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Is the HEXACO the new black? An examination of the predictive validity of NEO-PI-3 and the HEXACO-PI-R to determine if the six factor model of personality provides the most parsimonious assessment of an individual's employment suitability

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Is the HEXACO the new black?

**An examination of the predictive validity of NEO-PI-3 and the HEXACO-PI-R to
determine if the six factor model of personality provides the most parsimonious
assessment of an individual's employment suitability.**

A thesis submitted in fulfilment of the requirements for the award of the degree

MASTER OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

ANGELINE WILSON

B.A. (Hons), MA. Clin. Psych.

School of Psychology

2016

CERTIFICATION

I Angeline C. Wilson, declare that this thesis, submitted in fulfilment of the requirements for the award of Master of Philosophy, in the Department of Psychology, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualification at any other academic institution.

Angeline C. Wilson

1 July 2016

Abstract

This thesis examines several issues of particular relevance to psychologists assisting employers with recruitment decisions. A relatively new model of personality, the HEXACO Personality Inventory (Ashton, Lee & Goldberg, 2004; Ashton, Lee, Perugini et al, 2004), proposes that personality is best conceptualised as consisting of six rather than the five factors that have historically been advocated in the personality literature (Fiske, 1949; Norman, 1963; Digman & Takemoto-Chock, 1981; Goldberg, 1990). Theoretically and empirically, the HEXACO has been positioned as having a superior ability to assess an individual's antagonism and altruism tendencies as well as their willingness to exploit others (Lee & Ashton, 2005; Lee, Ashton & Shin, 2005; Lee, Ashton, & de Vries, 2005a; Ashton & Lee, 2007; Oh, Lee, Ashton, & de Vries, 2011). The thesis therefore argues that the HEXACO model of personality is likely to provide a more parsimonious assessment of an individual's propensity to refrain from counter productive workplace behaviours (CWB), or behaviours that have the potential to harm the employer or their colleagues, and their organisational citizenship behaviour (OCB), or their propensity to make a positive contribution to the workplace, or than is provided by the five factor model (FFM). This hypothesis is based on the position that both the OCB and CWB constructs have theoretical underpinnings that include elements of altruism, antagonism and exploitation and the similarities in the theoretical underpinnings of the HEXACO would therefore see it provide a more parsimonious assessment of CWB and OCB than is provided by the FFM which does not have the same theoretical underpinnings.

To test this hypothesis the predictive validity of the HEXACO domains were compared with that of a standardised measure of the FFM that is routinely used in an employment selection context; the NEO-PI-3. The thesis also hypothesised that both the HEXACO and FFM would be able to account for the variance in the important CWB predictors of trait anger and self

control in the prediction of CWB as both broader personality models have subscales which were likely to provide an assessment of these constructs. Participants in the data set were individuals undertaking psychological testing for employment purposes. The results indicated that there was little difference between the HEXACO and the FFM models in the prediction of either OCB or CWB. The results also indicated that the prediction of CWB was improved when trait anger and self-control were assessed separately to the HEXACO and the FFM. It was concluded that the large degree of content overlap between the sixth domain of the HEXACO, the honesty-humility domain, and the agreeableness domain of the FFM, saw both models able to account for a similar degree of variance.

The thesis also considers and addresses broader concerns that are particularly relevant for practitioners using personality assessment tools to assist employers to determine an individual's CWB and OCB potential. In particular, consideration was given to the potential impact of socially desirable responding and the advantages and disadvantages of the use of narrow and broad measures of personality assessment. There is empirical evidence that suggests that individuals can and do alter their responding on personality instruments in an employment selection context but researchers and practitioners have argued that this is a form of response bias, while others argue that it is the result of the variance that is shared with personality measures typically used to predict occupational outcomes. The thesis positions that there is a lack of empirical evidence to determine the influence of positive impression management when the criterion of assessment is CWB and OCB. The experimental analysis found that positive impression management does little to decrease the criterion related validity of the HEXACO or the FFM for a CWB outcome but did contribute to the HEXACO's prediction of the OCB outcome. This result was discussed in the context of the likely overlap in the content of the HEXACO's domains, the positive impression management measure and the OCB construct.

An additional area of considerable debate for applied psychologists assisting employers with recruitment is on the use of optimal bandwidth of personality assessment. There is equally strong theoretical views that support the use of broad (domain) and the use of narrow (facet) personality measures in the employment domain but again it was found that there was a lack of evidence assessing these competing positions when CWB and OCB are the outcome variables. The thesis hypothesised that facet level assessment was likely to provide increased criterion related validity which was often the outcome that employers were focussed on. The empirical investigation of this found that a composite of facet level assessments had greater predictive validity with CWB and OCB, however the increased predictive validity came at the price of increased complexity and number of predictive dimensions

The current thesis is limited by a correlational design, a sample that may not be wholly age and gender representative of the employment seeking population and the use of a positive impression management measure that had poor internal consistency. The thesis does however, provide valuable research that indicates that the HEXACO and the FFM both provide valid predictors of the employment suitability domains of CWB and OCB. It concludes that the predictive validity of CWB is likely to be improved with the addition of trait anger and self control measures to a broad personality measure. The thesis also provides practical advice for applied psychologists including the requirement to use local norms for personality instruments and to consider validity and ease of interpretation in balancing the decision to use measures at a broad or narrow personality level.

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This piece of work has been facilitated by the time and resources that were given to me by a generous employer who understood, valued and supported the application of scientific rigour to employment determinations. Thank you.

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CHAPTER 1

INTRODUCTION AND OVERVIEW OF THESIS

1.1 Introduction

There is a growing body of literature providing guidance to applied psychologists on how to successfully recruit employees who more likely to make a positive contribution to the workplace and who will refrain from behaviours that have the potential to harm the employer. The Industrial/Organisational (I/O) literature typically refers to employees engaging in behaviour that has the potential to harm the employer as counterproductive work behaviour (CWB), and behaviour that serves to benefit the employer as organisational citizenship behaviour (OCB). This thesis extends the scientific literature in this field by comparing the predictive validity of two broad personality assessment measures in the prediction of CWB and OCB. The thesis also provides clear guidance to applied psychologists on the considerations necessary for the use of these tools in a personnel selection context.

1.1.1 Aim and Overview of the Thesis and Chapter

The primary aim of this thesis is to assess if the six factor model of personality, the HEXACO (Ashton, Lee & Goldberg, 2004; Ashton, Lee, Perugini et al, 2004), provides a more parsimonious assessment of CWB and OCB than that provided by the five factor model (FFM) of personality (Fiske, 1949; Norman, 1963; Digman & Takemoto-Chock, 1981; Goldberg, 1990). It is argued that a parsimonious assessment tool, that has the capacity to identify dispositional predictors for both the CWB and OCB, will allow employers to build a workforce that makes a positive contribution to work outcomes at the individual, team and organisation level.

The secondary aim of the thesis is to identify other relevant considerations for practitioners using personality assessment tools for the assessment of CWB and OCB. In particular, consideration is given to the potential impact of socially desirable responding, the applicability of personality norms for the employment-seeking population and the advantages and disadvantages of the use of narrow and broad measures of personality assessment.

This chapter outlines a construct that will be defined as employment suitability and identifies the benefits to employers for considering this construct in personnel selection processes and decisions. It also provides a brief overview of the literature and empirical research in the CWB and OCB domains, and details how the thesis addresses the gaps in the empirical literature by identifying a parsimonious personality tool for assessing CWB and OCB. This chapter also provides an overview of the contents of the chapters that follow.

1.2 Employment Suitability: Definition and Value in Personnel Selection

Personnel selection methods have traditionally assessed the compatibility between an individual's knowledge, skills or abilities and the requirements of the job for which he or she is applying. The I/O literature typically refers to this as an assessment of person-job fit or the individual's job performance potential (see Hough & Oswald, 2000). There is strong evidence that an assessment of general mental ability (GMA) provides the best predictor of an individual's 'overall job performance' (Schmidt & Hunter, 1998) and it is typical industry practice to use an assessment of GMA in personnel selection processes in order to predict a candidate's job performance potential.

In recent years, psychological research in the I/O domain of personnel selection has seen the definition of job performance expand, moving beyond a relatively narrow definition of a person's ability to perform the tasks or duties to a broader definition that views job performance as a more complex and multidimensional concept (see Motowidlo & Van Scotter, 1994; Ones & Viswesvaran, 1998; Dalal, 2005; Kristof-Brown, Zimmerman, & Johnson, 2005). There is increasing support that an evaluation of employment suitability should include an assessment of competencies that are not directly related to the tasks of the position. In particular, the I/O literature considers occupational performance to comprise both individuals' ability to perform the tasks of the position and their 'non-task' related competencies (Viswesvaran & Ones, 2000; Rotundo & Sackett, 2002; Sackett, 2002; Dalal, 2005; O'Brien & Allen, 2008). These non-task based competencies are said to contribute to effective performance in two ways. The first is through supporting the wider functioning of the team and organisation; and the second is through the indirect benefits that the non-task based competencies have on the individual's own task performance. The non-task based competencies enable individuals to do their own job well and to assist others, which results in a positive contribution to overall functioning of the work unit and the organisation.

A comprehensive personnel selection assessment, aimed at determining the performance potential of an individual, would therefore see personnel selection criteria expanded from simply assessing an individual's job-fit or task performance to one that evaluates the individual on other important non-task based aspects that enhance the individual's own and the organisation's functioning as a whole (Sackett, 2002; Dalal, 2005; Sackett, Berry, Wiemann & Laczó, 2006). Whilst the assessment of the individual's ability to perform the tasks of the position has been previously defined as task performance or job suitability (e.g.: Barrick & Mount, 1991; Borman & Motowidlo, 1997), the individual's propensity to make a

positive contribution at the individual, team and organisation level, could reasonably be conceptualised and defined as an assessment of the individual's employment suitability.

A personnel selection process that assesses employment suitability provides the employer with information on factors that predict whether individuals are likely to have the qualities that enable them to contribute to the organisation beyond their-task related competencies. This is particularly valuable in organisations where there is a requirement for team-based performance and high levels of interpersonal interaction. In these work environments, individuals need to cooperate and work collaboratively to deliver individual and work unit outcomes; the effectiveness of an individual's performance in these situations is closely associated with their ability to assist and support the wider functioning of the team or organisation. An assessment of the factors that effectively predict important aspects of employment suitability would therefore be seen as a necessary prerequisite to assist organisations in building workforces that can derive additional benefits at work unit and organisation levels from the broader behavioural spectra of their employees (King, George, & Hebl, 2005).

A further benefit of an assessment of employment suitability is that it provides the employer with information that can be generalised beyond the position for which the individual might be recruited. This is particularly useful in organisations where individuals are permitted and encouraged to move within the organisation after their initial employment. Individuals may be recruited for their specialist or technical skills (job suitability); however, once working for an organisation they may be transferred laterally or hierarchically to perform a position that they were not originally recruited to do (Borman & Motowidlo, 1997). An assessment of an individual's employment suitability ensures the individual has the attributes to contribute

positively across the spectrum of positions in the organisation as distinct from his or her aptitude for a particular position or their job suitability.

Job suitability and employment suitability are compatible, not competing or opposing constructs (Fodchuck, 2007). A selection process needs to ensure that an individual has the required skills and abilities to perform the tasks of the position (job suitability). If an individual does not have the required skills to perform the job there would be no requirement to further evaluate the broader aspects of their employment suitability. Employment suitability provides the higher level or broader assessment competencies with the aim of determining the likelihood that an individual has the broader dispositional tendencies that assist them in making an effective contribution to the team and organisation and overall positive impact on the employment environment.

The concept of employment suitability draws on Kristof's (1996) theory person-organisation fit which, in part, proposes that compatibility between a person and an organisation leads to positive work outcomes. An evaluation of person-organisation fit, however, requires an assessment of the needs, values and culture of an organisation and assessment of the dispositional tendencies of the individual to determine the level of compatibility between the person and the organisation. The concept of employment suitability contrasts with the concept of person-organisation fit as it aims to provide a generically applicable concept of fit. Accordingly, an assessment of employment suitability does not require the measurement of organisational needs or characteristics as it provides an assessment of fit through what could be considered as generically applicable aspects of suitability.

The aim of an assessment of employment suitability is to identify dispositional predictors for what could be considered as generically applicable employment criteria. The I/O literature routinely cites CWB and OCB as two categories of individual employee behaviour that have the potential to enhance or detract from occupational performance at the individual, group and organisational level, and as such, an assessment of these two constructs will provide an employer with an assessment of generically applicable criteria that provide information on an individual's potential to make a positive contribution to the workplace.

Counterproductive work behaviour is typically described as a range of voluntary and intentional employee behaviours that are contrary to the interests of the work unit or organisation (Hogan & Hogan, 1989; Bennett & Robinson, 2000; Sackett & DeVore, 2001; Hakstian, Farrell, & Tweed, 2002; Penney, Hunter, & Perry, 2011); OCB has been defined as employee behaviours that are not essential to the performance of the work tasks yet assist to increase the performance functioning of the individual, team and organisational functioning (Lee & Allen, 2002). An assessment of the dispositional factors that predict CWB and OCB will, therefore, inform an employer of aspects of an individual's dispositional tendencies that are likely to influence behaviours that facilitate or inhibit the production of work outcomes (Borman & Motowidlo, 1997; Motowidlo, Borman, & Schmidt, 1997). Considered in the context of employment suitability, CWB provides an assessment of an individual's propensity for engagement in behaviour that has the potential to harm the organisation, whilst OCB provides an assessment of the individual's propensity to act in ways that assist the organisation.

Counterproductive work behaviour and OCB together could potentially be considered as constituting a construct which the current thesis has labelled employment suitability: the

degree to which an individual will enhance or detract from his or her own, the group and the organisations' performance. There is, however, strong evidence to indicate that CWB and OCB are separate constructs and not the opposite ends of a helping-harming occupational continuum (see Dalal, 2005; Sackett, et al., 2006). Consequently, there is the requirement to consider the CWB and OCB constructs separately; as distinct criteria or dependent variables rather than as opposite ends of an occupational harming-helping continuum. There is, nonetheless, the requirement for employment selection processes to be efficient in identification of relevant selection data. It is for this efficiency reason that the current thesis proposes to identify one personality assessment tool that provides an assessment of the relevant dispositional predictors for both CWB and OCB.

The following section provides an overview of the benefits to the employer of conducting an assessment of employment suitability in the personnel selection context.

1.3 Organisational Advantages of Assessing for Employment Suitability

Counterproductive work behaviours are behaviours on the part of an employee that are voluntary, intentional and contrary to the interests of the work unit or organisation (Hogan & Hogan, 1989; Bennett & Robinson, 2000; Sackett & DeVore, 2001; Hakstian, Farrell, & Tweed, 2002; Penney, Hunter, & Perry, 2011). Research has shown that when employees engage in CWB there is the potential for a significant negative impact on the work group (Dunlop & Lee, 2004), the reputation of the organisation and the morale of other employees (Hakstian, et al., 2002). A prominent case of the impact of CWB in Australia centres with the Department of Defence and the numerous internal and external inquiries into the actions of Defence employees, military and civilian, who have engaged in behaviour that has harmed

colleagues and consequently the reputation of the Department and the Australian armed services. The actions of these employees have also resulted in significant financial consequence to the Government. In 2012 the Australian Government established the Defence Abuse Response Taskforce which had a mandate to assess and respond to historical allegations of abuse by employees within the Department of Defence. The taskforce had the capacity to provide a range of reparation outcomes to victims including counselling, an apology and/or financial compensation. The financial cost of the impact of workplace abuse within Defence is evident in the Australian Government's budget for the reparation payments; the cost of reparation payments for victims was budgeted at \$83.9 million with an additional \$37.1 million budgeted to fund the actions of the Taskforce¹. As at 16 June 2014, the Taskforce had received 2400 separate complaints². The monetary cost of this response to CWB in one Australian Government department identifies what is likely to be only a proportion of the financial cost of aberrant employee behaviour for the Australian Government. This financial cost also needs to be placed in the wider consequences of aberrant employee behaviour including the immediate and enduring emotional impact of this behaviour on the victims and the likely reputation and potential productivity compromise for the organisation. There is also an opportunity cost through the loss of staff and potential employees who consider Defence to have values that are inconsistent with those they want from an employer. The use of a personnel selection tool that enables employers to predict an applicant's potential for CWB would facilitate an informed decision process about the potential risk posed by an individual. Longer-term, this would allow the employer to build a workforce who are less likely to engage in behaviours that have the potential to result in financial and reputation compromise to the employer and behaviours that can harm colleagues.

