- In general, I am satisfied with my job
- All in all, the job I have is great
- My job is very enjoyable

Turnover intentions (Landau & Hammer, 1986)

- As soon as I can find a better job, I’ll leave my organization
- I am seriously thinking about quitting my job
- I am actively looking for a job outside my organization

YOUR BEHAVIOR AT WORK ### (items from all scales were mixed in random order)

At time 1, the following instructions were used:

Please read the following statements below and indicate how frequently you have engaged in these behaviours over the past 3 months. ### (five-point scale)

Over the past 3 months...

At time 2 and 3, the following instructions were used:

Please read the following statements below and indicate how frequently you have engaged in each of these behaviors over the past three months on a scale ranging from “never” to “very often”. ### (five-point scale)

Over the past three months...

Job Crafting (adapted from Petrou et al. [2012], stating the three-month period, and substituting "always" for "very often")

- ... I have asked others for feedback on my job performance
- ... I have asked colleagues for advice
- ... I have asked my supervisor for advice
- ... I have tried to learn new things at work
- ... I have asked for more tasks if I finished my work
- ... I have asked for more responsibilities
- ... I have asked for more odd jobs
- ... I have tried to ensure that my work is emotionally less intense
- ... I have made sure that my work is mentally less intense
- ... I have tried to ensure that my work is physically less intense
- ... I have tried to simplify the complexity of my tasks at work

Job Crafting (adapted from Slemp and Vella-Brodrick [2014], stating the three-month period, adding "I" and choosing over a five-anchor Likert scale instead of a six-anchor one)

- ... I have introduced new approaches to improve my work
- ... I have changed the scope or types of tasks that I complete at work
- ... I have introduced new work tasks that I think better suit my skills or interests
- ... I have chosen to take on additional tasks at work
- ... I have given preference to work tasks that suit my skills or interests
- ... I have thought about how my job gives me life purpose
- ... I have reminded myself about the significance my work has for the success of the organization
- ... I have reminded myself of the importance of my work for the broader community
- ... I have thought about the ways in which my work positively impacts my life
- ... I have reflected on the role my job has for my overall well-being
- ... I have made an effort to get to know people well at work
- ... I have organized or attended work related social functions
- ... I have organized special events in the workplace (e.g., celebrating a co-worker's birthday)
- ... I have chosen to mentor new employees (officially or unofficially)
- ... I have made friends with people at work who have similar skills or interests

Attention-check item

If you are not a robot, please choose "Never"

YOUR BEHAVIOR IN GENERAL

Following are several statements about your view of yourself. For each statement, please indicate your level of agreement, ranging from "strongly disagree" to "strongly agree". ### (time 1; five-point scale)

Proactive personality (Bateman and Crant [1993]; ten highest-loading items)

- I am constantly on the lookout for new ways to improve my life
- Wherever I have been, I have been a powerful force for constructive change
- Nothing is more exciting than seeing my ideas turn into reality
- If I see something I don't like, I fix it
- No matter what the odds, if I believe in something I will make it happen
- I love being a champion for my ideas, even against others' opposition
- I excel at identifying opportunities
- I am always looking for better ways to do things
- If I believe in an idea, no obstacle will prevent me from making it happen
- I can spot a good opportunity long before others can

PERCEIVED IMPORTANCE OF WORK

Following are several statements about the importance that work has in your life. Please indicate for each statement your level of agreement, ranging from "strongly disagree" to "strongly agree". ### (time 1; five-point scale)

Work centrality (Bal & Kooij, 2011)

- The major satisfaction in my life comes from my job
- The most important things that happen to me involve my work
- I have other activities more important than my work

DEMOGRAPHICS (time 1, time 2, time 3)

Please indicate your gender (Male, Female)

Please indicate your age (in years)

Please indicate your highest level of education (Some high school, High school diploma or the equivalent, Some college, Associate degree (for example, AA, AS), Bachelor degree (for example, BA, AB, BS), Master degree (for example, MA, MS, MSW, MBA), Professional degree (for example, MD, DDS, LLB, JD), Doctorate degree (for example, PhD, EdB)) ### Examples in brackets were introduced at time 2 and 3

Please indicate your occupation (list given by the U.S. Bureau of Labor Statistics (2016), consisting of Management, business and financial operations, computer and mathematical, architecture and engineering, life/physical/social science, community and social service,

legal, education/training/library, arts/design/entertainment/sports/media, healthcare practitioners and technical, healthcare support, protective service, food preparation and serving, building and grounds cleaning and maintenance, personal care and service, sales, office and administrative support, farming/fishing/forestry, construction and extraction, installation/maintenance/repair, production, transportation and material moving)

Appendix D

Sample Size Planning Analysis

This appendix gives detail about the model specification that was used for sample size planning. It also gives detail about model estimation. I will first explain how factor loadings and indicator residual variances were determined. First, it is important to note that the variance of an indicator may be explained by both the variance relative to the true score which this indicator measures, and the variance relative to residuals (e.g., specific and random indicator variance) (Bowen & Guo, 2011; Brown, 2015; Little, 2013). When the standardized loading of an indicator is squared, this value then represents the percentage of variance in this indicator that is explained by its associated factor, and may be seen as a reliability estimate (Brown, 2015). Using the scale developed by Cable and DeRue (2002) to measure perceived NS fit, and observing its (very) high reliability reported in different studies (e.g., Astakhova et al., 2014; Guay, 2013; Harold et al., 2016; Hinkle & Choi, 2009; Vogel & Feldman, 2009), expecting for each item a factor loading of .80 reflected a reasonable conservative strategy. Using the fixed factor method of scaling (i.e., setting the factor variance to 1), the indicator residual variances were specified to be .36 ($1 - [0.8 * 0.8]$), because the squared factor loading of an indicator summed with its residual variance is equal to 1 (Little, 2013).