¹ http://www.budget.gov.au/2013-14/content/bp2/html/bp2_expense-08.htm

² DART Media Briefing Pack 16 June 2014

The advantage of employing individuals based on OCB potential has strong empirical support for a positive outcome for the organisation. Research has shown that individuals who display higher levels of OCB are more likely to receive positive individual performance appraisals and their work groups and organisations are likely to be assessed as higher performing (MacKenzie, Podsakoff & Fetter, 1991; Podsakoff & MacKenzie 1997; Podsakoff, Aherne & MacKenzie, 1997; Allen & Rush, 1998; Podsakoff, MacKenzie, Paine & Bachrach, 2000; Walz & Neihoff, 2000; Johnson, Erez, Kier & Motowidlo, 2002; Dunlop & Lee, 2004).

Chapters two and three argue that CWB and OCB are both hierarchical constructs with an overall global construct at the top of the hierarchy and dimensions that are based on the target of the CWB or OCB, with the targets being defined as individuals or the organisation as a whole (Williams & Anderson, 1991; Robinson & Bennett; 1995; 1997; Bennett & Robinson, 2000, see Figures 2.1 and 3.1). Identification of dispositional predictors of CWB and OCB at the global as well as the dimensional level (interpersonal or organisational) allows employers to consider their tolerance for dispositional predictors of concern for the global constructs as well as for CWB and OCB directed at different targets; individuals and the organisation. This allows employers to consider their tolerance for particular CWB and OCB risks and target strategies to manage the identified risk (see Berry, Ones, & Sackett, 2007).

1.4. Dispositional Predictors of OCB and CWB

As noted in section 1.1.1, an aim of the thesis is to identify a broad personality assessment tool that is able to provide a parsimonious assessment of the employment suitability domains of CWB and OCB. To this end two personality assessment models are investigated; the five

and six factor models of personality. The thesis argues that, theoretically, the six factor model of personality is likely to provide the most parsimonious assessment of these employment suitability domains. The rationale for this proposition is detailed in Chapter four, but will be reviewed briefly in this following paragraph.

The FFM of personality (Fiske, 1949; Norman, 1963; Digman & Takemoto-Chock, 1981; Goldberg, 1981) clusters personality along five broad domains: emotionality, extraversion, openness, agreeableness and conscientiousness. A range of individual studies and meta-analysis research have demonstrated the predictive validity of each domain of the FFM for CWB (Hough, 1992; cited in Salgado, 2002; Salgado, 2002; Berry, Ones, & Sackett, 2007,) and OCB (Gelantly & Irving, 2001; Dalal, 2005; Sackett, et al., 2006; King, George, & Hebl, 2005; O'Brien & Allen, 2008); the predictive validity for this personality model with both elements of employment suitability can be considered as reliably established. Recent research, however, has seen the emergence of a new model of personality structure; the HEXACO (Lee & Ashton, 2004), which proposes a six factor model to categorise the structure of personality. Five of the domains of this model have significant content overlap with the domains of the FFM, but the HEXACO includes the additional domain which has been labelled honesty-humility. The significant content overlap between the domains of the FFM and the HEXACO means that the domains of the HEXACO would reasonably be expected to have a concomitant level of operational validity with the employment suitability criteria of CWB and OCB as the corresponding domain in the FFM. The proposed advantage of the HEXACO over the FFM in the assessment of CWB and OCB comes from its theoretically proposed and empirical demonstrated ability to provide an assessment of an individual's pro-social tendencies (see section 4.3). The HEXACO model of personality includes a theoretically proposed altruistic/antagonistic dimension to personality. This thesis

proposes that the HEXACO has the theoretical advantage over the FFM in the assessment of behaviours that help or harm an employer. Additionally the thesis proposes that the HEXACO's ability to provide an assessment of an individual's propensity to exploit others through the honesty-humility domain, in particular, is likely to see this personality model explain more variance in the CWB and OCB constructs than would be explained by the FFM.

There are several studies that have explored the predictive validity of the HEXACO with CWB, and a range of studies have established the HEXACO, and the honesty-humility domain in particular, as an effective predictor of CWB (Lee, Ashton, & de Vries, 2005; Lee, Ashton & Shin, 2005; Oh, Lee, Ashton, & de Vries, et al., 2011). There is, however, no empirical research that provides an assessment of the incremental validity of the HEXACO over standard operationalisations of the FFM in the assessment of CWB and its individual and organisational dimensions. An assessment of the incremental validity would determine if the HEXACO was more able to predict the employment suitability dimensions of CWB and OCB than the FFM was. Further, the predictive validity of each of the FFM domains with OCB has been established (Sackett, et al., 2006), but the literature is lacking an examination of the HEXACO domains with the OCB construct.

As noted in section 1.1.1, an aim of the thesis is to determine the most parsimonious assessment of CWB and OCB and will test the predictive validity of the FFM and the HEXACO in this regard. There is, however, strong empirical support for the predictive validity of dispositional tendencies that are not directly assessed by either of these broad measures. In particular, trait anger and self-control have strong empirical support in their predictive validity for a CWB outcome (Fox & Spector, 1999; Douglas and Martinko, 2001; O'Brien & Allen, 2008; Marcus & Schuler, 2004; Bechtold, Welk, Hartig, & Zapf, 2007).

Trait anger is an individual's tendency to experience anger over time and context (Spielberger, 1996; Douglas & Martinko, 2001) and self-control is an individual's propensity to assess the longer-term consequences of his or her actions (Spector, Fox & Domagalski, 2006). The strength of the empirical research demonstrating the relationships between these variables and the CWB criterion indicates an additional requirement to consider these personality variables in a study that is designed to identify the most parsimonious assessment of CWB. Several researchers have demonstrated that the emotionality and agreeableness domains of the FFM share significant variance with the trait anger construct (Gallo & Smith, 1997; Ruiz, Smith, & Rhodewalt, 2001; Sharpe & Desai, 2001; Whiteman, Bedford, Grant, Fowkes, & Deary, 2001; Sanz, García-Vera, & Magán, 2010) and emotionality and conscientiousness share significant variance with and the self-control construct (McCrae & Lockenhoff, 2010). The broad measures of personality may therefore provide an adequate assessment of the trait anger and self control constructs in the prediction of CWB and this is an area of empirical investigation in this thesis.

In sum, there are several gaps in the CWB and OCB literature that are addressed in the current thesis. In particular, the literature does not provide an assessment of the potential incremental validity that might be gained by the HEXACO over standard operationalisations of the FFM in the assessment of CWB and its interpersonal and organisational dimensions. Further, the literature does not provide evidence of the ability of either the FFM or the HEXACO to account for the variance of the trait anger and self control dispositional tendencies in the prediction of CWB and its dimension. In relation to the OCB element of employment suitability, the literature does not include empirical evidence of the predictive validity of the domains of the HEXACO with the OCB construct, and consequently, it does not provide an assessment of the potential incremental validity of the HEXACO over the

FFM in the prediction of this important employment suitability domain. These identified gaps in literature, in addition to the perceived theoretical advantages of the HEXACO over the FFM are elaborated and addressed in the following chapters.

The identification of a personality instrument that provides the most parsimonious assessment of the predictors of CWB and OCB and their interpersonal and organisational factors will provide employers with a selection tool that allows for the valid but efficient assessment of important occupational outcomes.

1.5 Other Considerations with the use of personality measures in employment selection

Whilst one aim of the thesis is to determine the most parsimonious assessment tool and CWB and OCB, the use of personality tools in employment selection requires specific considerations regarding the context of their use. This section details the requirement to assess several *context specific* considerations in the identification of a personality instrument that provides the most parsimonious assessment of employment suitability.

The employment selection context, or taking psychological tests for recruitment purposes, has the potential to impact on the psychometric properties of personality tests. Personality tests are typically developed and tested on populations who complete it voluntarily and who are unlikely to have anything to gain from completing the instrument one way or another. The use of personality instruments in personnel selection adds an additional layer of contextual demand to an individual's response on these instruments: the individual is taking the test with the hope of gaining a position. This change in contextual demand requires that the personality instruments are appropriately validated on an employment seeking population. In

particular, there is the requirement to ensure the maintenance of the relevant factor structure of the instrument with the employment seeking population. In addition there is the requirement to consider the influence of the context on normative data for the instrument. Further, there is evidence that individuals can and do distort their dispositional tendencies in an employment selection context (Hough, Eden, Dunnette, Kemp & McCloy, 1990; Barrick & Mount, 1996; Ellingston, Sackett & Hough, 1999; Rothstein & Goffin, 2006) in order to present themselves in a positive light. This is typically referred to as positive impression management. There is further evidence to suggest that this distortion is a function of personality substance and not a responding bias, and therefore does not impact on the criterion related validity of occupational performance (McCrae & Costa, 1983; Nicholas & Hogan, 1990; Ones et al., 1996). There is, however, minimal evidence that has assessed the impact of this personality distortion when the criterion is CWB and OCB. Whilst it is likely that the findings relating to occupational performance will be replicated when the criterion is CWB and OCB, there is the requirement for empirical data to support this proposition.

There is the further requirement that the personnel selection literature address the ‘bandwidth fidelity’ debate when the criterion variables are CWB and OCB. The bandwidth fidelity debate centres around whether broad or specific personality attributes are better predictors of criterion variables of interest (Ones & Viswesveran, 1996; Sitser, van der Linden & Born, 2013). Each side of the bandwidth fidelity debate provides compelling theoretical and empirical evidence that supports use of dispositional variables at both the broad and narrow level (Ones & Viswesveran, 1996; Ashton, 1998; Paunonen, Rothstein & Jackson, 1999). Assessments of the higher order personality constructs (e.g.: emotionality, extraversion, agreeableness, openness and conscientiousness) are typically considered broad level assessments. Narrow level personality assessments are typically assessments at the more

specific or detailed level and are smaller in content spectrum and generally have more concrete behavioural references (Ones & Viswesvaran, 1996; Barrick & Mount, 2003; Jenkins & Griffith, 2004). In order to identify the most parsimonious assessment for employment suitability there is the requirement to address the bandwidth-fidelity considerations with respect to the most efficient but valid measure of employment suitability with the employment suitability variables of CWB and OCB.

1.6 Overview of the Chapters

Chapter two provides a detailed summary of the dimensional structure of CWB and outlines the empirical evidence supporting the dimensionality. It provides an overview of the stress-emotion model (Fox & Spector, 2005) of CWB and outlines the empirical evidence for dispositional predictors of CWB. Chapter two proposes that the theoretical explanation of the FFM does little to, in an a priori sense, reason for the existence of each of the personality dimensions and there is therefore the requirement to rely on the empirical evidence of the predictive validity of the FFM with CWB rather than on the theoretical links between this model and causal models of CWB. Chapter two then analyses the evidence supporting the dispositional predictors for CWB and concludes that an expansion of the CWB research is required to account for relevant dispositional predictors of CWB and its interpersonal and organisational dimensions.

Chapter three is a theoretical chapter and provides a detailed summary of the OCB. It outlines the relevant dimensional structure of this concept and argues that employers are likely to be optimally assisted by identifying the dispositional predictors of CWB at the global and dimensional level. The chapter argues that the theoretical models for OCB support

the influence of pro-social dispositional tendencies in an OCB outcome. Chapter three concludes by arguing the need for research that is able to inform employers of the relevant dispositional predictors for OCB and its interpersonal and organisational dimension.

Chapter four introduces the six factor model of personality; the HEXACO. It outlines how the model was derived and articulates the theoretical basis that has been proposed to explain the existence of the six domains. The chapter then argues that the HEXACO's ability, theoretically and empirically, to provide an assessment of antagonism versus altruism and the willingness to exploit others is likely to make it a superior model in the assessment of both CWB and OCB. Chapter four outlines the empirical evidence supportive of the HEXACO's ability to predict CWB and it details the lack of empirical research for the HEXACO in the OCB domain. It argues that from a theoretical standpoint the HEXACO is likely to provide the most parsimonious assessment of CWB and OCB but details the requirement to evaluate it against other established and important dispositional predictors of CWB and OCB.

Chapter five outlines considerations for the potential for socially desirable responding in applicants' completion of personality tests in the employment selection context. It identifies the empirical evidence that suggests that individuals can and do alter their responding on personality instruments in an employment selection context. Chapter five details the competing theories that the altered responding seen in employment selection is a form of response bias and the counter argument that the responding is actually a substantive personality function that has shared variance with other relevant dispositional predictors. The chapter concludes by detailing a process that tests whether the relevant personality predictors provide a valid and reliable assessment of CWB and OCB that is not significantly distorted by response bias. This chapter argues that there is a lack of evidence with the criterion variables

of CWB and OCB to determine the potential effect of impression management on these criteria and argues that in order to ensure the applicability of personality tests in personal selection content, there is the requirement to ensure the maintenance of the factor structure of the instrument, consideration of the normative changes due to context and also the requirement to assess the impact of impression management on the criteria of interest; in this case CWB and OCB.

Chapter six reviews the bandwidth fidelity debate in the personnel selection literature. This debate centres on competing positions that advocate for assessment at the broad domain level of personality and the counter position that advocates for assessment at the narrow facet level. The chapter argues that there are equally strong theoretical views to support both positions and it identifies that there is a lack of empirical evidence assessing these competing positions when CWB and OCB are the outcome variables. The chapter argues that it is likely that facet level assessment will provide increased criterion related validity and proposes to contribute to the empirical literature with such an assessment.

Chapter seven is the first of the empirical chapters and focuses on assessing the parsimony of the HEXACO over the FFM in the prediction of CWB. It reprises the theoretical and empirical evidence, and outlines the study that was conducted to determine if the HEXACO provides this parsimonious assessment. It finds that both the HEXACO and the FFM explain significant variance in the CWB outcome variable and it concludes that there is little difference between the two in the amount of variance that is accounted for. The chapter also concludes that the predictive validity of both the HEXACO and the FFM models for the CWB is significantly improved by an assessment of self-control and trait anger.

Chapter eight details the empirical study that was carried out to determine if the HEXACO provides a more parsimonious assessment of OCB than the FFM. It revisits the theoretical and empirical literature and details the empirical study. It concludes that like CWB, the HEXACO and the FFM account for comparable variance in the OCB outcome variables and one cannot reasonably be considered to provide a more parsimonious assessment than the other.

Chapter nine details the empirical analysis conducted to consider the context specific requirements of using personality assessment tools in personnel selection. In particular it reviews the theoretical and empirical evidence on socially desirable responding and the bandwidth fidelity debate. The empirical study concludes that the factor structures of both the FFM and the HEXACO are maintained in the employment selection context, it demonstrates that there are normative changes for both the FFM and the HEXACO when used in an employment selection context, and argues that positive impression management does little to decrease the criterion related validity of the HEXACO or the FFM for a CWB outcome. It does however, find that positive impression management contributes to the OCB outcome. In relation to the bandwidth fidelity debate the empirical analysis concludes that a composite of facet level assessments has greater predictive validity with each of the CWB and OCB criteria, however this increased predictive validity comes at the price of increased complexity and number of predictive dimensions.

Chapter ten provides an overview of the empirical evidence presented in this thesis. It concludes that the domains of the HEXACO and the FFM both provide valid predictors of the employment suitability domains of CWB and OCB. It further concludes that both broad and narrow personality measures are comparable in the amount of variance they explain in both CWB and OCB. It notes that the predictive validity of CWB and its interpersonal and

organisational dimensions are likely to be improved with the addition of trait anger and self control measures to a broad personality measure. The chapter summarises the practical advice for applied psychologists including reinforcing the requirement to use local norms, and concludes that the use of personality assessment tools in personnel selection requires the balance of a number of considerations including predictive validity and ease of interpretation. This chapter details the limitations of the current study and discusses ways that these limitations may be overcome in future research. It notes the limitation of the correlational design of the current study, the fact that the sample may not be wholly age and gender representative of the employment seeking population and the positive impression management measure used in the current study had poor internal consistency.

The appendices to the thesis include additional statistical analyses not reported in the results sections of the empirical chapters.

This thesis provides a significant contribution to the personnel selection literature by providing clear evidence of the comparable predictive validity of both the FFM and the HEXACO in an employment selection context aimed at determining an individual's propensity for CWB and OCB. It identifies the factors that increase the predictive validity of dispositional assessment of these employment domains but also indicates the potential increased interpretative complication that may result from the increased validity. It provides practitioners with practical strategies to assist employers in the selection of candidates who are likely to provide a positive contribution to the workplace.

CHAPTER 2

COUNTERPRODUCTIVE WORK BEHAVIOUR: AN EXAMINATION OF THE THEORETICAL AND EMPIRICAL LITERATURE

2.1 Introduction

The CWB literature has seen considerable expansion in the last 20 years with significant advances made in the identification of both situational and dispositional predictors for CWB. This chapter provides an overview of the dimensional models of CWB, outlines the stressor-emotion causal model of CWB (Spector & Fox, 2005) and summarises the empirical evidence on the dispositional predictors of CWB. It argues that the use of an assessment of the dispositional predictors for CWB provides employers with information that is directly relevant to personnel selection decisions, enabling the hiring of candidates who are less likely to engage in behaviours with the potential to harm their co-workers and damage the reputation and productivity of the organisation.