Given that the perceived DA fit scale used by Resick et al. (2007) had a satisfactory reliability of $\alpha = .72$, each item factor loading was set to .70 and indicator residual variance was specified to be .51 for each indicator ($1 - 0.7 * 0.7$). Looking at empirical studies using the remaining present research scales (i.e. scales measuring seeking resources, seeking challenges, reducing demands, proactive personality and job autonomy), the reliability estimates of these scales (e.g., Idaszak & Drasgow, 1987; Petrou & Demerouti, 2015; Seibert et al., 1999) suggested that setting all indicator

loadings to .7 for each factor and the residual variance to .51 for each indicator was in line with a reasonable conservative strategy.

In accordance with longitudinal study designs, correlated errors should be specified between the same items of a construct at T1 and T2 (e.g., Little, 2013). However, specifying the values of correlated errors was very difficult, as studies typically do not communicate on such details (item-level or indicator-level information are rarely, if ever, given). Therefore, these were set to 0, although it inadequately simplified model specification. Importantly, association between factors could be set with correlational values, as these factors were specified to have a variance of 1. The information that was used for determining correlations amongst factors is provided in Table D.1. The resulting correlation matrix is presented in Table D.2. Finally, figures obtained from the Monte Carlo analysis (explained in Section 5.5.2) are presented in Figures D.1 and D.2.

Table D.1. Inter-construct correlations informing the Monte Carlo study for determining the minimum sample size required

Construct A	Construct B	Correlation A - B	Source and rationale
Perceived NS fit T1	Perceived DA fit T1	.5	Badger Darrow and Behrend (2017). Cross-sectional correlation of .5 between perceived NS fit and DA fit in one MTurk sample. Harold et al. (2016) found a correlation of .6 in the same type of sample. A correlation of .5 was used as a conservative strategy. T2 correlations were specified as identical to T1 correlations.
Perceived NS fit T2	Perceived DA fit T2	.5	
Perceived NS fit T1	Perceived NS fit T2	.5	<p>Lu et al. (2014) conducted a three-month lagged study and correlations between perceived NS fit and DA fit at T1 and T2 were provided. Hence, these are used for the Monte Carlo study.</p> <p>Additionally, they found a correlation of approximately .4 between expansion-oriented physical crafting at T2 and perceived NS fit at T1. Although these authors measured job crafting behaviours at T2, and not over the T1-T2 period, the correlation of .4 which they reported was still informative. As expansion-oriented physical crafting falls into approach crafting, as do seeking resources and challenges, similar correlations with other variables might reasonably be expected. Taking a conservative strategy, the correlation retained for the Monte Carlo study between seeking resources/challenges and perceived NS fit at T1 was set to .3. These authors also found a correlation of approximately .3 between expansion-oriented physical crafting (T2) and perceived DA fit at T1. Following the same reasoning, a medium effect size of $r = .3$ between seeking resources/challenges and perceived DA fit at T1 was specified, although a negative association between these two constructs has been theorised in the present research.</p> <p>These authors found correlations of .3 and .2, respectively for the relationship between perceived NS fit (T2) and expansion-oriented physical crafting (T2), and for the relationship between perceived DA fit (T2) and expansion-oriented physical crafting (T2). These effect sizes were used to inform the relationship between PJ fit perceptions at T2 and approach crafting behaviours.</p>
	Perceived DA fit T2	.1	
Perceived DA fit T1	Perceived NS fit T2	.0	
	Perceived DA fit T2	.5	
Seeking resources, seeking challenges (T1 to T2)	Perceived NS fit T1	.3	
	Perceived DA fit T1	.3	
	Perceived NS fit T2	.3	
	Perceived DA fit T2	.2	

Table D.1 (*continued*)

Reducing demands (T1 to T2)	Perceived NS fit T1 Perceived DA fit T1 Perceived NS fit T2 Perceived DA fit T2	.1 -.3 .1 -.3	No empirical study has been identified regarding the relationship between avoidance crafting behaviours and PJ fit perceptions. Therefore, setting the correlation between perceived NS fit and reducing demands as a small effect size was consistent with the hypotheses having been developed (no relationship between perceived NS fit and reducing demands). However, as it was expected that an effect would be found between perceived DA fit and reducing demands, a medium effect size of $r = -.3$ was specified.
Proactive personality T1	Perceived NS fit T1 Perceived NS fit T1 Perceived DA fit T2 Perceived DA fit T2	.4 .4 .4 .4	Erdogan and Bauer (2005) did not measure separately perceived NS fit and DA fit, but they found a correlation of .4 between perceived PJ fit and proactive personality. This correlation is informative and it was used as an estimate by default.
Job autonomy T1	Perceived NS fit T1 Perceived NS fit T1 Perceived DA fit T2 Perceived DA fit T2	.5 .5 .5 .5	Rigotti et al. (2014) did not measure separately perceived NS fit and DA fit, but they found a correlation of .5 between perceived PJ fit and job autonomy. This correlation is informative and it was used as an estimate by default.
Seeking resources	Seeking challenges Reducing demands Proactive personality Job autonomy	.6 .1 .4 .3	Rudolph et al. (2017) carried out an important meta-analysis. In order to evaluate the correlation between seeking resources and another variable, the correlations between this other variable and (a) increasing structural job resources and (b) increasing social job resources were averaged (seeking resources may be seen as combining both increasing structural job resources and increasing social job resources).
Seeking challenges	Reducing demands Proactive personality Job autonomy	.0 .6 .3	
Reducing demands	Proactive personality Job autonomy	-.1 -.1	
Proactive personality	Job autonomy	.3	Several studies pointed to a medium effect size between these two variables (e.g., Joo et al., 2014; Liguori et al., 2013; Parker et al., 2006). Hence, $r = .3$ was assessed as a relevant correlation to be specified.

Table D.2. Correlation matrix informing the Monte Carlo study for determining the minimum sample size required

	Perceived NS fit at T1	Perceived DA fit at T1	Seeking resources at T2	Reducing demands at T2	Seeking challenges at T2	Perceived NS fit at T2	Perceived DA fit at T2	Job autonomy	Proactive personality
Perceived NS fit at T1	1								
Perceived DA fit at T1	.5	1							
Seeking resources at T2	.3	.3	1						
Reducing demands at T2	.1	-.3	.1	1					
Seeking challenges at T2	.3	.3	.6	.0	1				
Perceived NS fit at T2	.5	.0	.3	.1	.3	1			
Perceived DA fit at T2	.1	.5	.2	-.3	.2	.5	1		
Job autonomy	.4	.4	.4	-.1	.6	.4	.4	1	
Proactive personality	.5	.5	.3	-.1	.3	.5	.5	.3	1

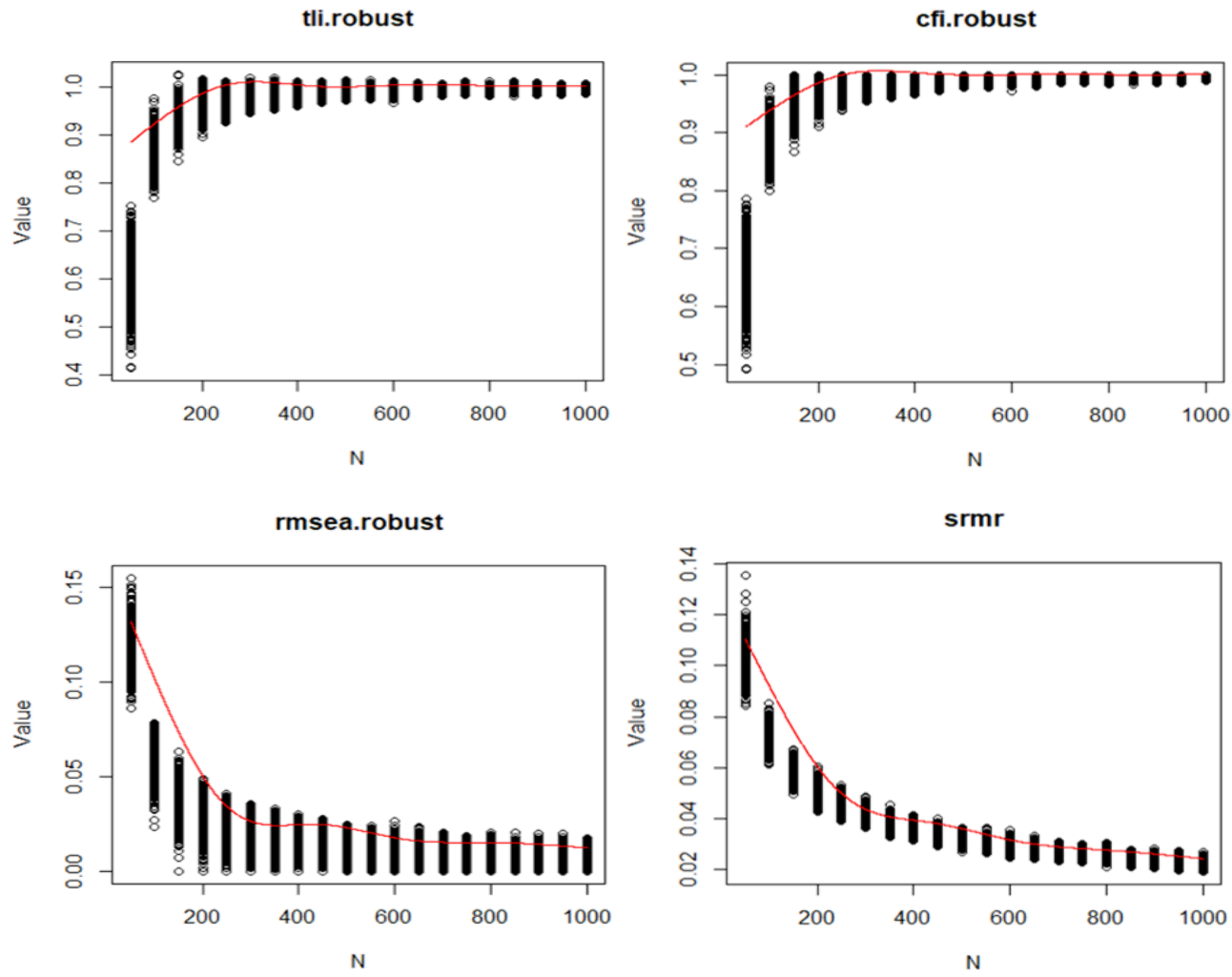


Figure D.1. Sample size planning: CFA fit indices as sample size increases

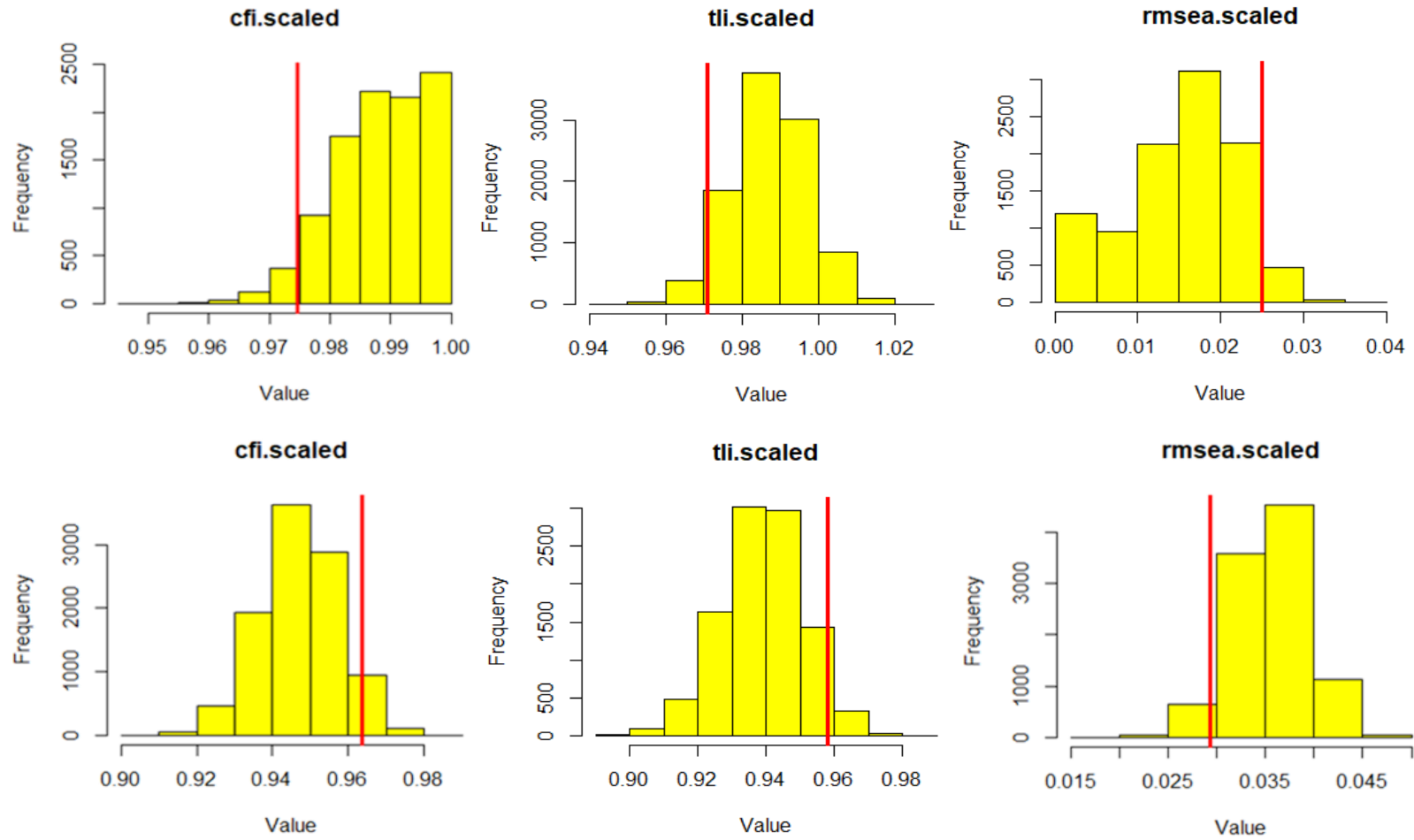


Figure D.2. Fit indices comparisons between the correctly specified CFA (upper figures) and a mis-specified CFA (lower figures) at $N = 360$

Appendix E

Additional Results

This appendix includes correlation tables from the research model, when this model (CFA) is specified with longitudinal configural invariance.

Table E.1. Correlations amongst latent variables (with approach crafting behaviours as a second-order factor) specifying longitudinal configural invariance

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Proactive personality	3.74	.66						
2 Perceived NS fit at T1	3.70	.95	.39***					
3 Perceived DA fit at T1	4.39	.63	.43***	.45***				
4 Approach crafting behaviours	2.89	.67	.45***	.40***	.09			
5 Avoidance crafting behaviours	2.65	.80	.17**	.00	-.15**	.40***		
6 Perceived NS fit at T2	3.71	.97	.37***	.84***	.35***	.42***	-.03	
7 Perceived DA fit at T2	4.38	.62	.41***	.53***	.84***	.24***	-.16**	.55***

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table E.2. Correlations amongst latent variables (without approach crafting behaviours as a second-order factor) specifying longitudinal configural invariance

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Proactive personality	3.74	.66							