2.2 Counterproductive Work Behaviour Definition and Impact

As noted in section 1.2, CWB is typically defined as a range of employee behaviours that are voluntary, intentional and contrary to the interests of the work unit or organisation (Hogan & Hogan, 1989; Bennett & Robinson, 2000; Sackett & DeVore, 2001; Hakstian, Farrell, & Tweed, 2002; Penney, Hunter, & Perry, 2011). The term CWB is used relatively interchangeably in the I/O literature with the phrases *antisocial work behaviour* and *workplace deviance* (Bennett & Robinson, 2000; Lee & Allen, 2002; Berry, Ones, & Sackett, 2007). In order to provide consistency with terminology, this thesis will refer to studies that have assessed CWB, but labelled them as antisocial work behaviour or workplace deviance, as CWB.

As the body of research around CWB develops, there is increasing evidence suggesting that an assessment of an individual's potential for CWB, and the recruitment of a workforce who are less likely to engage in CWB, will have significant benefits for an employer in their hiring decision. Indeed, CWB is an expensive and pervasive problem for employers. Research indicates those that engage in one form of CWB are likely to engage in others (Podsakoff & MacKenzie, 1997; Sackett & DeVore, 2001; Ones & Viswesvaran, 2003; Marcus & Schuler, 2004). The negative impact of CWB on an organisation and its members has the potential for wide ranging consequences. It has been demonstrated that CWB has a significant negative impact on work unit performance (Dunlop & Lee, 2004), and has the potential to affect the reputation and credibility of a work unit as well as the morale of employees (Hakstian, et al., 2002).

It is estimated that workplace bullying which is one form of CWB, costs the Australian economy between \$6 billion to \$36 billion per year and the average compensation payment for an individual being bullied is over \$41,000 and the victim has, on average, 25 weeks off work as a result of the bullying (House of Representatives Standing Committee on Education and Employment, 2012). A personnel selection model that assists employers to identify and assess factors within individuals that predict their potential for CWB will provide valuable information to enable an employer to make personnel selection decisions that benefit the organisation and the well-being of people within the organisation.

2.3 Dimensional Model of CWB

The dimensionality of CWB has received considerable focus in the literature (Hollinger & Clark, 1983; Robinson & Robinson, 1995; 1997; Bennett & Robinson, 2000; Gruys, 1999; Sackett & DeVore, 2001). Empirical studies have assessed the construct at three main levels;

a broad general level, a dimensional level and a discrete behavioural level. The identification of predictors for CWB at the higher dimensional or construct level, allows for the detection of factors that predict a group of related behaviours and also allows for generalisation of predictors across the broad construct (Bennett & Robinson, 2000). The following paragraphs argue that empirical data supports the conceptualisation of CWB as a hierarchical construct with a global or overarching construct at the top, relevant dimensions at the next level and discrete behaviours at the lower level.

Hollinger and Clark (1983) played an instrumental role in the emergence of research in the CWB domain. They conducted a detailed and extensive study of CWB in 47 organisations across three industries, collecting self-report questionnaire data and conducted interviews with managers and employees. Their results indicated that CWB, as a construct, could be used to explain many discrete behaviours, and importantly, these behaviours could meaningfully be categorised into two groups labelled property deviance (e.g., theft) and production deviance (e.g. slow or sloppy work, misuse of leave or drug and alcohol misuse). Hollinger and Clark's (1983) results demonstrated a significant relationship between these two categories across the three industries in which the researchers assessed the construct (retail: $r = .48, p < .001$; hospital: $r = .45, p < .001$ and manufacturing: $r = .39, p < .001$). They noted that these relationships suggested that individuals who engaged in more property theft were also more likely to engage in production deviance. The ability for discrete CWB behaviours to be meaningfully grouped, coupled with empirical support indicating a strong relationship between the groups, suggested that CWB was a multi-faceted construct sitting under an overarching CWB construct.

The empirical research on the dimensional structure of CWB was expanded by Gruys (1999), who reviewed the CWB literature and identified 87 individual CWBs. She established that

these behaviours could be meaningfully and statistically grouped into 11 categories. These categories included theft and related behaviour, destruction of property, misuse of information, misuse of time and resources, unsafe behaviour, poor attendance, poor quality of work, alcohol use, drug use, inappropriate verbal actions and inappropriate physical actions. Gruys (1999) conducted a principal components factor analysis on these categories which provided support for a single CWB factor over-arching the categories.

Taken together, Hollinger and Clark (1983) and Gruys (1999) provide support for an overarching construct of CWB. Both found support for factors or dimensions of CWB with discrete CWB's underlying the dimensions or factors. These investigators, however, reached different conclusions on the factor or dimensional structure of CWB. Hollinger and Clark (1983) concluded that it was property deviance and production deviance whilst Gruys (1999) concluded 11 different categories. Further clarity on the dimensionality of CWB was provided by Bennett and Robinson (Robinson & Bennett, 1995;1997; Bennett & Robinson, 2000) who developed a model of the dimensionality of CWB from a theoretical, rather than the empirical standpoint previously used by Hollinger and Clark (1983) and Gruys (1999). Robinson and Bennett (1995; 1997; Bennett & Robinson, 2000). They argued that behaviour is typically clustered into groups that are functionally equivalent. Consequently, they proposed that CWBs could be reliably categorised based on the target of the behaviour: individuals within the organisation or the organisation as a whole.

Bennett and Robinson (2000) proposed that CWB targeted towards individuals within the organisation (CWBI) included harassment and verbal or physical aggression towards others in the workplace, whilst, CWB targeted at the organisation (CWBO) involved the misuse of company information and resources, theft and poor attendance. These researchers argued that

motivations for engaging in behaviours directed at individuals were different to the motivations for CWB directed at the organisation. They demonstrated that CWBI and CWBO had different relationships with other similar constructs such as property deviance, production deviance and antagonistic work behaviours and used this divergent validity to argue for the CWBI/CWBO factor structure. Bennett and Robinson (2000) developed a 19-item scale to measure the interpersonal and organisational dimensions of CWB. Whilst it received little focus from Bennett and Robinson (2000), Sackett and DeVore (2001) reported that the CWBI and CWBO scales of Bennett and Robinson's (2000) measure were highly correlated ($r = .68$). This correlation suggests an over-arching general CWB construct is likely to underlie both interpersonal and organisational dimensions.

Sackett and DeVore (2001) reviewed a range of empirical studies that had established different dimensional structures for the CWB construct. They found correlations at the $r = .30$ level between the individual counterproductive behaviours and higher correlations, at the $r = .50$ between composites of CWB behaviours. Given the inter-correlations between individual CWBs at one level and the proposed dimensions of CWB at the next, they advanced a hierarchical model of CWB with an overarching factor of counterproductivity as the general construct (global CWB), organisational and interpersonal dimensions of CWB under the global structure and then specific CWB behavioural domains under these dimensions. See Figure 2.1.

Sackett and DeVore (2001) suggested that employers, who were interested in selecting employees who are less likely to engage in CWB, would aim to assess factors that predict the construct at the highest level of the hierarchy and they proposed that if an intervention is

required to address CWB, the employer may be better focussed at the dimensional level or behavioural level.

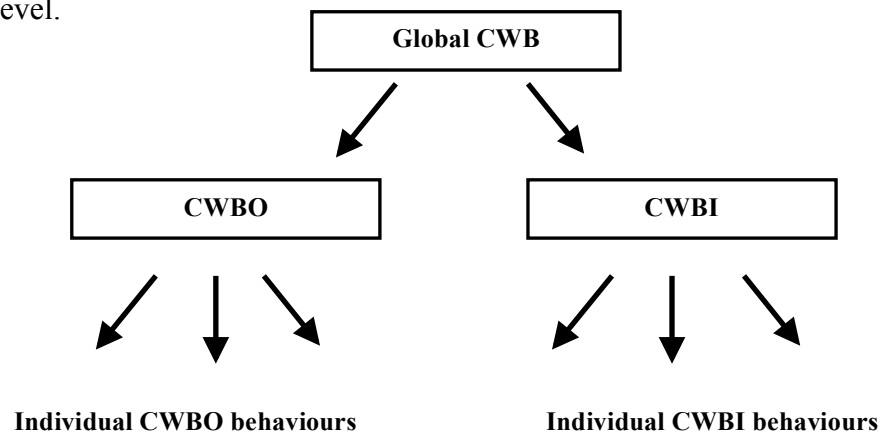


Figure 2.1. Graphical representation of Sackett and DeVore's (2001) hierarchical model of CWB.

To summarise, the literature on the dimensionality of CWB supports conceptualisation of CWB as a hierarchical construct. Empirical evidence supports a dimensionality based on the target of the CWB (interpersonal or organisational) (e.g.: Bennett & Robinson, 2000). The development of an employment suitability assessment process that is able to identify dispositional predictors for global CWB as well as the predictors for the dimensional level of the target of the behaviour (interpersonal or organisational) would allow employers to have confidence in the assessment of an individual's potential for CWB in general. Identification of the antecedents for CWB targeted at individuals or the organisation would then allow employers to consider their tolerance for CWB directed at different targets; individuals and the organisation, and it would also allow employers to target appropriate intervention strategies. For example, an individual may be assessed as having the dispositional tendencies to indicate an elevated risk for CWB (interpersonal and/or organisational) but he or she has high job performance suitability, either because of specialist skills, knowledge or high scores on relevant task performance measures. The employer may decide that the individual has the unique job skills required by the organisation and then target strategies to manage the

particular CWB risk. The employer is more likely to be able to target these strategies if the risk is known to exist on one or other of the CWB dimensions (see Berry, Ones, & Sackett, 2007).

One aim of this thesis is to develop a parsimonious assessment of employment suitability; CWB constitutes an aspect of the employment suitability construct, and, in order to determine the tool or tools that provide the most parsimonious assessment for CWB, it is necessary to consider the construct at its global, and interpersonal and organisational dimensional levels. There would be a significant advantage to employers in identifying the dispositional predictors from personality tools that are able to provide predictive information on the CWB risk at the interpersonal, organisational and global level of the construct. Assessment of CWB as a hierarchical construct is therefore likely to inform employers of the dispositional predictors of global CWB as well as the factors that predict the relevant dimensional level.

2.4 Theoretical Models of CWB

Researchers have developed different theoretical models for CWB as they strive to understand and represent the causal factors of this construct (Douglas & Martinko, 2001; Martinko, Gundlach & Douglas, 2002, Spector & Fox, 2005; Jenson, Opland & Ryan 2010). The following paragraphs outline some of the more prominent models. The argument is then made as to why this thesis relies on Spector and Fox's (2005) stressor-emotion model of CWB to explain the dispositional or personality predictors most able to provide a parsimonious assessment of the antecedents to CWB.

Douglas and Martinko's (2001) individual differences model of CWB proposed a number of individual attributes as important predictors to workplace aggression. These attributes included trait anger, attribution style, self control, negative affect, attitudes towards revenge and previous experiences of workplace aggression. This model focuses largely on aggression which may serve to limit its applicability to non-interpersonal related aspects of CWB, or CWBO behaviours in particular.

The causal reasoning model of CWB (Martinko, Gundlach & Douglas, 2002) brings together a number of other theoretical perspectives that accounted for CWB. This model proposes that a range of situational and individual difference variables contribute to an individual's cognitive processing about workplace events. Specifically, the model proposes that the individual's perceptions of fairness and their attribution style contributes to emotions and behaviours that have the potential to result in CWB. The causal reasoning model of CWB allows for consideration of a wide range of situational and dispositional variables in the prediction of CWB. The specific dispositional variables identified as antecedents to CWB by this model include a collation of the *range* of dispositional variables that have been established as predictors in the numerous empirical studies investigating CWB. The *causal link* between these dispositional predictors and CWB is somewhat less well defined and hence this model, whilst identifying the antecedents, does not provide the causal mechanism that would allow a researcher, a priori, to consider one personality assessment tool as more parsimonious than another.

Jensen et al (2010) drew on the research in the 'psychological contract' (Rousseau, 1989) domain to postulate a causal theory for CWB. The psychological contract theory proposes that employees have a set of beliefs about the mutual obligations that they have with an

employer. The expectations that individuals have about what they will contribute and what they expect the employer to do in return are key elements of a psychological contract. Jensen et al (2010) proposed that a breach of the psychological contract in the employment domain by the employer may lead to CWB because of the individual's effort to restore balance in the relationship between themselves and the employer. The application of the psychological contract theory to considerations of CWB allowed for increased understanding of employer/employee relationship and the expectation dynamic as antecedents to CWB. This theory of the causal mechanisms for CWB is likely to be optimally used for decreasing CWB in individuals already employed in the workplace. It does not provide employers with information that allows for the parsimonious assessment of the dispositional predictors for CWB in a personnel selection process. It also does not capture those CWB that arise without such breaches in the psychological construct.

Spector and Fox's (2005) stressor-emotion model of CWB provides a comprehensive causal model for CWB that allows for the consideration of a range of contextual and individual factors as precursors for CWB (see Figure 2.2). The stressor-emotion model is likely to have the advantage over models outlined in this section as it focuses on the factors within the individual that are able to predict engagement in CWB and theorises a causal link between these factors and CWB. It is these factors that an employer is trying to predict in the employment selection context.

The stressor-emotion model builds on other models postulating that human aggression results from frustration. These models propose that aggression is the behavioural outcome that occurs when there is a strong anger reaction because the individual is thwarted in their pursuits (e.g. Dollard, Doob, Miller, Mowrer, & Sears, 1939). Spector and Fox (2005)

expanded Dollard et al's (1939) frustration-aggression models by proposing that there are a *range* of negative emotions in addition to anger that have the potential to lead to CWB. Their stressor-emotion model postulates that when an environmental stressor impacts on the individual, the individual appraises the environmental stressor which creates the potential for it to be perceived as stressful. The perceived stressor then leads the individual to experience negative emotion which, in turn, leads to CWB. The CWB is an attempt by the individual to balance in the relationship.

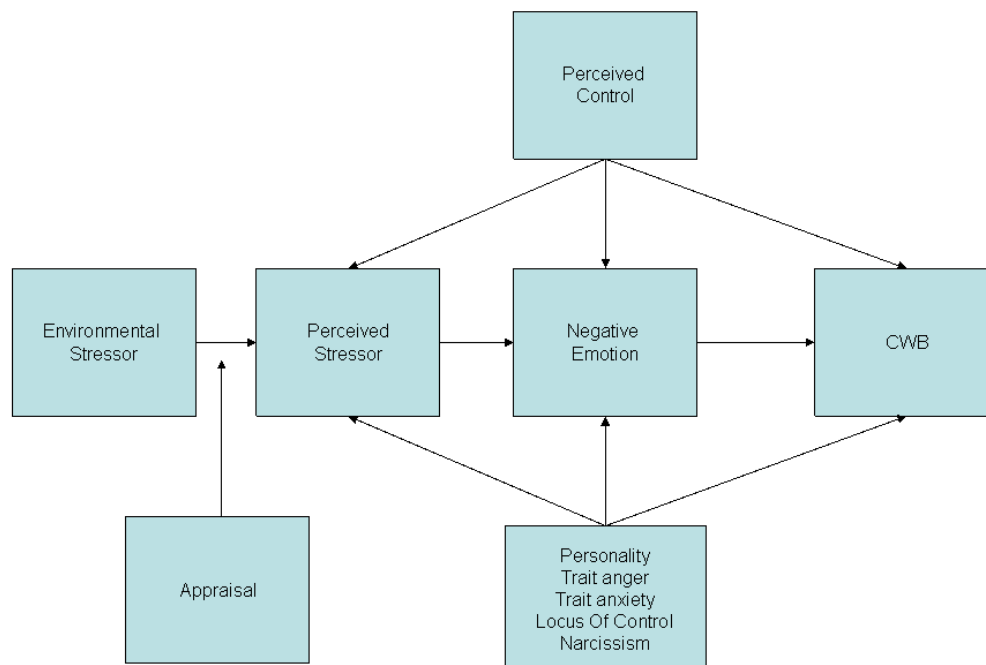


Figure 2.2. Stressor-Emotion Model of CWB (Spector & Fox, 2005, p.226).

The stressor-emotion model proposes that the level of control or influence that an individual perceives he or she has impacts on the potential for CWB at a number of points. The first impact of perceived control is an individual's perception of the stressor. An individual who has the resources and the capacity to control a situation is less likely to perceive a stimulus as stressful which then decreases the likelihood of CWB. In this scenario, perceived control

serves as a moderator for CWB. Perceived control also impacts directly on negative emotion and on CWB. Spector and Fox (2005) argued a low level of perceived control over a situation is associated with negative emotion and feelings of powerless. The model proposes that the individual then uses engagement in CWB as a mechanism to restore personal control to a situation where they felt powerless.

Fox and Spector's (2005) propose that personality is "vitally important" (p. 228) in a CWB outcome. It is widely evident across the psychological literature that individuals who are exposed to the same set of conditions will react differently. Spector and Fox (2005) proposed that an individual's personality directly influences how he or she is likely to perceive a stressor, the likelihood of a negative emotional response and CWB itself. The model proposes that trait anger, trait anxiety, locus of control and narcissism are particularly influential in a CWB outcome. Additionally, it is suggested that the influence of these personality variables is largely due to their relationship with control and emotion, which are other key elements in the stressor-emotion model (see Figure 2.2).