2 Perceived NS fit at T1	3.70	.95	.39***						
3 Perceived DA fit at T1	4.39	.63	.43***	.45***					
4 Seeking resources	3.11	.65	.43***	.42***	.11				
5 Seeking challenges	2.68	.90	.39***	.26***	.04	.76***			
6 Reducing demands	2.65	.80	.17**	.00	-.15**	.38***	.34***		
7 Perceived NS fit at T2	3.71	.97	.37***	.84***	.35***	.45***	.27***	-.03	
8 Perceived DA fit at T2	4.38	.62	.41***	.53***	.84***	.26***	.13*	-.16**	.55***

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table E.3. Correlations amongst latent variables (with approach crafting behaviours as a second-order factor) specifying longitudinal configural invariance and change in PJ fit perceptions

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Proactive personality	3.74	.66						
2 Perceived NS fit at T1	3.70	.95	.39***					
3 Perceived DA fit at T1	4.39	.63	.43***	.45***				
4 Approach crafting behaviours	2.89	.67	.45***	.40***	.09			
5 Avoidance crafting behaviours	2.65	.80	.17**	.00	-.15**	.40***		
6 Change in perceived NS fit	.01	.55	-.02	-.25***	-.17*	.05	-.05	
7 Change in perceived DA fit	-.01	.36	-.03	.13	-.30***	.26**	-.02	.39**

Note. Approach crafting behaviours was specified as a superordinate factor having seeking resources and seeking challenges as lower-order factors.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table E.4. Correlations amongst latent variables (without approach crafting behaviours as a second-order factor) specifying longitudinal configural invariance and change in PJ fit perceptions

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Proactive personality	3.74	.66							
2 Perceived NS fit at T1	3.70	.95	.39***						
3 Perceived DA fit at T1	4.39	.63	.43***	.45***					
4 Seeking resources	3.11	.65	.43***	.42***	.11				
5 Seeking challenges	2.68	.90	.39***	.26***	.04	.76***			
6 Reducing demands	2.65	.80	.17**	.00	-.15**	.38***	.34***		
7 Change in perceived NS fit	.01	.55	-.02	-.25***	-.17*	.06	.03	-.05	
8 Change in perceived DA fit	-.01	.36	-.03	.13	-.30***	.27**	.16*	-.02	.39**

* $p < .05$; ** $p < .01$; *** $p < .001$.