In summary, the stressor-emotion model provides a theoretical framework that considers the impact of a range of situational and dispositional tendencies on CWB. This model provides a framework that identifies the causal relationship between dispositional tendencies and CWB. This allows employers to contextualise how dispositional tendencies impact on CWB directly as well as their impact on other variables that contribute to CWB. A personnel selection process that allows employers the opportunity to assess the dispositional tendencies predicting CWB will ensure that personnel selection decisions result in the recruitment of a workforce that is less likely to engage in CWB, and hence, cause less harm to the organisation and individuals in the organisation. Whilst the stressor-emotion model proposes a number of personality or dispositional traits that it considers important (trait anger, trait

anxiety, locus of control and narcissism) it does not exclude the influence of other personality variables. The next section reviews the *range* of dispositional traits that have been established as effective predictors of CWB and, therefore, suggests a breadth of dispositional factors that have the potential to aid employers in optimal personnel selection decisions.

2.5 Dispositional Predictors of CWB

The psychological and business literature has seen much research on individual personality or dispositional influences affecting employee behaviour. As noted in section 2.4 there is theoretical support for the dispositional influences for a CWB outcome. Whilst the stressor emotion model suggests the consideration of dispositional tendencies that have the potential to lead to negative emotional states, the identification of a parsimonious dispositional assessment for CWB requires the evaluation of these and other empirically validated dispositional predictors. The evaluation of the range of dispositional predictors will ensure the development of an employment selection model that provides a comprehensive assessment of such predictors of CWB and its dimensions. The following section outlines the primary personality predictors identified in the empirical literature as antecedents to CWB.

2.5.1 Five Factor Model of Personality

The FFM of personality was derived from the lexical analysis of personality structure. The lexical hypothesis (Galton, 1884; cited in Goldberg, 1990) proposed that personality traits that are important become part of the language, and the more important the trait the more likely it is to be coded into a single word. In the lexical approach, dictionaries have been reviewed to develop lists of the personality adjectives. The seminal lexical study in the

English language was conducted by Allport and Odbert (1936). These researchers developed a list of almost 18000 personality adjectives. In investigation of the factor structure of personality, Cattell (1943) used a subset of 4500 of these terms which he reduced to 35 variables. Cattell's list of 35 variables was the basis for the development of the FFM and was used by a number of researchers to establish the validity of the FFM personality (e.g. Fiske, 1949; Norman, 1963; Digman & Takemoto-Cock, 1981; see John & Srivastave, 1999, pp.3-7 for review).

The personality lexicon was reviewed by Norman (1967; cited in Wiggins, 1979) who used Allport and Odbert's (1936) original lexicon data and expanded it to include adjectives from the contemporary dictionary. He then culled the adjectives by removing overlapping items and ambiguous or unfamiliar terms. Goldberg (1990) used a subset of terms from Norman's list to explore the factor structure of personality. He conducted a series of different statistical analyses which clustered or reduced the adjectives to a smaller set, the analysis revealed a reliable pattern that clustered the adjectives into five meaningful and statistically sound categories. The factors, or domains, have been given slightly different labels by different researchers and these, along with the adjectives or facets that are commonly cited to make up the domain, are represented in Table 2.1.

Table 2.1:

The Five Factors of Personality and their Relevant Adjective Descriptors³

Factor	Adjective descriptor for high scorers	Adjective descriptor for low scorers
Emotional stability/ Emotionality/ Neuroticism	Relaxed, unemotional, easy-going, excitable	Moody, jealous, possessive, anxious, touchy, high strung
Extraversion/ Surgeoncy	Talkative, extraverted, sociable, assertive, enthusiastic, verbal	Withdrawn, silent, introverted, shy, reserved, inhibited
Intellect/ Imagination/ Openness	Intellectual, complex, philosophical, innovative, unconventional	Simple, conventional, uninquisitive, unintellectual, shallow
Agreeableness	Sympathetic, kind, warm, cooperative, sincere, compassionate	Cold, harsh, rude, rough, antagonistic, callous
Conscientiousness	Organised, systematic, efficient, precise, thorough, practical	Careless, sloppy, absent- minded, haphazard, disorderly, unreliable

2.5.1.1. Measuring the FFM

At the same time researchers were exploring the factor structure of personality other researchers were attempting to develop measures that would capture and quantify individuals' dispositional tendencies. Costa and McCrae (1980; 1985; 1999; McCrae & Costa, 2010) are prominent researches in this second field. Costa and McCrae (1980) developed the NEO Personality Inventory. This measure, in the earlier versions, attempted to capture personality at a higher order level: the first edition of their personality assessment measure assessed the domains of neuroticism, extraversion and openness (Costa & McCrae, 1980). These researchers later revised the measure to include the agreeableness and conscientiousness domains (NEO-PI, Costa & McCrae, 1985) and later further revised the instrument to include

³ Ashton and Lee (2007, p. 154)

six facets for each of the five domains (NEO-PI-R, Costa & McCrae, 1991). A recent revision has kept the five domains and 30 facets of the instrument but has included adolescent norms and made some adjustments to items that had previously used ambiguous language (NEO-PI-3, McCrae & Costa, 2010). The factors and facets assessed by the NEO-PI-3 are detailed in Table 2.2.

Table 2.2

<i>The NEO-PI-3 Domains and Facets</i>		
NEO-PI-3 Domains	NEO-PI-3 Facets	
Neuroticism	Anxiety Angry Hostility Depression	Self-consciousness Impulsivity Vulnerability
Extraversion	Warmth Gregariousness Assertiveness	Activity Excitement-seeking Positive emotions
Openness	Fantasy Aesthetics Feelings	Actions Ideas Values
Agreeableness	Trust Straightforwardness Altruism	Compliance Modesty Tender-mindedness
Conscientious	Competence Order Dutifulness	Achievement Striving Self-discipline Deliberation

2.5.1.2 Theoretical Model for the Five Factor Model

As detailed in section 2.5.1 of this chapter, the FFM is an empirically derived taxonomy of personality. Criticism has, therefore, been directed at exponents of the FFM for its lack of theoretical grounding. Block (2001), in his criticism of the FFM, noted that “psychological results always require a psychological interpretation; they do not exist by themselves”

(p.100). He argued that it was not sufficient to continue to employ the FFM as a taxonomy of personality without a theoretical understanding that contextualised or reasoned for the existence of this structure.

McCrae and Costa (1996; 2008) attempted to address the lack of theory for the FFM with their development of the Five Factor Theory (FFT) of personality. This theory proposed that personality or ‘basic tendencies’ are a biological derived individual difference. The FFT proposes that these basic tendencies include the five domains of personality and these domains have a dynamic interaction with the ‘characteristic adaptations’ of personal strivings, attitudes and the self-concept. The FFT proposes that ‘characteristic adaptations’ interact with the environment to produce behaviour. See Figure 2.3.

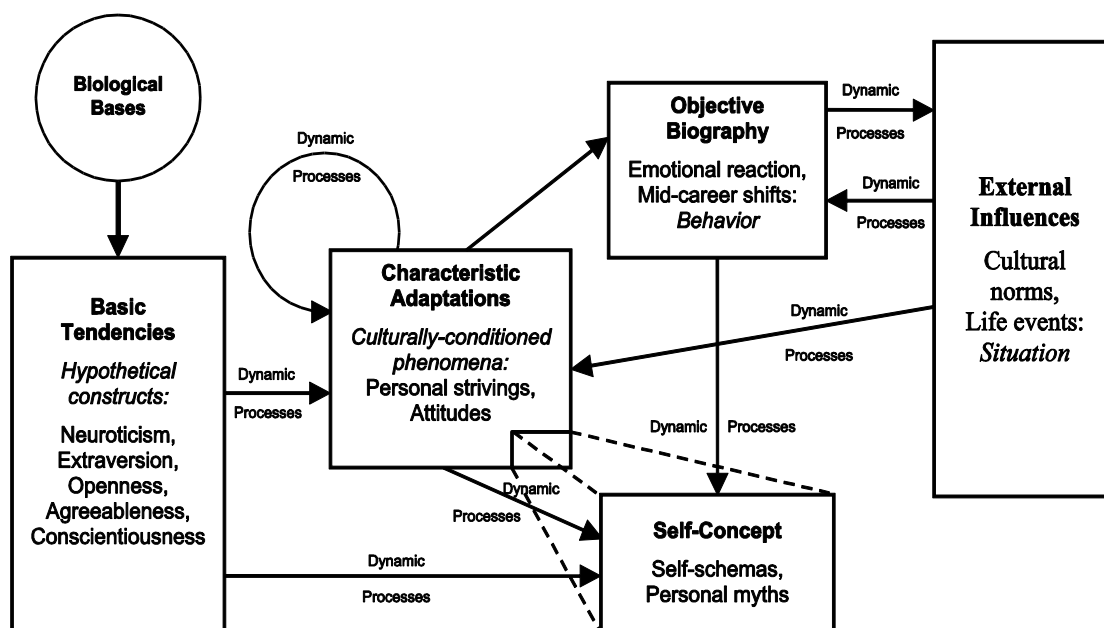


Figure 2.3: Graphical Representation of McCrae and Costa's (2008, p.170). Five Factor Theory of Personality.

McCrae and Costa (2008) proposed the FFT as a theoretical model to understand how personality develops as well as how it influences behaviour in specific circumstances. It has, however, been criticised as a theoretical model that would be applicable to any

conceptualisation of personality structure. Block (2001), in particular, noted that it was not an explanation that provided advancement into the unique understanding for the existence of the FFM; the FFT does not provide an explanation that accounts for the existence or purpose of any of the FFM domains and consequently a theoretical understanding of the existence of the FFM of personality continues to be lacking. It is difficult, therefore, to use the FFM from a theoretical position, to argue for its relevance or superiority in the prediction of specific experimental outcomes. It is therefore necessary to rely on the empirical results of the FFM in extrapolating its predictive validity for other constructs. The use of the FFM in the prediction of employment suitability domains of both CWB and OCB will consequently rely on the empirical rather than theoretical literature of the FFM.

2.5.1.3 Empirical Support for the FFM in the Prediction of CWB

Numerous studies have tested the predictive validity of the FFM domains as antecedents to CWB. The empirical evidence is best summarised by several meta-analysis studies that analysed the relationship between the domains of the FFM and CWB. Hough (1992; cited in Salgado, 2002) conducted a meta-analysis study to analyse the validity of a range of personality dimensions (although not specifically the FFM domains) to predict a group of CWBs that she labelled ‘irresponsible behaviour’. Her analysis found that ‘achievement’ and ‘dependability’, both of which would be considered as narrower facets of the conscientiousness domain of the FFM, had a significantly negative relationship with her CWB criterion variable. Hough also established a positive relationship between emotionality and CWB. This study demonstrated the significance of the emotionality domain and aspects of the conscientiousness domain of the FFM for CWB. It did not, however, analyse the predictive validity of the other domains of the FFM.

Salgado (2002) addressed this issue in his meta-analysis that assessed the predictive validity of each of the domains of the FFM domains for a range of negative work behaviours including absenteeism, accidents, turnover and a category he termed 'deviant behaviours' which included CWB such as theft and disciplinary problems. Salgado (2002) found that none of the FFM domains were an effective predictor for absenteeism or accidents. He found corrected operational validity coefficients to indicate that emotional stability (.35), conscientiousness (.31) and agreeableness (.22) were effective predictors of (lack of) turnover and in relation to the CWB construct he found that conscientiousness (.26) and agreeableness (.20) were effective predictors of his (lack of) 'deviant behaviours' criterion. The meta-analysis indicated that the FFM domains of conscientiousness and agreeableness require consideration in the prediction of CWB. As noted in section 2.3, employers are likely to be most advantaged by identification of dispositional predictors for the global and dimensional levels of the CWB construct. Salgado (2002) did not, however, explore the predictive validity of the FFM domains on CWB at the interpersonal or organisational level.

Berry, Ones and Sackett (2007) addressed this issue by examining the predictive validity of the FFM for CWB at the level of the target of the behaviour (CWBI or CWBO). Whilst the purpose of Berry et al's., (2007) meta-analysis was to determine the validity of separating CWB into interpersonal and organisational deviance factors, the results provide informative data on the dispositional predictors for the global and dimensional levels of this construct. Berry et al's., (2007) analysis found a significant relationship between the two CWB constructs ($r = .62$) but concluded that the differing relationships between CWBO and CWBI and other variables supported the separability of the two constructs. Their analysis found little evidence of a relationship between the FFM domains of openness and extraversion with

either CWBO or CWBI. They found that the emotional stability domain had similar relationships with both CWBO and CWBI ($r = -.23$ and $r = -.24$) and agreeableness had a stronger relationship with CWBI ($r = -.46$) than CWBO ($r = -.32$) whilst conscientiousness had a stronger relationship with CWBO ($r = -.42$) than CWBI ($r = -.23$).

To summarise the literature, Berry et al's. (2007) meta-analysis lends support to constructing a personnel selection process that assesses the impact of dispositional variables at the dimensional level of the CWB construct: CWBI and CWBO. Salgado's (2002) analysis assessed the FFM domains as predictors of CWB but he did not assess these predictors against the separate CWBO and CWBI domains. Salgado (2002) found weaker relationships between some of the FFM domains and CWB than was found by Berry et al. (2007). The weaker relationships in the Salgado's (2002) analysis may be the result of combining the CWBO and CWBI domains into a broader CWB construct which could in turn dilute the effect of specific dispositional predictors. Therefore, based on the reviewed literature a personnel selection model aimed at determining a parsimonious tool to assess the dispositional predictors of CWB is likely to have a statistical and practical advantage by considering the CWB construct and the personality predictors of this at the global and dimensional level.

This thesis attempts to replicate the findings of Berry et al (2007). In particular, it is expected that there will be a significant relationship between the FFM domains of emotionality, conscientiousness and agreeableness, and CWB at the global construct level. It is also expected that there will be stronger relationships between the FFM domain of agreeableness and CWBI than CWBO and the relationship between the FFM domains of conscientiousness will be stronger for the CWBO domain than it is for the CWBI domain.

Whilst these meta-analytic studies have not demonstrated a link between extraversion and openness and CWB, there are several individual studies that have demonstrated the predictive validity of these FFM domains with CWB. A recent study compared the differential effect of each of the FFM on global CWB, OCBI, OCBO and a range of CWB behaviours (Bolton, Becker & Barber, 2010). The results of this study indicated significant relationships between each of the FFM domains, besides openness, and the global CWB measure. With reference to extraversion, the results indicated a significant negative relationship between extraversion and the global construct of CWB ($r = -.14, p < .05$) as well as CWBO dimension ($r = .18, p < .01$). The results of this study did not demonstrate a relationship between extraversion and CWBI.

Another recent study examined the relationships between personality variables, organisational justice, OCB and CWB for a range of occupational groups in Thailand (Chang & Smithikrai, 2010). The study did not assess the impact of dispositional variables on the target of the CWB (organisation or individual), but the results demonstrated that there were significant relationships between all FFM domains and the CWB construct. In relation to extraversion and openness, the study found a significant relationship between extraversion and global CWB ($r = -.36, p < .01$) and openness and global CWB ($r = -.29, p < .01$).

In summary, the meta-analytic studies that have explored the FFM dimensions as predictors of CWB have found a strong empirical link for the FFM dimensions of conscientiousness, emotionality and agreeableness with CWB (Salgado, 2002; Berry et al, 2007) and Berry et. al (2007) further clarified the predictive validity for conscientiousness, agreeableness and emotionality for both the global CWB and the interpersonal and organisational domains. Whilst extraversion and openness have not received support as predictors of CWB in these

meta-analytic studies there is a level of empirical support for the predictive validity of these domains with the CWB construct. Table 2.3 provides a summary of the empirical studies that support the predictive validity of the domains of the FFM with the CWB construct and its interpersonal and organisational dimensions.

Table 2.3

Summary of Empirical Studies Supporting Domains as Predictors of CWB and its Dimensions

Dispositional Predictor	Global CWB	CWBI	CWBO
Emotionality	Hough (1992) ^a	Berry et al. (2007) ^a	Berry et al. (2007) ^a
Extraversion	Bolton et al. (2010) Chang & Smithikrai (2010)		Bolton et al. (2010)
Openness	Chang & Smithikrai (2010)		
Agreeableness	Salgado (2002) ^a	Berry et al. (2007) ^a	Berry et al. (2007) ^a
Conscientiousness	Hough (1992) ^a Salgado (2002) ^a	Berry et al. (2007) ^a	Berry et al. (2007) ^a Lee et al. (2005a)

^a meta-analysis studies

2.6 Trait Anger and Self Control

As noted in section 2.5, there is a weight of empirical evidence at the individual study and meta-analytical level on the predictive validity of the domains of the FFM for CWB and its interpersonal and organisational dimensions. With the aim of determining the most parsimonious dispositional assessment of global CWB, CWBI and CWBO, there is also the requirement to consider the other dispositional predictors, outside of the FFM domains, that have strong empirical evidence and theoretical support of their predictive validity for CWB. To this end, this section of the chapter examines the empirical evidence on the predictive validity of the personality attributes of trait anger and self control for the CWB criterion.

The influence of trait anger and self control as predictors of CWB has received considerable support in the literature. Trait anger has been defined as an individual's tendency to experience anger over time and context (Spielberger, 1996; Douglas & Martinko, 2001); whilst self control related to an individual's propensity to assess the longer-term consequences of their actions (Spector, Fox & Domagalski, 2006). Individuals low in self control have difficulty inhibiting their behaviour and find it difficult to contain their emotions to manage frustration or disappointment.

The stressor-emotion model of CWB (Spector & Fox, 2005) accommodates and supports the influence of trait anger in a CWB outcome. In particular, the model explicitly identifies trait anger as a relevant dispositional predictor that contributes to the experience of negative emotion as well as to CWB directly (see Figure 2.2). Self control, whilst not specifically identified as a dispositional predictor in the stressor-emotion model can be considered as a personality variable that has the potential to cause frustration and disappointment which are negative emotions are directly associated with the model as motivators for action to redress perceived imbalance and hence likely to contribute to a CWB outcome as identified in the stressor-emotion model.

The following paragraphs outline the empirical support for the influence of trait anger and self control for CWB. Additionally, they detail the additional research that is required to as part of the development of a parsimonious tool to assess the dispositional predictors of global CWB and its interpersonal and organisational dimensions.

Fox and Spector (1999) explored the situational and dispositional predictors of CWB and its interpersonal and organisational dimensions. They found a strong relationship between trait anger and global CWB ($r = .59$), CWBO ($r = .57$) and CWBI ($r = .50$). Further support for

the trait anger CWB relationship has been demonstrated by Douglas and Martinko (2001), who explored the role of dispositional and attitudinal variables in predicting workplace aggression. These researchers demonstrated that individuals with higher trait anger scores were more likely to self report workplace aggression than those with lower trait anger scores.

The trait anger - CWB relationship was also established and clarified by O'Brien and Allen (2008), who conducted a study to determine the relative importance of the dispositional predictors of CWB and OCB. They found trait anger to be the most important predictor for self-reported CWBI ($r = .39$) and they found the FFM domain of conscientiousness was the strongest predictor of CWBO ($r = .45$), with trait anger remaining a significant predictor ($r = .31$). O'Brien and Allen (2008) did not investigate the domains in the FFM beyond conscientiousness and given that other research has demonstrated the importance of the agreeableness and emotional stability domains (see section 2.5.1.3), there remains the need to assess the predictive strength of these FFM domains against trait anger. As noted in section 2.5.1.3, emotionality, agreeableness, conscientiousness, and to a lesser extent openness and extraversion have been shown to be important predictors for global CWB and its interpersonal and organisational dimensions. Therefore, a personnel selection process aimed at providing a parsimonious assessment of CWB and its dimensions needs to evaluate the predictive validity of trait anger against other established predictors of CWB, CWBO and CWBI. A research aim of this thesis is to replicate previous research demonstrating the effectiveness of trait anger in the prediction of CWB and extend this research by exploring the incremental validity of trait anger over the already established FFM domain predictors.

The relationship between the dispositional tendencies of self control and CWB was demonstrated by a study that analysed the predictive validity of 24 dispositional and

situational antecedents to CWB (Marcus & Schuler, 2004). This study found that the best predictor of CWB from the 24 dispositional predictors assessed was self-control. Marcus and Schuler (2004) assessed CWB at the global level not at a dimensional or 'target' of the behaviour level and the predictive validity of self-control for CWBI and CWBO required exploration.

Bechtoldt, Welk, Hartig, and Zapf (2007) went part way to addressing the issues identified in Marcus and Schuler (2004). These researchers assessed the impact of perceived job demands, self-control and organisational justice on CWB. They used Bennett and Robinson's (2000) CWB measure (described in section 2.3) and were, therefore, able to assess the impact of these predictors on the target of the behaviour; the individual or the organisation. The results of this study demonstrated that self control was the most influential variable amongst the variables they assessed.

Another limitation of Marcus and Schuler (2004) and Bechtoldt et al (2007) is that neither included the FFM domains in their analysis of the dispositional antecedents for CWB, and as such the relative importance of self control, in relation to the domains of the FFM in the prediction of CWB, also remains to be established.

The research on trait anger and self control as dispositional predictors of CWB indicates that both variables are strong predictors of CWB and this research demonstrated the importance of assessing these variables in an employment selection process. As outlined in Chapter one, personnel selection processes require the use of valid and efficient prediction of the criterion of interest and there is some evidence to suggest that the FFM of personality is able to provide adequate assessment of both the trait anger and self control constructs (Gallo &

Smith, 1997; Ruiz, Smith, & Rhodewalt, 2001; Sharpe & Desai, 2001; Whiteman, Bedford, Grant, Fowkes, & Deary, 2001; Sanz, García-Vera, & Magán, 2010). These studies differed in the amount of variance within the trait anger construct that was accounted for by the FFM and also in the primary contributory domains. The studies collectively, however, found that the FFM, and the domains of emotionality and agreeableness specifically, were able to account for significant variance in the trait anger construct.

McCrae and Lockenhoff (2010) reviewed the literature on self control and the FFM. They explored the range of studies that investigated the relationship between the FFM and self control related constructs. Their review found evidence to support the predictive validity of each of the FFM domains for self control. The weight of evidence, however, supported the ability of emotionality and conscientiousness domains in predicting self control.

Given the empirical findings demonstrating the ability of the FFM and the emotionality, agreeableness and conscientiousness domains in particular, to account for variance in the trait anger and self control constructs it would be expected that FFM is able to provide an adequate representation of the trait anger and self control constructs in the assessment of CWB and its factors, and if this were the case it would be expected that trait anger and self-control would explain minimal variance in global CWB, CWBI and CWBO in addition to that already explained by the domains of the FFM.

2.7 Conclusion

Based on the above, there are practical and statistical reasons that support identifying a parsimonious assessment of the dispositional predictors of CWB at a global construct level as well as at the level of the target of the behaviour; individuals or organisation. The establishment of an personnel selection model that predicts CWB at the domain and target level will ensure that prospective employers are cognisant of the relative predictors of each factor of CWB and can target mitigation or management strategies to these areas when and if required. The stressor-emotion model of CWB provides a clear explanation for the influence of dispositional variables and there is strong empirical evidence to support the influence of the domains of the FFM in the prediction of CWB and its factors. It would be expected that the results of previous empirical studies establishing the predictive validity of the FFM domains for CWB would be replicated in the current study. This thesis expands the research in the CWB domain by evaluating the ability of the FFM domains to account for the variance of trait anger and self control in the prediction of global CWB and its interpersonal and organisational dimensions.

CHAPTER 3

ORGANISATIONAL CITIZENSHIP BEHAVIOUR: AN EXAMINATION OF THE THEORETICAL AND EMPIRICAL LITERATURE

3.1 Introduction

This chapter will provide an overview of the theoretical and empirical considerations for the employment suitability element of OCB. It will detail the positive contribution that OCB can make to an individual's occupational performance and outline the flow-on benefits that OCB has for the work group and organisation as a whole. The chapter will consider the dimensional structure of OCB and argue that conceptualisation of OCB as a global construct with dimensions based on the target of the behaviour: individual and organisation, allows employers to gather useful and relevant information related to the dispositional predictors for OCB which allows for employment selection decisions that will optimise the benefit for the employer. Two models are considered that provide a theoretical understanding for OCB; both models identify 'pro-social' dispositional tendencies in the causality of OCB. The chapter will then analyse the empirical evidence relating to the dispositional predictors of OCB and concludes that there is the requirement to replicate and extend the empirical literature to enable the identification of a tool that provides a parsimonious assessment of the dispositional predictors of global OCB and the interpersonal and organisational dimensions.

3.2 OCB Definition and Impact

The concept of OCB has been traced back to Katz (1964), who proposed that the successful functioning of an organisation required three crucial elements: the ability to recruit and retain suitable employees; employees performing the role and duties required of their position; and employees engaging in behaviour that went beyond the specifics of their role to enhance and support the functioning of the organisation. This last element - behaviour beyond the role - provided the genesis for work in the area of OCB. In a study that investigated the nature and

antecedents of this type of employee behaviour, Smith, Organ and Near (1983) were the first to label this construct OCB. Organ (1988; 1997) is commonly credited in the I/O literature with defining and developing the concept of OCB. His original definition of OCB proposed that it was intentional and discretionary behaviour on the part of the employee that served to enhance the functioning of the organisation. This definition proposed that the employee engaged in this behaviour without receiving any extrinsic reward for it. Organ's (1988) definition has been criticised for failing to recognise the contribution that OCB can make to an individual's own overall performance (which is rewarded), and it also overlooked that, at times and in certain work situations, OCB was not in-fact discretionary but an expected part of workplace behaviour (Borman & Motowidlo, 1993; Organ, 1997). Given these concerns the broadly accepted definition of OCB in the literature refers to employee behaviours that are *not essential* to the performance of the work tasks but serve to assist with organisational functioning (Lee & Allen, 2002).

There is considerable overlap between the behavioural outcomes and organisational consequences of OCB and other constructs that are routinely investigated in the I/O literature. In particular, the constructs that have been labelled 'contextual performance' (Borman & Motowidlo, 1997), 'extra-role behaviour' and 'pro-social organisational behaviour' (Katz, 1964; LePine, Erez, & Johnson, 2002) all have the behavioural outcome that see the employee engaging in behaviours that assist their colleagues or their organisation as a whole. Researchers who have examined OCB, contextual performance, extra-role behaviour and pro-social organisational behaviour have developed a range of different theoretical models and causal mechanisms to explain employee behaviour that benefits the individual's colleagues and/or their organisation. Consideration of the breadth of theoretical and empirical literature investigating contextual performance, extra-role behaviour and pro-social organisational

behaviour, in addition to the literature on OCB, allows for increased theoretical understanding and empirical evidence of the employee behaviours that serve to enhance the functioning of the organisation. Given the parity between the behavioural outcomes of OCB and the other constructs, the theoretical positions and empirical findings of contextual performance, extra-role behaviour and pro-social organisational behaviour are directly relevant to an investigation of the dispositional predictors of OCB. In order to provide consistency in the terms used to label workplace behaviour that assists with workplace functioning, this chapter will use the OCB term to refer to the empirical findings of contextual performance, extra-role behaviour and pro-social organisational behaviour.

There is considerable research showing that OCB leads to positive work outcomes at the individual and organisational level. The research has demonstrated that at the individual level employees who engage in OCB are likely to receive positive performance appraisals and are also more likely to receive other workplace rewards like identification for promotion (MacKenzie, Podsakoff, & Fetter, 1991; Allen & Rush, 1998; Johnson, et al., 2002).

Research has demonstrated that the positive benefits of OCB for the organisation have included improved workplace effectiveness (Podsakoff, Aherne & MacKenzie, 1997; Dunlop & Lee, 2004), higher overall organisational performance (Podsakoff, MacKenzie, Paine & Bachrach, 2000; Walz & Neihoff, 2000), increased sales (Podsakoff & MacKenzie 1994) and higher evaluations of customer service (George, 1991). In summary, the evidence indicates that OCB leads to a range of positive outcomes for the employing organisation.

The empirical evidence is largely conclusive that OCB has a positive impact on an individual's performance and also benefits the organisation as a whole. In order to determine the characteristics of the individual that predict their potential to engage in OCB, the

employer is likely to be assisted by a personnel selection process that is able to assess the dispositional predictors for OCB (Borman & Motowidlo, 1997; Motowidlo, Borman, & Schmidt, 1997). An assessment of the dispositional tendencies that predict OCB is particularly important in team-based work environments where work outputs are achieved through collaboration and cooperation (LePine, Erez & Johnson, 2002). An assessment of these factors is especially important for those in a managerial or supervisory role as these roles require behaviours that serve to facilitate and encourage optimal performance from others (Gelantly & Irving, 2001). Individuals who engage in higher levels of OCB are likely to have the skills, attributes and behaviours beyond their task related roles that enhance the functioning of others, the work unit and organisation as a whole. Therefore, a pre-employment assessment that is able to identify the dispositional tendencies that predict OCB provides an employer with valuable selection information on key performance criteria for individuals, the likely contribution the individual will have to the functioning of the workplace and assist the employer to build a workforce that has positive workplace performance outcomes at the individual and organisational level.

3.3 Dimensionality of OCB

There are several different conceptualisations of the dimensionality of OCB that range from a two dimensional structure found by some pioneers in OCB research (Smith et al., 1983) to a more intricate five dimensional model (Organ, 1988). This section will detail the prominent conceptualisations of the dimensionality of OCB in the I/O literature, and argue that each of these conceptualisations could reasonably be reconceptualised as OCB directed at an individual or organisational target. This section also outlines how the conceptualisation of OCB directed at an individual or organisational target provides the potential employer with

meaningful and relevant employment screening data.

Initial work conducted to investigate the dimensional structure of OCB revealed a factor structure with two interpretable and distinct dimensions (Smith et al., 1983). These dimensions were labelled 'altruism' and 'general compliance'. The altruism dimension represented helping behaviour directed at people and included items such as 'helps others who are absent' and 'helps others with a heavy workload'. The general compliance dimension represented behaviours that assisted the system rather than individuals in particular. The general compliance factor included items such as 'does not take extra breaks' and 'does not take unnecessary time off work'. As with any factor analysis the labels assigned to these factors, altruism and general compliance, are arbitrary descriptors assigned by the researchers in order to conceptualise the content of items loading onto that factor. Given the content of these factors, it could reasonably be argued that the factors identified by Smith et al.'s (1983) could be conceptualised and labelled based on the *target* of the behaviour; the individual or the organisation.

The dimensionality of OCB was expanded and re-conceptualised by Organ (1988). He proposed that employee behaviour that benefited an individual's colleagues and/or their organisation was best conceptualised by a five dimensional model. The dimensions of Organ's conceptualisation of OCB included; altruism, conscientiousness, civic virtue, courtesy and sportsmanship. Behaviours on the altruism dimension served to help others, conscientiousness behaviours went beyond what is expected in the role while civic virtues demonstrated concern for and interest in the well-being of the organisation. Courtesy behaviours in Organ's (1988) conceptualisation were behaviours that prevented work-related conflict, and sportsmanship behaviours demonstrated acceptance and tolerance of workplace

inconvenience and disappointment.

Analysis of the behaviours that constitute the five dimensions proposed by Organ (1988) indicate that the behaviours in the altruism and courtesy dimensions are behaviours that are directed at co-workers, whilst behaviours in the conscientiousness, civic virtue, and sportsmanship dimensions are behaviours that are targeted at the organisation as a whole. It is therefore likely that the dimensions of Organ's (1988) conceptualisation can be reconceptualised based on the target of the behaviour: individual or organisation.

In the ensuing debate on the conceptualisation of the dimensionality of OCB and the related constructs, Williams and Anderson (1991) argued that the use of the labels in previous conceptualisations of OCB, which they considered to be value laden, had the potential to imply a motivation for the particular dimension of OCB that was not necessarily supported by the empirical evidence. These researchers proposed that the conceptualisation of OCB using the target of the behaviour was the most appropriate way to conceptualise workplace behaviours as there was no value laden component to this dimensional structure nor did the label imply any motivational intent on the part of the employee. These researchers confirmed a two factor solution for OCB with the target of the behaviour defining the factors (Williams & Anderson, 1991). This study also found that there was a significant correlation between the OCB dimensions; $r = .56, p < .05$. The significance of this correlation was not addressed by the authors, but the strength of the relationship between the two dimensions alludes to the possibility of an hierarchical structure to OCB with an over-arching or global OCB construct above the dimensions based on the target of the behaviour (individual: OCBI or organisation: OCBO).

As evidenced in the previous paragraphs, there have been multiple conceptualisations of the dimensional structure of the OCB construct. Coleman and Borman (2000) brought together the literature that explored the dimensional structure of OCB, and its related constructs, with the intention of establishing a model of the dimensionality of OCB that was able to capture and make sense of a range of categorisations of the construct that existed across the I/O literature. These researchers identified 27 citizenship behaviours from the literature and analysed these behaviours with the aim of determining the most appropriate factor structure. They concluded that citizenship behaviour was best conceptualised by an hierarchical model with the overall global construct at the top, three dimensions of citizenship behaviour under this and the types or categories of the relevant citizenship behaviour at the next level. Figure 3.1 provides a representation of this model. The three dimensions of citizenship behaviour that were identified in this model included; interpersonal citizenship, organisational citizenship and job/task citizenship. Again these categorisations are based on the target of the behaviour; individual, organisation and job.