Appendix F
Re-Analysis of Interaction Effects
Based on a Latent Variable

F.1 Using the Mean-Centring PI Strategy

For this analysis, perceived NS fit and DA fit indicators were all mean-centred at T1. Then, three product indicators (PI) were created, following the matched-pair strategy proposed by Marsh et al. (2004). The PIs then served as indicators of a latent variable representing the interaction between perceived NS fit and DA fit at T1. Evidently, mean-centring the indicators of perceived NS fit and DA fit at T1 changed the scale of their corresponding latent factors. Consequently, indicator scores of perceived NS fit and DA fit at T2 also had to be transformed to assess change in PJ fit perceptions on a common scale. Indicator scores of perceived NS fit and DA fit at T2 were transformed by subtracting the mean of their corresponding indicator at T1. This transformation was done to ensure that scores at T1 and T2 were transformed by a constant. For instance, if 2.8 is the mean of indicator X at T1, and 3.0 and 4.0 are the scores of a person at T1 and T2 for this indicator, then the transformed scores for this person were 0.2 and 1.2. Thereby, the scores at T1 and T2 were transformed consistently without affecting the magnitude of change in indicator scores. Longitudinal strict invariance was also specified in this research model to be consistent with the model specification defined in Chapter 7.

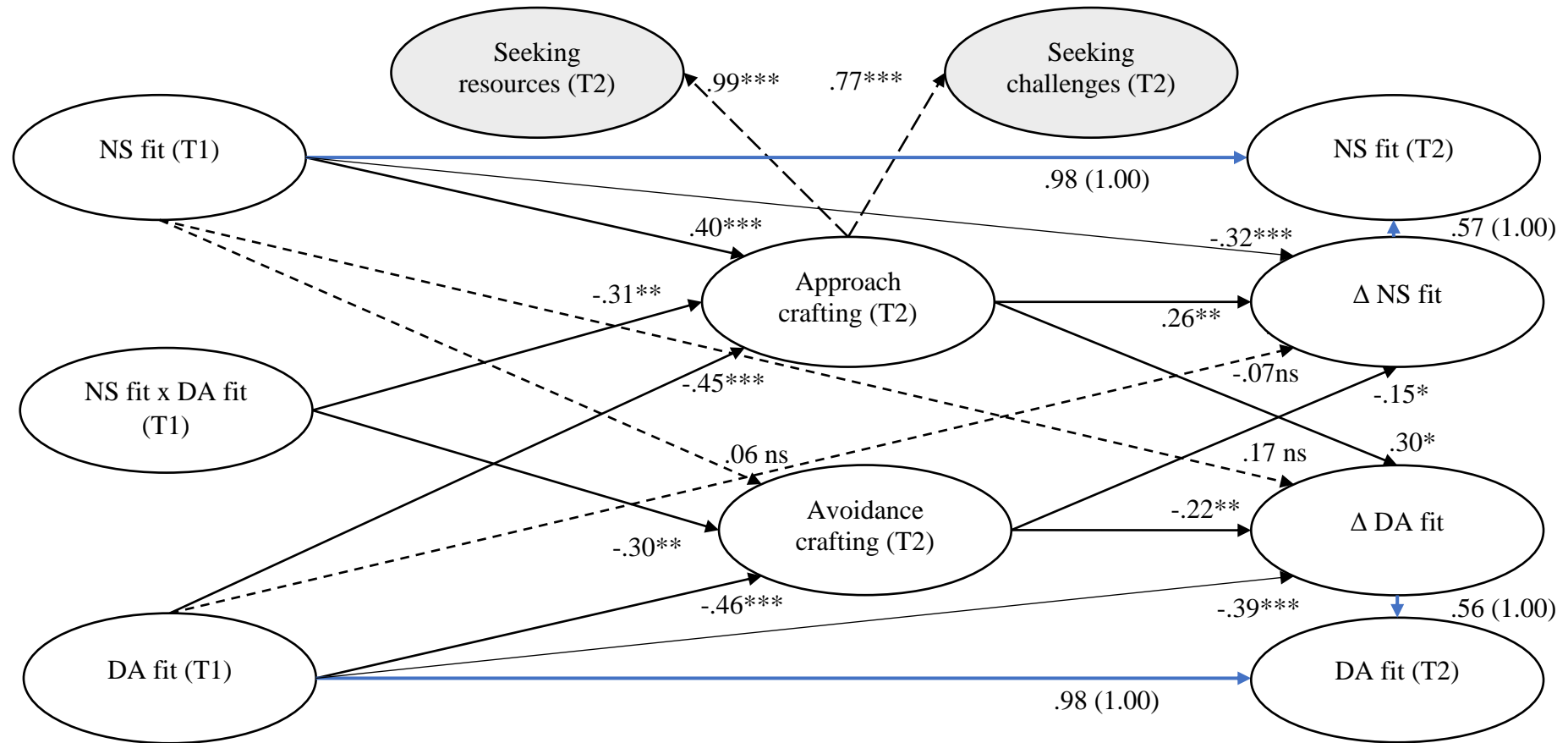
As Table F.1 shows, including the effects of the interaction variable on both approach and avoidance crafting behaviours was relevant. Results of the analysis are depicted in Figure F.1. It may be observed that interaction effects are significant, just as with the main analysis carried out in Chapter 7. Furthermore, plots depicting interaction effects are quasi identical to those produced in Chapter 7 (see Table F.2).