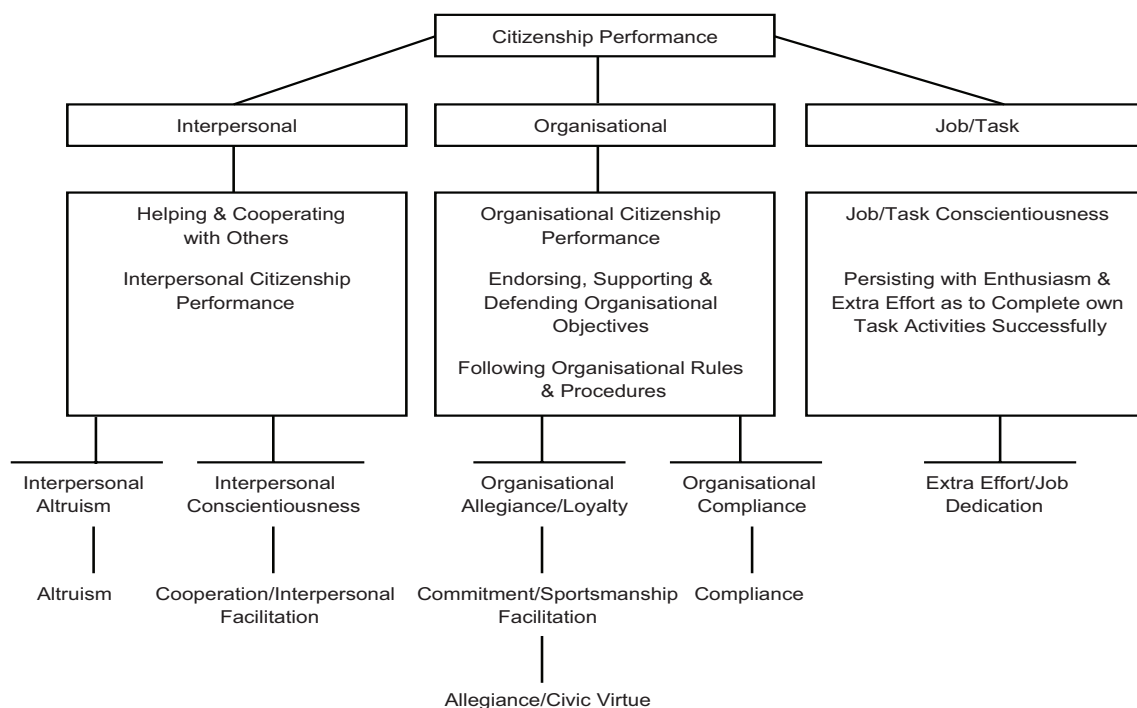


Figure 3.1: Representation of Coleman and Borman's (2000) Dimensional Structure of Organisational Citizenship Behaviour.

Coleman and Borman (2000) argued that the inclusion of the job/task dimension allowed for representation of citizenship behaviour towards an individual's tasks or job rather than just colleagues or the organisation. Podsakoff et al. (2000) noted that this form of behaviour is quite difficult to separate from in-role or task related behaviour and proposed this as the reason that many researchers exclude this dimension from their analysis of OCB.

Conceptualisation of OCB as an hierarchical model explains the significant correlation between OCBO and OCBI found by researchers such as Williams and Anderson (1991). Like CWB, conceptualisation and measurement of OCB at a global level and dimensional level, where the dimensions are based on the target of the behaviour, allows researchers and employers to conceptualise the construct at a level which is meaningful and relevant for their purpose.

The existence of and empirical support for a dimensional structure for OCB has been critiqued by the meta-analysis findings of LePine, Erez and Johnson (2002). The authors argued that the dimensional structure of OCB and the independence of these dimensions from each other had not been reasonably established in previous literature. They drew data from a range of empirical studies that had reported on the dimensional structure of OCB and concluded that the previously proposed dimensions of OCB were highly correlated with each other at both the five dimensional conceptualisation (altruism, conscientiousness, civic virtue, courtesy and sportsmanship) and the two dimensional level (OCBI and OCBO). LePine et al. (2002) concluded that their results supported the conceptualisation and assessment of OCB as a global rather than dimensional construct.

LePine et al., (2002) call into question the hierarchical model of OCB that has been proposed by authors such as Coleman and Borman (2000). The literature contains opposing views on

the validity of a dimensional structure for OCB. The aim of the current thesis is to determine the most parsimonious assessment for the dispositional predictors of the employment suitability domains of CWB and OCB; the argument can be made that the dimensional structure of the OCB concept should be assessable within this process. As noted in section 2.5.1.3, the bandwidth argument suggests that the statistical consequence of assessing the predictive validity of personality domains for a global construct, as opposed to the predictive validity of these domains for the relevant dimensional structure, is the possibility of masking or weakening of the predictive validity of certain personality domains, where these domains are more predictive of one dimension of a construct than they are of another dimension. Whilst there remains controversy around the existence of the dimensional structure of OCB, there is a body of literature that supports the dimensionality of this construct, and there exists sound empirical and statistical reasoning to continue to assess this construct as a dimensional one.

Further support for the assessment of OCB as a dimensional construct, based on the target of the behaviour, can be drawn from the practical advantage offered to employers through the assessment of OCB using a dimensional structure based on the target of the behaviour. As with CWB, when OCB is conceptualised and assessed as directed at an individual or the organisational target, it allows the employer to make a decision about the level of risk that will be tolerated for OCB, and direct intervention strategies when a higher level of risk is taken in cases of specialist employment. Identifying the risk as either against individuals or the organisation means that the employer can put in place organisational strategies targeted to manage the increased risk.

In summary, there have been a number of conceptualisations of the structure of OCB; there is

empirical support for the consideration of an hierarchical structure for OCB with global OCB as an overarching construct and dimensional elements under this that are based on the target of the OCB – individual, organisational or occupational task. There is however, evidence to suggest that it is difficult to separate OCB directed at a task from actual task based behaviour. It is likely that employers would be assisted by an employment selection process that was able to identify if the OCB risk was more likely to result in behaviour that was directed at colleagues or behaviour that was directed at the organisation. This would allow for a risk assessment of the tolerance of the OCB risk and the targeting of appropriate mitigation strategies. There is however, still a degree of controversy about the existence of the dimensional structure of OCB and it is for this reason that the determination of the most parsimonious assessment of the dispositional predictors of OCB also provides an assessment of the dimensional structure of this construct and consequently tests rather than assumes the independence of dimensions based on the target of the behaviour (OCBI or OCBO).

The following section outlines two theoretical models for OCB and details how these models are likely to assist employers identify the dispositional tendencies that can be assessed in a personnel selection process in order to predict and individual's propensity for global OCB and OCB targeted at their colleagues and the organisation.

3.4 Theoretical Models of OCB

This section will detail two prominent theoretical models for OCB; Motowidlo, Borman and Schmidt's (1997) theory of individual differences and Penner and colleagues' causal model of OCB (Penner, Fritzsche, Craiger & Freifeld's, 1995; Penner & Finkelstein, 1996; Penner, Midili & Kegelmeyer, 1997; Rioux & Penner, 2001). These models of OCB provide

employers with information on the dispositional antecedents to OCB which is likely to allow for the selection of candidates with tendencies that see them more likely to engage in OCB.

3.4.1 Theory of Individual Differences

As noted in section 3.2, the behavioural outcomes of OCB are consistent with the behavioural outcomes of the construct that has been labelled contextual performance. The background to the development of OCB and contextual performance are however, somewhat different. The construct of OCB was largely derived from research aimed at explaining an individual's helping behaviour in the workplace where as contextual performance has its genesis in explaining how an individual's overall occupational performance consists of more than that individual's ability to successfully complete work tasks. Researchers who have defined and analysed contextual performance proposed that it was an aspect of occupational performance that was separate to the individual's ability or propensity to perform their work tasks (Motowidlo & Van Scotter, 1994; Motowidlo et al., 1997). Contextual performance was conceptualised as the behaviour that supported "the broader organizational, social, and psychological environment" (Motowidlo & Van Scotter, 1994: p. 476) in which the work tasks were completed. Motowidlo et al.'s (1997) theory of individual differences was developed to explain the how personality and cognitive ability serve as antecedents to contextual and task performance. Given the overlap in the behavioural outcomes of OCB and contextual performance, the theory of individual differences is directly relevant to identifying predictors for OCB.

Motowidlo, et al.'s (1997) theory of individual differences proposes that both personality and cognitive ability impact on task and contextual performance through an individual's

‘characteristic adaptations’. These characteristic adaptations are the habits, skills and knowledge, acquired by the individual and learned over time as the individual interacts with their environment. See Figure 3.2 for representation of the theory of individual differences.

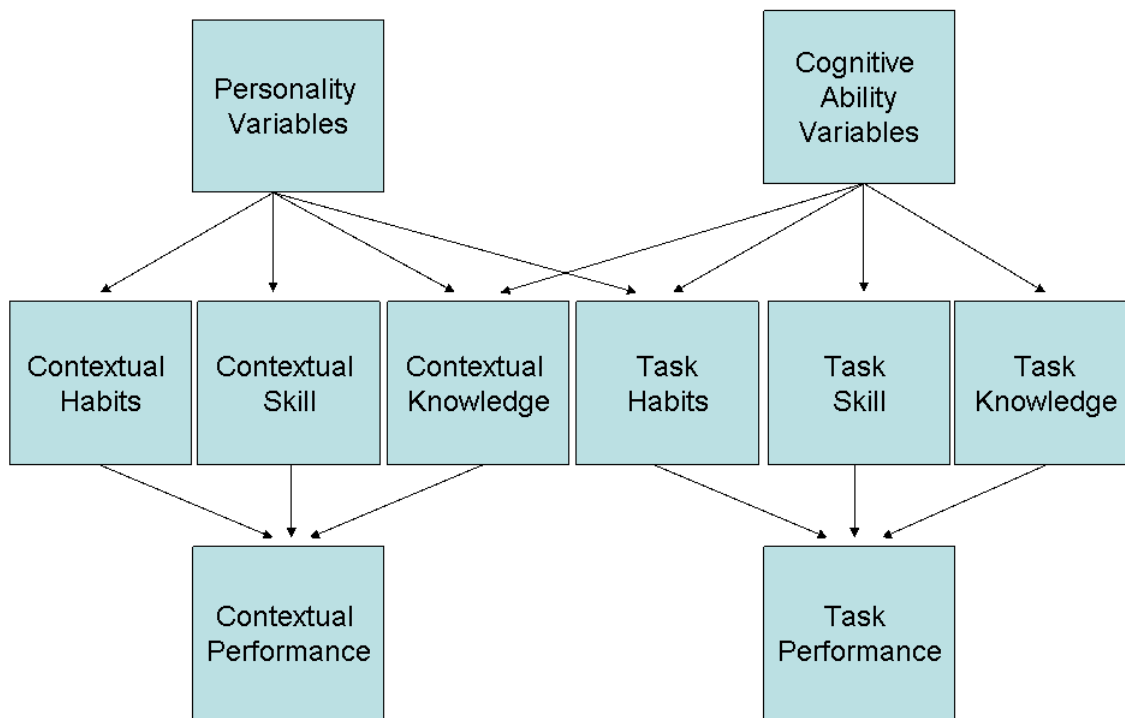


Figure 3.2. Representation of Theory of Individual Differences from Motowidlo et al. (1997 p. 79).

Motowidlo et al. (1997) defined contextual habits aspects of their model as “patterns of responses that either facilitate or interfere with effective performance in contextual work situations” (p. 82). In considering the antecedents to contextual habits, the theory proposes that these habits are somewhat influenced by the FFM domain of conscientiousness. The theory, however proposes that the FFM domains of extraversion and agreeableness are of greater influence for contextual habits and it specifically states that this is because of the interpersonal and social focus of these personality domains. Given the parity between the

behavioural outcomes of contextual performance and OCB, the assumption would be made that extraversion and agreeableness serve a similar function as precipitants for OCBs.

‘Contextual skills’, in Motowidlo et al’s (1997) theory of individual differences, were defined as an individual’s “skill in actually carrying out actions known to be effective for handling situations that call for helping and coordinating with others” (Motowidlo, et al., 1997, p. 81).

The theory proposed that the personality traits of extraversion and agreeableness were influential in the development of contextual skills. Again, given the parity between the behaviours of contextual performance and OCB the assumption would be made that extraversion and agreeableness serve the same function for the skills required for an individual to engage in OCB.

Motowidlo et al’s (1997) theory of individual differences defined ‘contextual knowledge’ as an individual’s possession of “facts, principles, and procedures for effective action in situations that call for helping and cooperating with others” (Motowidlo, 1997, p. 80). The theory proposed that individuals whose personality is “consistent” (p. 80) with aspects of contextual knowledge would further develop this contextual knowledge. Whilst not explicitly articulated in the theory, it could be proposed that the personality domains of conscientiousness, which has content related to being thorough and careful, would identify individuals who were more likely to be acquainted with the relevant facts, principles, and procedures and again, the precipitants for contextual knowledge are likely to serve as precipitants to OCB.

To summarise, Motowidlo et al’s (1997) theory of individual differences proposes that personality makes a significant contribution to contextual performance behaviours through its

influence on a person's habits, skills and knowledge. The theory proposes that pro-social aspects of personality are particularly influential in a contextual performance outcome, proposing that the FFM domains of agreeableness, extraversion and to a lesser extent conscientiousness are influential antecedents for contextual performance. The parity in the behavioural outcomes of contextual performance and OCB supports the predictive validity of contextual performance antecedents for an OCB outcome. Motowidlo et al's (1997) theory of individual differences can therefore be used to support the influence of pro-social dispositional tendencies and the FFM domains of agreeableness, extraversion as well as the conscientiousness domain in the prediction of OCB.

3.4.2 Pro-social Disposition and Functional Approach

Penner et al. (1997) proposed a causal model of OCB that categorised OCB into behaviour that was a reaction to situational demands (intermediate OCB) and behaviours that was more long term (enduring OCB). These researchers proposed that engagement in intermediate OCB, which was behaviour that was consistent with OCB, in response to a situational requirement, leads individuals to develop a sense of themselves or an 'identity' that is consistent with an OCB-like pattern of behaviour. These researchers proposed that the internalisation of this 'citizen role identity' increases the likelihood of further OCB responses; these further OCB responses were conceptualised as an enduring response pattern that is consistent with OCB behaviours. The causal nature of this model comes from its explanation of the genesis of OCB in the individual.

Penner et al's (1997) causal model of OCB proposed that a range of factors influence intermediate citizenship behaviour. These factors included organisational variables such as

organisational justice and individual variables such as job attitudes (e.g., satisfaction), the individual's mood on the job, their pro-social orientation and the individual's motives for engaging in OCB. These variables were proposed to have a strong impact on intermediate OCB within the model. The model further proposed that an individual's pro-social orientation and motives for OCB also had a direct impact on enduring OCB but this direct relationship with enduring OCB was somewhat weaker than the other relationships within this model. A diagrammatic representation of Penner et al.'s (1997) causal model for OCB is detailed in Figure 3.3.

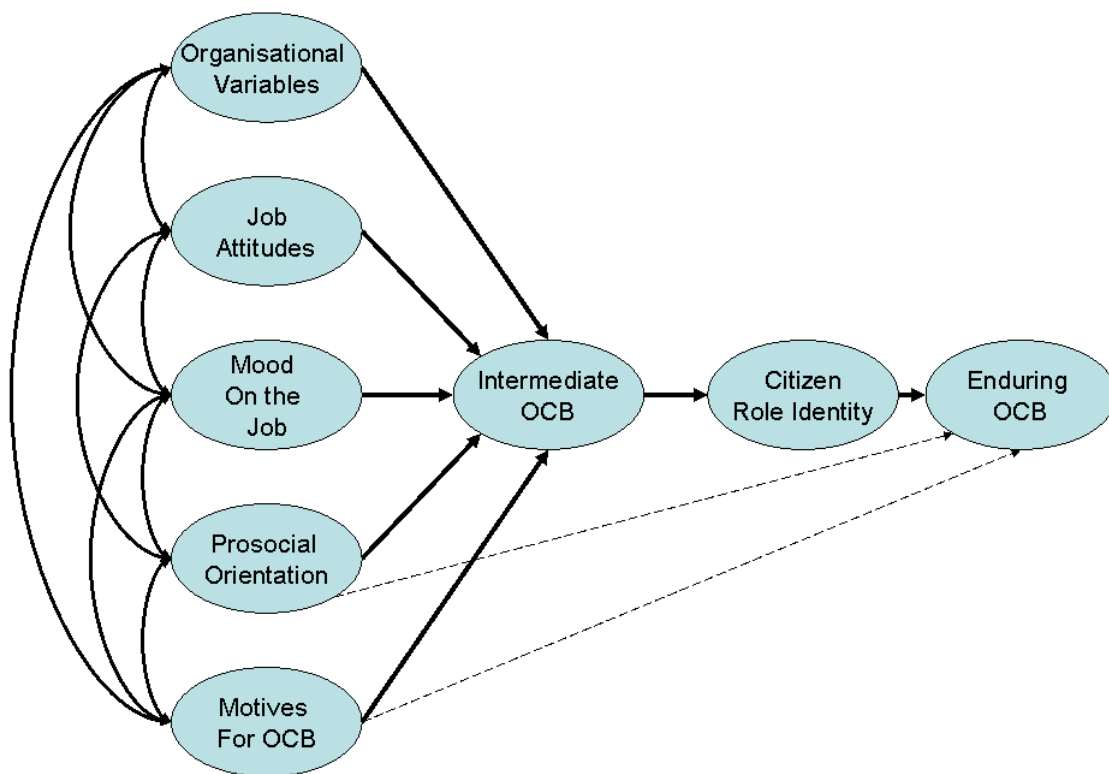


Figure 3.3. Representation of Penner et al.'s (1997, p. 127) Causal Model for OCB.

Several causal or input variables in Penner et al.'s (1997) model are more relevant to the prediction of OCB once individuals are engaged in the workplace than they are in a personnel selection context, e.g.: organisational variables, job attitudes and mood on the job. These

variables are likely to be dependent on the particular job or organisational context and are less meaningful in a personnel selection context where the aim is to predict the likelihood of engagement in OCB from a dispositional assessment. The pro-social orientation and motives variables, however, are likely to be existent for the individual prior to engagement in a particular workplace. The pro-social orientation and motives variables as antecedents to OCB will be discussed in detail in the following paragraphs to illustrate how this causal model of OCB supports the predictive validity of dispositional tendencies for an OCB outcome.

Penner et al.'s (1997) proposed that an individual's pro-social orientation influences both intermediate and to a lesser extent enduring OCB. The model defined a pro-social orientation as "an enduring predisposition to feel concern about the welfare of other people, to think about their best interests, and to engage in actions on their behalf" (Penner et al., 1997, p. 121). The concept of 'pro-social orientation' derives from Penner, Fritzsche, Craiger and Freifeld's (1995) concept of the 'pro-social personality'. Penner et al. (1995) demonstrated that willingness to assist others, feel empathy towards them and engage in actions that benefits others was an individual difference variable that was assessable and replicable and these researchers demonstrated that that pro-social behavioural tendencies were effective in predicting helping behaviour (Penner & Finkelstein, 1996). These pro-social orientation or pro-social personality tendencies are likely to have significant overlap with other measures of personality that assess an individual's 'other-orientated' tendencies. In the FFM, the domain most closely aligned with 'other orientated' tendencies is the agreeableness domain which assesses an individual's tendency to be compassionate and cooperative. It would be expected that this domain of the FFM would have predictive validity for OCB given the influence of pro-social orientation on both intermediate and enduring OCB in Penner et al.'s (1997) causal model.

The other aspect of Penner et al.'s (1997) model that is likely to support the predictive validity of dispositional tendencies in an OCB outcome is the 'motives' variable. Rioux and Penner (2001) used a 'functional approach' to clarify this aspect of Penner et al.'s (1997) causal model. The functional approach to behaviour proposes that human behaviour can be understood by considering the function served by the behaviour; how the behaviour serves the individual's goals or needs. Rioux and Penner (2001) demonstrated empirically that individuals engaged in OCB for three primary functions; pro-social values, organisational concern and impression management. Individuals who engaged in OCB because of pro-social values were motivated to be helpful, accepted by others and interact harmoniously with their colleagues. Individuals who engaged in OCB for an organisational concern motive were motivated to engage in the helping behaviour because they had pride in the organisation and those who engaged in OCB for an impression management motive did so to create a positive impression of themselves to others.

In considering the likely dispositional predictors of OCB from the motives perspectives of Penner et al.'s (1997) causal model, it is likely that an assessment of pro-social dispositional tendencies taps the pro-social values aspect of the motives component of the model. Within the FFM of personality, an assessment of pro-social tendencies would be assessed by the agreeableness domain. The organisational concern motive however, is likely to have conceptual overlap with the conscientiousness domain of the FFM. The conscientiousness domain typically provides an assessment of an individual's work ethic and their level of devotion to occupational tasks. As such, it is likely that the conscientiousness domain of the FFM would tap content related to the organisational concern motive of Penner et al.'s (1997) causal model. In considering the third motive identified by Rioux and Penner (2001), the

impression management motive, research suggests that there is significant content overlap between the FFM domains of emotionality and conscientiousness and an assessment of positive impression management (e.g., Ones & Viswesveran, 1999; Birkeland, Manson, Kisamore, Brannick & Smith, 2006). This research demonstrated that emotionality has a negative relationship with impression management whilst conscientiousness has a positive relationship. The breadth of literature supporting this relationship will be detailed in Chapter 5. The degree of shared variance between these measures indicates that the FFM domains of emotionality and conscientiousness are likely to have predictive validity in representing the impression management motives aspect of Penner et al.'s (1997) causal model of OCB.

In summary, Penner et al.'s (1997) causal model of OCB supports the predictive validity of pro-social tendencies for OCB. These pro-social tendencies are represented through both the pro-social orientation aspect and pro-social motives variable of the model. Within the FFM the agreeableness domain, with its content related compassion and cooperation, is likely to provide an assessment of an individual's pro-social tendencies. Penner et al.'s (1997) model also supports the predictive validity of the conscientiousness domain for an OCB outcome. This domain is likely to be influential when individuals engage in OCB for organisational concern and positive impression management motives. The emotionality domain of the FFM is also likely to be influential in this model through the variance this domain shares with an individual's tendency to engage in impression management.

3.4.3 Summary Theoretical Understanding of OCB

Both Motowidlo et al.'s (1997) and Penner et al.'s (1997) models for OCB support the role of dispositional tendencies as antecedents to OCB. Motowidlo et al.'s theory of individual

differences proposed that dispositional tendencies or personality lead to characteristic adaptations - habits, skills and knowledge that influence an individual's propensity for OCB. It proposed that there is a role for conscientiousness in the development of characteristic adaptations; however, the most significant personality attributes to influence helping behaviour in the workplace would be agreeableness and extraversion. Penner et al.'s (1997) model also proposes that a range of factors influence intermediate and enduring OCB and in this model personality is likely to influence OCB through the motives for their behaviour as well as the individuals' pro-social orientation tendency.

3.5 Dispositional Predictors of OCB

The causal models of OCB outlined in section 3.4 provide a theoretical understanding of the link between dispositional tendencies and OCB. The next section of this chapter outlines the empirical research that supports the predictive validity of dispositional tendencies in an OCB outcome. In particular, it argues that the empirical evidence supports the use of dispositional predictors in providing employers with valid and reliable predictors of an individual's propensity towards OCB.

3.5.1 Five Factor Model and OCB

A number of studies have explored the relationship between the FFM domains and OCB. Gelantly and Irving (2001) examined the relationship between the extraversion, agreeableness and conscientiousness domains and OCB. These researchers found that extraversion was the only domain in their study that had a significant relationship with OCB. This study had several limitations that may have contributed to the non-significant relationship between OCB

and the other personality domains. In particular, the study had a relatively small sample size and it did not investigate dispositional predictors of OCB against the interpersonal or organisational dimensions of this construct. If the dispositional predictors had a weaker relationship with one of the OCB dimensions relative to the other, the statistical effect may have decreased the overall relationship with global OCB which would therefore failed to represent the significance of this predictor for OCB targeted at individuals or the organisation as a whole.

Chapter 2 reviewed several studies that have been conducted to determine if CWB and OCB are distinct constructs or opposite poles of a continuum of harming-helping workplace behaviour (Dalal, 2005; Sackett, et al., 2006). These studies are directly relevant to the determination of the dispositional predictors of OCB as they assessed the predictive validity of domains of the FFM for CWB and OCB in order to answer their research question. Dalal's (2005) meta-analytic study investigated the antecedents to CWB and OCB. He concluded that the different predictors of the two constructs indicated they were separate constructs rather than opposite poles of a continuum and in relation to FFM predictors of OCB he found that conscientiousness was a reliable predictor of OCB. One limitation of Dalal (2005) was that it did not explore the predictive validity of the other FFM domains in the prediction for OCB. A second limitation of the study was that it did not investigate the potential differential effect for conscientiousness on the interpersonal and organisational dimensions of the OCB construct.

A second study aimed at determining if OCB and CWB were separate constructs or opposite ends of a continuum (Sackett, et al., 2006) also provided useful data on the dispositional predictors of OCB. This study addressed the first limitation noted in Dalal's (2005) study by

assessing relationships between all of the FFM domains and the OCB construct. The results indicated significant positive relationships between all of the FFM domains and OCB. The corrected correlation coefficients between the domains and OCB ranged from .21 for emotional stability to .39 for agreeableness.

Sackett et al. (2006) indicates that it is necessary to consider all of the FFM domains in a study to determine the most parsimonious assessment of the dispositional predictors of OCB. This research does not, however, inform employers of the potential for varying strength in the relationships between domains of the FFM and the interpersonal and organisational dimensions of OCB. O'Brien and Allen (2008) went part way to address this gap when they explored the differential relationship between conscientiousness and the OCBI and OCBO dimensions. The results of their study demonstrated a strong positive relationship between conscientiousness and the two OCB dimensions with the relationship being somewhat stronger for OCBO than it was for OCBI. The limitation of this study was that it did not explore the predictive validity of the other FFM domains for OCBI or OCBO.

In summary, there is a weight of evidence in the literature supporting the predictive validity for conscientiousness and OCB and there is empirical evidence to support the predictive validity of all domains of the FFM in the prediction of OCB. Little research, however, has been devoted to determining the predictive validity of each of the FFM domains for the interpersonal and organisational factors of OCB. A personnel selection model aimed at determining the best dispositional predictors of OCB and its interpersonal and organisational dimensions requires analysis of the predictive ability of each of the FFM domains on OCB and its factors.

The current study is designed to address this identified gap. It is expected that the study will replicate the results of the empirical research reviewed in this chapter, in particular, there will be a significant relationship between each of the domains of the FFM and global OCB. The current study aims to extend the empirical literature on OCB by analysing the relationships between each of the FFM domains and the dimensions of OCB (interpersonal and organisational). It would be expected that the interpersonal and pro-social content of interpersonal dimension of OCB would have stronger relationships with the domains of the FFM that were more heavily laden with interpersonal content. The FFM domains of emotionality, extraversion and agreeableness all have content related to pro-social tendencies and hence these domains are likely to have stronger relationships with the interpersonal rather than organisational dimension of OCB. It would also be expected that the organisational dimension of OCB, which has a greater focus on promoting and supporting the organisation as a whole rather than colleagues in particular, would have a stronger relationship with the FFM domain of conscientiousness as the content on this domain is largely related to the individuals' motivation to perform well.

3.6 Conclusion

In summary, an assessment of an individual's propensity to engage in behaviours that assist with organisational functioning is likely to enable an employer to build a workforce which produce positive work outcomes at the individual and organisational level. These individuals are likely to have the skills to work effectively in teams and manage teams well to produce optimal outcomes. The theoretical models of OCB propose that an individual's dispositional tendencies, or personality, can serve as an effective predictor of his or her tendency to engage in pro-social behaviours in the workplace and empirical research supports the predictive

validity of each of the FFM domains for an OCB outcome. The present study aims to extend this research base and demonstrate that the FFM domains with content related to positive interpersonal interactions are likely to have stronger relationships with OCB directed at colleagues and the FFM domain related to work outcomes, conscientiousness, is likely to have a stronger relationship with OCB aimed at assisting the organisation. To date, there is no published literature that has assessed the HEXACO. Chapter four argues for the likely theoretical advantage of the HEXACO over the FFM in the assessment of propensity for OCB.

CHAPTER 4

THE SIX FACTOR MODEL OF PERSONALITY: EMERGENCE, THEORETICAL FRAMEWORK AND POTENTIAL AS AN EMPLOYMENT SCREENING TOOL

4.1 Introduction

The personality and I/O literature has seen the recent emergence of a taxonomy of personality that proposes that, statistically and theoretically, personality is best categorised by six rather than five dimensions. This chapter will summarise the literature on the emergence of the six factor model of personality, it will detail the theoretical framework of this model and outline why, from its theoretical perspective, the six factor model is likely to provide a more robust predictor of both CWB and OCB than that provided by the FFM. To make this argument this chapter will detail the empirical evidence that supports the claim. It will conclude with an outline of the research required to establish the six factor model as a more parsimonious tool than the FFM in the assessment of the dispositional predictors for CWB and OCB and their interpersonal and organisational dimensions.

4.2 The Emergence of the Six Factor Model of Personality: HEXACO

The six factor model of personality, like the FFM model, was derived from the lexical analysis of personality adjectives. The difference between the development of the six factor model and the FFM is that the six factor model was derived from lexical analysis across a range of languages. This may have created a broader lexical origin for the HEXACO than was the case with the development of the FFM. Ashton, Lee, Perugini, Szarota, De Vries, Di Blas, Boies and Raad (2004a) brought together the results of eight studies that had conducted a lexical analysis across seven different languages; Dutch, French, German, Hungarian, Italian, Korean, and Polish. Their collation of these data revealed a consistent six factor model as the solution that best categorised the personality lexicon across these languages. The six factor model of personality has been labelled 'HEXACO'. This label was drawn

from the Greek prefix for six, ‘hex’, and is also an acronym to represent each of the domains the model: Honesty-humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, Openness (Lee & Ashton, 2004).

Ashton, Lee and Goldberg (2004b) proposed that the previous failures to replicate a six factor model of personality in the English language was likely to be due to the reduction of lexicon adjectives or clustering of individual lexical adjectives for the purpose of factor analysis where, historically, statistical packages were less able to deal with very large variable sets. They proposed that the sixth factor, honesty-humility, was the factor with the smallest amount of variance to emerge across language and hence it would be the factor most likely to fail to be represented in statistical analysis that did not include the spectrum of adjectives representing the personality lexicon of language. To explore the applicability of the six factor model of personality in the English language, and to correct the historical practice of lexical reduction and clustering, Ashton et al. (2004b) reviewed Goldberg’s (1982) archival data set of personality adjectives and proposed that the size of this data set was sufficient to account for the lexical description of personality across the English language. The results of this study indicated that the factor structure was consistent with a six factor model of personality and was consistent with the structure found in Ashton et al.’s (2004a) lexical analysis of personality in other languages. The factors of the six factor model are detailed in Table 4.1. Table 4.1 also provides adjective descriptors for high and low scorers on each of the dimensions.

Table 4.1

Six Factor Model of Personality Adjective Descriptors for High and Low Scores⁴

Factor	Adjective descriptors of high scorers	Adjectives descriptive of low scorers
Honesty-Humility	Sincere, honest, faithful/loyal, modesty/unassuming	Sly, deceitful, greedy, pretentious, hypocritical, boastful, pompous
Emotionality	Emotional, over-sensitive, fearful, anxious, vulnerable	Brave, tough, independent, self-assured, stable
Extraversion	Outgoing, lively, extraverted, sociable, talkative, cheerful, active	Shy, passive, withdrawn, introverted, quiet, reserved
Agreeableness	Patient, tolerant, peaceful, mild, agreeable, lenient	Ill-tempered, quarrelsome, stubborn, choleric
Conscientiousness	Organised, disciplined, diligent, careful, thorough,	Sloppy, negligent, reckless, lazy irresponsible, a Absent-minded
Intellect/imagination /unconventionality	Intellectual, creative, unconventional, innovative, ironic	Shallow, unimaginative, conventional

Lee and Ashton (2006) developed a self-report personality inventory, the HEXACO-PI, to assess and represent personality based on the six factor model. The HEXACO-PI provided an assessment of four facets within each of the six factors. The HEXACO-PI included two additional scales to measure attributes that Lee and Ashton (2006) assessed as important but which they found did not statistically delineate clearly to a single factor. These additional scales were called interstitial facets or scales and included ‘negative self-evaluation’ and ‘altruism’. The researchers later developed a revised version of this measure, the HEXACO-PI-R (Ashton, 2011). The HEXACO-PI-R saw the removal of the ‘expressiveness’ facet from the eXtraversion factor and its replacement with ‘social self-esteem’. The removal of this scale was due to difficulties with certain items on this scale in translation to languages other than English. The social self-esteem scale was added to the measure and this was assessed to have significant overlap with negative self-evaluation scale which resulted in the

⁴ Ashton and Lee (2007, p.154)

removal of the latter scale. The resulting factors and scales of the HEXACO-PI-R are detailed in Table 4.2.