Table F.1. SEMs pertaining to the relevance of including the latent interaction variable into the analysis (with mean-centred product indicators)

Models	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Model A - Effect of interaction freely estimated on approach and avoidance crafting behaviours	.94	.93	.05	412	779.24***		
Model B – Effect of interaction term null on approach crafting behaviours and freely estimated on avoidance crafting behaviours	.94	.93	.05	413	794.51***	1	10.39***
Model C – Effect of interaction term freely estimated on approach crafting behaviours and null on avoidance crafting behaviours	.94	.93	.05	413	791.02***	1	9.18***
Model D – Effect of interaction term null on both approach and avoidance crafting behaviours	.94	.93	.05	414	800.36***	2	15.98***

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). Δ concerned differences with Model A.

* $p < .05$; ** $p < .01$; *** $p < .001$.



Note. Estimates are standardized. Grey ovals represent the first-order factors of approach crafting behaviours. Non-depicted relationships amongst the white shapes are freely estimated covariances. Covariances involving NS fit and DA fit at T2 are set to 0. Blue paths were set to 1 (values in blue). Although not depicted, the effects of proactive personality on both approach and avoidance crafting behaviours were controlled for.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Figure F.1. Results from SEM using the mean-centring PI strategy for moderation: direct effects

Table F.2. Comparison of moderation effects between the mean-centred PI strategy and the residual-centred product factor scores strategy

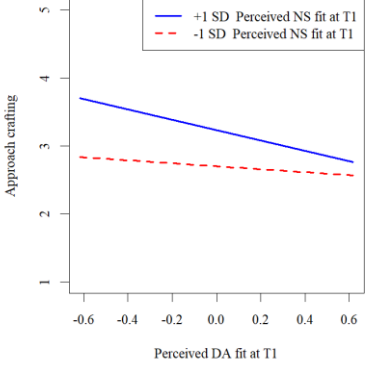
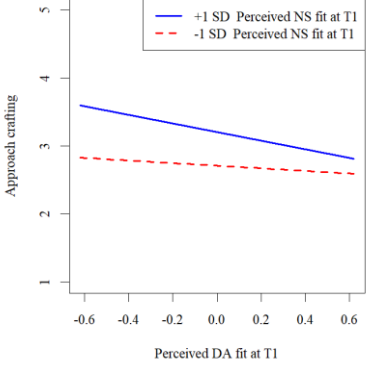
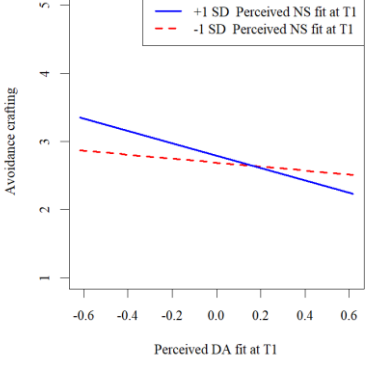
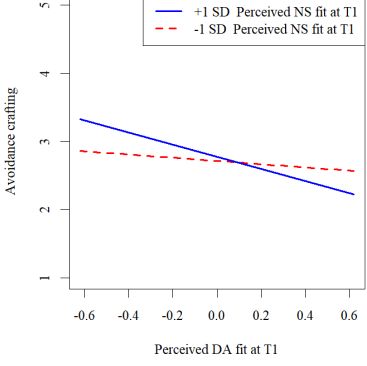
Mean-centred PIs	Residual-centred product factor scores	Comments
<p data-bbox="208 435 573 496">Relationship between approach crafting and perceived DA fit at T1 (mean centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)</p> 	<p data-bbox="703 435 1068 496">Relationship between approach crafting and perceived DA fit at T1 (mean-centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)</p> 	<p data-bbox="1160 416 2078 603">It may be observed similar effects on approach crafting behaviours using both strategies. Furthermore, results from bootstrapping (n = 2000), obtained when indirect effects were assessed in models depicted in Figures 7.1 and F.1, are as follows (unstandardized effect, standardized effect, lower limit and upper limit of a 95% bias corrected confidence interval [BCCI] for unstandardized effects):</p> <p data-bbox="1160 651 1317 676">NS fit + 1SD</p> <p data-bbox="1227 691 2056 718">Mean-centring (Figure F.1): $b = -.757, \beta = -.765$, BCCI [-1.309, -.392]</p> <p data-bbox="1227 730 2069 758">Residual-centring (Figure 7.1): $b = -.637, \beta = -.616$, BCCI [-.882, -.321]</p> <p data-bbox="1160 770 1317 796">NS fit - 1SD</p> <p data-bbox="1227 810 2056 837">Mean-centring (Figure F.1): $b = -.219, \beta = -.140$, BCCI [-.401, -.055]</p> <p data-bbox="1227 850 2069 877">Residual-centring (Figure 7.1): $b = -.194, \beta = -.220$, BCCI [-.357, -.036]</p>
<p data-bbox="185 922 586 983">Relationship between avoidance crafting behaviours and perceived DA fit at T1 (mean centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)</p> 	<p data-bbox="703 922 1068 983">Relationship between avoidance crafting and perceived DA fit at T1 (mean-centered) at low and high level of perceived NS fit at T1 (-/+ 1 SD)</p> 	<p data-bbox="1160 906 2078 1093">It may be observed similar effects on avoidance crafting behaviours using both strategies. Furthermore, results from bootstrapping (n = 2000), obtained when indirect effects were assessed in models depicted in Figures 7.1 and F.1, are as follows (unstandardized effect, standardized effect, lower limit and upper limit of a 95% bias corrected confidence interval [BCCI] for unstandardized effects):</p> <p data-bbox="1160 1141 1317 1166">NS fit + 1SD</p> <p data-bbox="1227 1181 2056 1208">Mean-centring (Figure F.1): $b = -.908, \beta = -.756$, BCCI [-1.610, -.500]</p> <p data-bbox="1227 1220 2069 1248">Residual-centring (Figure 7.1): $b = -.888, \beta = -.712$, BCCI [-1.187, -.566]</p> <p data-bbox="1160 1260 1317 1286">NS fit - 1SD</p> <p data-bbox="1227 1300 2056 1327">Mean-centring (Figure F.1): $b = -.291, \beta = -.163$, BCCI [-.497, -.112]</p> <p data-bbox="1227 1340 2069 1367">Residual-centring (Figure 7.1): $b = -.237, \beta = -.231$, BCCI [-.415, -.055]</p>

Table F.3. Unstandardized (b) and standardized (β) indirect effects obtained with bootstrapping and using the mean-centring PI strategy ($n = 2000$)

Indirect effects	b (β)	SE	Lower Limit BCCI 95%	Upper Limit BCCI 95%
Perceived NS fit (T1) → Approach crafting behaviours → Change in perceived NS fit	.060 (.103)	.026	.017	.122
Perceived NS fit (T1) → Approach crafting behaviours → Change in perceived DA fit	.045 (.120)	.019	.016	.092
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived DA fit	-.077 (-.136)	.039	-.188	-.025
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived NS fit	-.104 (-.117)	.052	-.248	-.028
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived DA fit	.057 (.099)	.025	.022	.136
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived NS fit	.063 (.071)	.035	.012	.163
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived DA fit				
Perceived NS fit +1 SD	-.120 (-.230)	.059	-.295	-.040
Perceived NS fit mean	-.077 (-.136)	.038	-.186	-.026
Perceived NS fit -1 SD	-.035 (-.042)	.021	-.094	-.007
Perceived DA fit (T1) → Approach crafting behaviours → Change in perceived NS fit				
Perceived NS fit (T1) +1 SD	-.161 (-.198)	.081	-.394	-.045
Perceived NS fit (T1) mean	-.104 (-.117)	.052	-.246	-.028
Perceived NS fit (T1) -1 SD	-.047 (-.036)	.027	-.117	-.008
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived DA fit				
Perceived NS fit (T1) +1 SD	.086 (.164)	.039	.035	.218
Perceived NS fit (T1) mean	.057 (.100)	.025	.023	.135
Perceived NS fit (T1) -1 SD	.027 (.035)	.013	.010	.066
Perceived DA fit (T1) → Avoidance crafting behaviours → Change in perceived NS fit				
Perceived NS fit (T1) +1 SD	.095 (.116)	.053	.020	.253
Perceived NS fit (T1) mean	.063 (.071)	.035	.012	.163
Perceived NS fit (T1) -1 SD	.030 (.025)	.019	.004	.081

Note. Standard errors and confidence intervals are given for unstandardized indirect effects.

* $p < .05$; ** $p < .01$; *** $p < .001$.

F.2 Using the Residual-Centring PI Strategy

While it was argued that the residual-centring PI strategy (Little, Bovaird, et al., 2006) may not yield a latent interaction variable that is orthogonal to its latent constituents when data is not normally distributed (Lin et al., 2010), an analysis using this strategy

was run for (a) exploratory purposes and (b) for comparing its results with those obtained in Chapter 7 and in the last section (Section F.1). In this analysis, the all-possible-combinations strategy was chosen to create PIs (Little, 2013; Little, Slegers, et al., 2006).

A limitation of this strategy in the context of the present research is that the calculation of simple slopes and moderated indirect effects was not processed. Indeed, the developers' comments in the R code of the function "probeRC2Way" (Jorgensen et al., 2019), which allows for calculating simple slopes and intercepts of latent interaction effects using the residual-centring PI strategy, indicate that calculations rest on "a strong assumption that the first-order latent variables are normally distributed". Normality did not apply to the distribution of the present study variables. Thus, biased effects would have been obtained using this function. Furthermore, job crafting behaviours were also predicted by proactive personality. Calculation of simple intercepts using the probeRC2Way function would have thus been inadequate, as this function, to the best of my knowledge, gives simple intercepts and slopes based on the interacting variables only. Finally, probe2WayRC does not allow for calculating moderated indirect effects, which were critical for the present research.

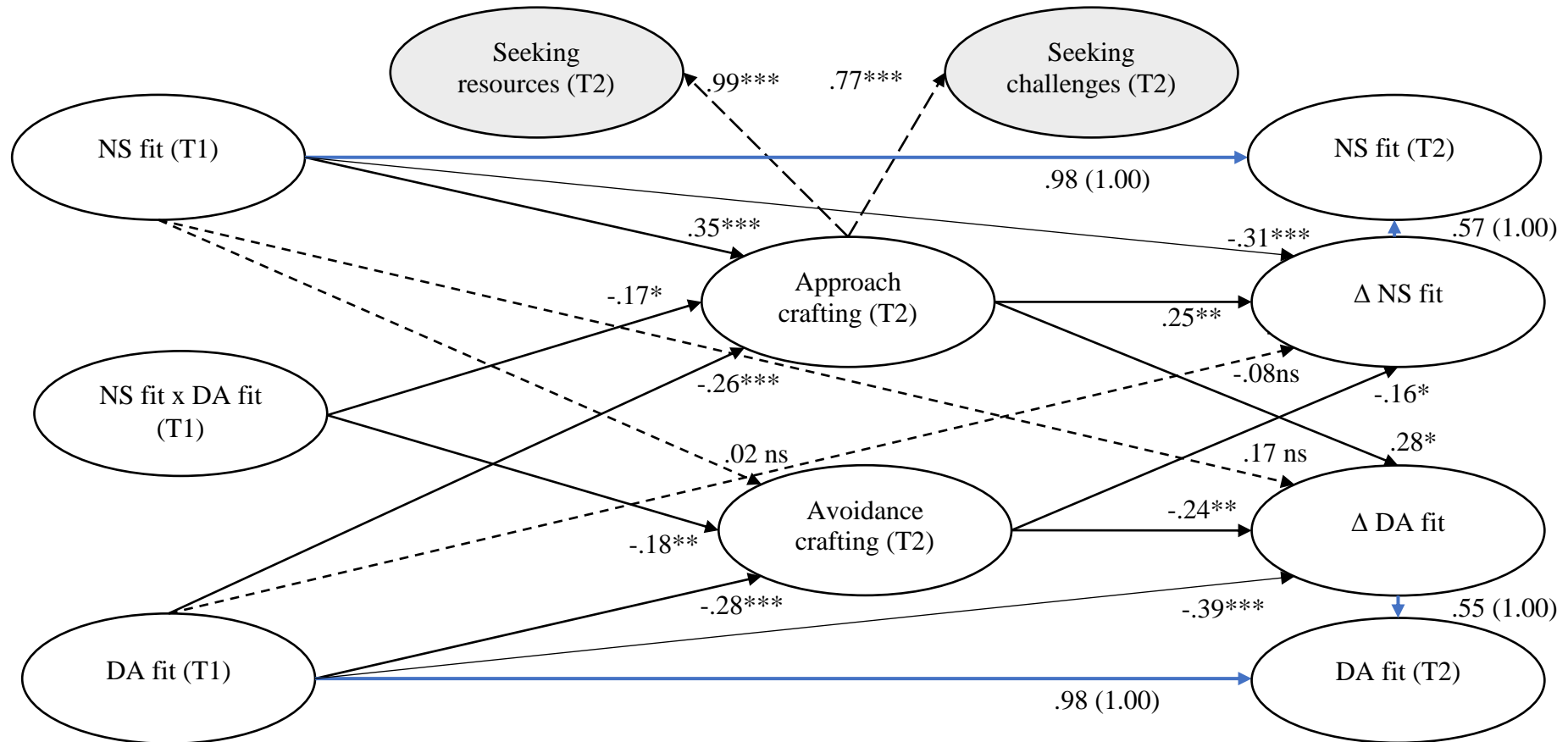
Results of this analysis (direct effects) are presented in Figure F.2. Table F.4 also shows that despite an absence of orthogonality between the latent interaction variable and its conceptually latent constituents (i.e., perceived NS fit and DA fit), constraining covariances to be null on these relationships did not affect model fit. This suggests that the latent interaction variable could reasonably be considered as orthogonal to perceived NS fit and DA fit. Importantly, consistent with results obtained in Chapter 7 and in the previous section, the moderating role of perceived NS fit in the relationships between perceived DA fit and job crafting behaviours was supported (Figure F.2 and Table F.5).

Table F.4. Evaluation of the orthogonality of the latent interaction variable with its conceptually latent constituents

SEM depicted in Figure F.2	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Orthogonality relaxed	.98	.97	.03	590	774.01*** ^a		
Orthogonality specified	.98	.97	.03	592	770.27*** ^a	2	.20 (ns)

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000).^a While it may be seen as surprising that the adjusted chi-square is better for the model specifying orthogonality than for the model relaxing it, it is important to note that the non-adjusted chi-square for the model relaxing orthogonality was $\chi^2 = 1105.86$ and that of the model specifying orthogonality was $\chi^2 = 1105.89$.

* $p < .05$; ** $p < .01$; *** $p < .001$



Note. Estimates are standardized. Grey ovals represent the first-order factors of approach crafting behaviours. Non-depicted relationships amongst the white shapes are freely estimated covariances. Covariances involving NS fit and DA fit at T2 are set to 0. Covariances between the latent interaction variable and PJ fit perceptions at T1 are also set to 0. Blue paths were set to 1 (values in blue). Although not depicted, the effects of proactive personality on both approach and avoidance crafting behaviours were controlled for. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure F.2. Results from SEM using the residual-centring PI strategy for moderation: direct effects

Table F.5. SEMs pertaining to the relevance of including the latent interaction variable into the analysis (with residual-centred product indicators)

Models	CFI	TLI	RMSEA	<i>df</i>	χ^2	Δdf	$\Delta \chi^2$
Model A - Effect of interaction freely estimated on approach and avoidance crafting behaviours	.98	.97	.03	592	770.27***		
Model B – Effect of interaction term null on approach crafting behaviours and freely estimated on avoidance crafting behaviours	.98	.97	.03	593	776.82***	1	5.13*
Model C – Effect of interaction term freely estimated on approach crafting behaviours and null on avoidance crafting behaviours	.98	.97	.03	593	778.17***	1	6.52*
Model D – Effect of interaction term null on both approach and avoidance crafting behaviours	.98	.97	.03	594	781.68***	2	9.40**

Note. As explicated in Section 6.2.1, fit indices are robust (CFI, TLI, RMSEA) and the chi-square is adjusted. The chi-square difference test is performed using Satorra's method (2000). Δ concerned differences with Model A. Orthogonality is specified (covariance between the latent interaction variable and PJ fit perceptions set to be null).

* $p < .05$; ** $p < .01$; *** $p < .001$.