Table 4.2

The HEXACO-PI-R Domains and Scales

HEXACO-PI-R Domains	HEXACO-PI-R Facets	
Honesty-Humility	Sincerity Fairness	Greed Avoidance Modesty
Emotionality	Fearfulness Anxiety	Dependence Sentimentality
Extraversion	Social Self-esteem Social Boldness	Sociability Liveliness
Agreeableness	Forgiveness Gentleness	Flexibility Patience
Conscientiousness	Organization Diligence	Perfectionism Prudence
Openness	Aesth Apprec'n Inquisitiveness	Creativity Unconventionality
Interstitial Scale	Altruism	

As noted in previous paragraphs, the HEXACO, like the FFM, was derived from factor analysis of the personality lexicon. The HEXACO was developed from analysis across a number of languages and whilst there is a large degree of content overlap with the FFM, there are significant differences between the two personality models. In considering the differences between the HEXACO and the FFM the most significant development with the HEXACO is the addition of the honesty-humility factor which is defined by the traits of honesty, fairness, sincerity and greed avoidance. Another deviation from the FFM is the content of the emotionality and agreeableness domains, the HEXACO places content related to anger on the agreeableness domain whereas the FFM typically places this content on the emotionality

domain. The extraversion, conscientiousness and openness domains of the HEXACO are similar to those of the FFM.

Several studies have found that the HEXACO, and the honesty-humility factor in particular, has greater predictive validity than the FFM across a number of variables. The HEXACO has been found to be more effective than the FFM in predicting psychopathy, Machiavellianism and narcissism (Lee & Ashton, 2004). The predictive validity of the HEXACO due to its inclusion of the honesty-humility domain has seen the HEXACO outperform the domains of the FFM in the prediction of egoism, immorality and pretentiousness (de Vries, de Vries, de Hough, & Feij, 2009). Marcus, Lee, and Ashton (2007) have also established the HEXACO as a better predictor of overt integrity measures, and Weller and Tikir (2010) found that honesty-humility was associated with propensity for health/safety and ethical risk taking. These results demonstrate that the HEXACO is emerging as an increasingly popular tool amongst applied psychologists and there is increasing evidence of its incremental validity over the FFM in domains relevant to personnel selection processes. The next section of this chapter will outline the theoretical model conceptualising the HEXACO. It will also detail how, from this theoretical perspective, the HEXACO would be expected to have incremental validity over the FFM in the prediction of individuals engaging in harming and helping behaviours.

4.3 Theoretical Framework of HEXACO

The HEXACO is a statistically derived model of personality. As noted in section 4.2, it was developed from the factor analysis of the personality lexicon across a number of different languages. Ashton and Lee (2007) have, however, contextualised the model within a

theoretical framework. Theoretically, the HEXACO divides the six scales along two broad concepts: it clusters the honesty-humility, agreeableness and emotionality domains as representations of different aspects of altruistic versus antagonistic type behaviours and it clusters the extraversion, conscientiousness and openness domains as representations of engagements in different endeavours. Extraversion is related to engagement in social endeavours, conscientiousness is related to engagement in task related endeavours, and openness is related to engagement in endeavours related to ideas.

The theoretical framework of the HEXACO proposes that the model is able to represent an overall construct of altruism versus antagonism through a combination of the honesty-humility, agreeableness, and emotionality factors. Honesty-humility and agreeableness are considered to be representations of reciprocal altruism and emotionality is considered to be a representation of kin altruism. Reciprocal altruism has been proposed as the basis for long-term cooperation (Ashton, Paunonen, Helmes & Jackson, 1998). It is an evolutionary biology concept that explains why an individual will act in ways to support others which may lead to his or her temporary disadvantage; an individual will act in an altruistic manner with the expectation that there will be reciprocation or advantage received for their actions. Ashton et al. (1998) proposed that reciprocal altruism was consistent with the idea of forgiveness and non-retaliation. Ashton and Lee (2007) propose that within the HEXACO theoretical framework, honesty-humility provides a representation of an individual's response to the opportunity to exploit others: representing how willing or entitled an individual feels to exploit others and it includes facets that assess the likelihood that an individual will exploit others through subtle and overt means. When an individual is high on honesty-humility they are assessed as fair and willing to cooperate and at the low end they are assessed as willing to exploit others (Ashton & Lee, 2007).

Lee and Ashton's (2007) theoretical conceptualisation of the HEXACO model proposes that the agreeableness domain contributes to the reciprocal altruism function and provides a representation of an individual's reaction to being exploited. Individuals with higher agreeableness are assessed as willing to engage in pro-social actions and cooperate with others even when there is the chance that they will be exploited (Ashton & Lee, 2007).

Within the theoretical framework of the HEXACO the emotionality factor is assessed to represent kin altruism and is consistent with the ideas of empathy and attachment (Ashton et al., 1998). Kin altruism is engagement in altruistic behaviours that benefit those to which an individual is close to. This concept proposes that individuals will engage in behaviours that support and help others when they are connected to, and concerned for, those individuals (Ashton et al., 1998). Individuals high in emotionality feel a strong connection to others while individuals low in emotionality are assessed as emotionally distant from others.

The theoretical explanation of the HEXACO, and in particular the honesty-humility, emotionality and agreeableness domains as different representations of the altruism versus antagonism tendencies has the potential to provide incremental validity over the FFM in the assessment of human behaviour directed at harming and helping. The FFM of personality does not provide the same depth of assessment of altruistic or pro-social behaviour, nor does it capture the honesty-humility content related to willingness to exploit others (Ashton & Lee, 2007). The FFM is, therefore, less likely to be able to explain and capture the variance in behaviours that are directed at helping or harming. The remaining sections within this chapter will review the theoretical models for CWB and OCB and outline how the HEXACO, with its ability to assess each of the FFM domains as well as assess pro-social and

exploitative tendencies is likely to provide a more comprehensive assessment of these employment suitability constructs than can be provided by the FFM.

4.4 The HEXACO and the Stressor-Emotion Model of CWB

This section will provide a brief review of the stressor-emotion model of CWB as outlined in Chapter two (Spector & Fox, 2005 – see Figure 2.2) and demonstrate how, in this CWB model, the domains of the HEXACO are expected to provide a superior assessment of the prediction of CWB to the FFM. The stressor-emotion model of CWB considers a range of contextual and individual factors as causal factors for CWB. The model proposes that negative emotions, personality and perceived control can directly lead to CWB. It proposes that individuals' personality can impact on CWB indirectly through their evaluation of environmental stressors as well as through their likelihood to experience a negative emotional reaction.

The advantage of the HEXACO over the FFM in the stressor-emotion model of CWB comes from the combined ability of the HEXACO to represent each of the FFM domains and its ability to provide a comprehensive assessment of an individual's altruistic, antagonistic and exploitative tendencies. An individual's altruistic/antagonistic tendencies are likely to influence the experience of environmental stressors, his or her experience of negative emotion and CWB directly. Individuals who hold more antagonistic views will be more likely to experience environmental stressors as antagonistic, they are likely to experience more negative emotion (anger/frustration) as a result of environmental stressors and through their propensity for exploitation of others they are also more likely to engage in CWB. The empirical evidence supporting the predictive validity of the HEXACO in the CWB domain

will be detailed below. The specific hypotheses related to the HEXACO and CWB which will be assessed by this thesis will then be outlined.

As the HEXACO domains are able to represent each of the FFM domains, it would be expected that the corresponding HEXACO domains would have the same relationship with the CWB outcomes as those hypothesised for the FFM. As such, it would be expected that there would be a significant relationship between the HEXACO domains of emotionality, conscientiousness, agreeableness, openness and extraversion and CWB at the global construct level. It would also be expected that there would be a stronger relationship between the HEXACO domain of agreeableness with CWBI than CWBO. Further, it would be expected that there would be a stronger relationship between the HEXACO domain of conscientiousness with CWBO domain than with the CWBI domain.

4.5 Evaluation of the evidence of the HEXACO's Emergence as a Predictor of CWB

Lee, Ashton and Shin (2005) assessed the incremental validity of the honesty-humility domain over the FFM in predicting CWB in a Korean sample. This study used a list of trait adjectives as markers for each of the FFM domains and honesty-humility domain. The results indicated that honesty-humility was more influential for CWBO than CWBI, and emotionality was effective in predicting both CWBI and CWBO with a greater impact on CWBI than CWBO. Agreeableness was effective in predicting CWBI and conscientiousness in predicting CWBO. The limitation with this study was the use that it used adjective markers rather than standardised assessment tools. Given there now exist robust and valid assessments of the FFM and the honesty-humility domain, it could be argued that adjective markers may have provided a less robust assessment of the FFM and honesty-humility than

standard tools may have. It would therefore be important to replicate the incremental validity of honesty-humility over the FFM using a standard FFM assessment (e.g. NEO-PI-3) which would typically be employed in personnel selection. It would also be important to replicate these findings on a sample of Western job seekers.

The personality assessment and sample issues identified in Lee et al.'s (2005b) study were addressed by Lee, Ashton, and de Vries (2005a). These researchers used student samples in three countries to assess the incremental validity of the honesty-humility domain over a number of standard assessments of the FFM in predicting workplace delinquency and self-reported integrity. The results demonstrate that honesty-humility was better able to predict self-reported workplace delinquent behaviours than any of the domains of the different assessments of the FFM. The workplace delinquency measure used in this study was however, largely equivalent to the CWBO construct (see Oh, Lee, Ashton, & de Vries, 2011) and the applicability of the findings to global CWB or CWBI therefore remains uncertain. A further limitation of this study was the use of a student sample, and the generalisability of the findings to a job-seeking population is therefore uncertain.

Oh, et al., (2011) went part-way to addressing the issues identified in Lee et al.'s (2005a). These researchers used a student sample, that had employment experience, to assess the interaction effects of extraversion with honesty-humility on workplace deviance. Their results showed that honesty-humility predicted workplace deviance, and in two of the three samples extraversion amplified the effect of low honesty-humility on workplace deviance. Again, the limitation of this study is that the workplace deviance measure used is equivalent to the CWBO factor and the generalizability of the results to global CWB or the CWBI dimension is uncertain. The results did however, provide evidence of the predictive validity

of the honesty-humility domain in predicting one dimension of CWB with a participant sample with employment experience.

To summarise, a number of studies have demonstrated the emerging potential of the domains of HEXACO as effective predictors of CWB. There is, however, no study that assesses the incremental validity of the domains of HEXACO over the domains of the FFM in predicting CWB and its interpersonal and organisational dimensions using standard employment assessment instruments. To this end, a personnel selection process aimed at identifying the best predictors of global CWB and its interpersonal and organisational dimensions requires the evaluation of the domains of the HEXACO against a FFM instrument that is commonly employed in selection processes. Given the ability of the HEXACO to represent each of the domains of the FFM and its additional advantage in providing an assessment of the pro-social tendencies and an individual's willingness to exploit others, it is likely that the domains of the HEXACO would explain more variance in the global CWB, CWBI and CWBO self-report measures than would be explained by a standard assessment of the FFM.

4.6 The HEXACO and Other Relevant Dispositional Predictors of CWB

As noted in Chapter two, the theoretical models and empirical research on CWB indicates the importance of considering trait anger and self-control as dispositional predictors for CWB.

As noted in Chapter one, there is the requirement for the personnel selection process to use tools that provide a parsimonious assessment of the relevant dispositional tendencies.

Section 2.6 noted that the emotionality, agreeableness and conscientiousness domains of the FFM are likely to be able to account for significant variance in the trait anger and self-control constructs and given the domain overlap between the HEXACO and the FFM it is likely that

the corresponding domains of the HEXACO share the same relationship with trait anger and self-control. There is, however, the requirement to determine if the HEXACO accounts for sufficient variance in the trait anger and self-control constructs and if these constructs have incremental validity over the domains of the HEXACO in the prediction of CWB. To date the empirical literature is lacking such an assessment. The current thesis will extend the literature in this area by exploration of this issue.

4.7 The HEXACO as a Predictor of OCB

The relevant theoretical models for OCB were detailed in Chapter three. A brief review will be provided in this section to allow for the development of the argument that given the theoretical antecedents, the HEXACO is likely to provide a superior assessment of OCB than would be provided by the FFM.

Motowidlo et al.'s (1997) model of individual differences proposes that when an individual's habits, skills and knowledge are pro-social in nature then an OCB outcome is more likely. The model specifically proposes the importance of the FFM dimensions of agreeableness and extraversion and to a lesser extent conscientiousness. By extension, given the content overlap with the HEXACO domains, it would be expected that the corresponding domains of the HEXACO would have similar relationships to that of the domains of the FFM. The advantage of the HEXACO over the FFM is likely to come from the model's ability to represent an individual's altruistic/antagonistic tendencies. Given Motowidlo et al.'s (1997) model proposes that it is the pro-social aspect of personality that contributes to an OCB outcome it would be expected that the HEXACO would have an advantage over the FFM in the prediction of OCB. It would therefore be expected that the HEXACO model of

personality would provide a model that is able to capture variance in the OCB construct to a greater extent than the FFM.

The second theoretical model for OCB, outlined in Chapter two, was Penner et al's (1997) functional approach. This theory identified the impact of personality on OCB at two points; an individual's motivations for OCB and the individual's pro-social orientation. It proposed three separate motivations for OCB, one of which is engagement in action that is consistent with pro-social values. The pro-social orientation aspect of this theory represents a dispositional tendency to care about the welfare of others and engage in actions that reflect this caring. Penner et al (1997) argued that "personality traits that are more specifically associated with pro-social actions may better predict OCB" (Penner et al., 1997, p. 124). Again, it is likely that the HEXACO has the advantage over the FFM because of the ability of the six factor model to capture and represent personality content related to pro-social tendencies through the altruism/antagonism dimension. It is likely that the depth of assessment of this dimension through the agreeableness, emotionality and honesty-humility domains is better able to account for this pro-social tendency in Penner et al's OCB model than is provided by the agreeableness measure of the FFM.

4.7.2 Empirical Considerations for the HEXACO and OCB

To date there is minimal published peer reviewed research assessing the HEXACO's ability to predict OCB and its interpersonal or organisational dimensions. Given the domain overlap between the FFM and the HEXACO it would be expected that the corresponding HEXACO domains would have the same relationships with OCB as those that have been empirically established for the FFM domains (Dalal, 2005; Sackett, et al., 2006; O'Brien & Allen,

2008)). As such it is expected that the emotionality, agreeableness, openness, extraversion and conscientiousness domains of the HEXACO domains will have a significant relationship with OCB. There will be a strong relationship between the HEXACO domains of emotionality, agreeableness and extraversion and OCBI than OCBO and it would be expected that conscientiousness will have stronger relationships with OCBO than OCBI.

Empirical support for the HEXACO, and honesty-humility in particular, in predicting pro-social behaviours was established by Lee and Ashton (2005). These researchers established that the honesty-humility domain of the HEXACO is better able to account for variance in measures of the ‘dark triad’ variables of psychopathy, Machiavellianism and narcissism than an operationalisation of FFM. There is conceptual overlap between the dark triad variables and OCB. The dark triad variables typically involve the exploitation, dominance and disregard of others. Given the ability of honesty-humility to predict the dark triad it is a logical conclusion that honesty-humility would provide an effective assessment of OCB; those high in honesty-humility are likely to engage in OCB, particularly when the target is a person and a positive relationship would therefore be expected between honesty-humility and global OCB. The relationship will be stronger between honesty-humility and OCBI than between honesty-humility and OCBO.

4.8 Conclusion

In summary, there is strong theoretical support for the superiority of the HEXACO in the prediction of the important organisational domains of CWB and OCB. There are however, noteworthy gaps in the empirical literature that will be addressed by the current research. The current research will determine if the domains of the HEXACO provide a more predictive assessment of global CWB, OCB and the interpersonal and organisational dimensions of

these constructs using standard operationlisations of these personality constructs with Western job seekers.

CHAPTER 5

IMPRESSION MANAGEMENT CONSIDERATIONS IN THE PERSONNEL SELECTION CONTEXT

5.1 Introduction

The purpose of this chapter is to consider the potential impact of positive impression management in a personnel selection context. This chapter defines impression management and details how practitioners in the applied setting have traditionally treated it as a form of response bias. The chapter outlines the evidence that suggests that individuals engage in positive impression management, particularly in personnel selection scenarios and details how this finding has led to the legitimate concern that an individual's self-report on non-cognitive (personality) measures may be discrepant with his or her actual attributes. This has led some authors to propose that impression management has the potential to introduce construct and criterion related validity concerns to the personnel selection context (Ellington, Sackett & Hough, 1999; McFarland & Ryan, 2000). The chapter outlines evidence indicating that whilst impression management is likely to influence personality measures, the degree of variance that impression management shares with other personality domains means that it is not purely a function of response bias. The chapter concludes by detailing a process testing the proposition that the relevant personality domains provide a valid and reliable indicator of CWB and OCB that is not significantly distorted by impression management.

5.2 Socially Desirable Responding, Positive Impression Management and Self-Deceptive Enhancement

A response bias is the tendency on the part of an individual to respond to non-cognitive psychological instruments and items in a manner that is not solely based on the content of the psychological instrument or item (Paulhus, 2001). For example, an individual may engage in a response bias that sees him or her fail to endorse extremes on test item scales and hence the

response bias of a truncated range of item endorsement is introduced into the test outcome. A socially desirable response bias is when an individual responds to non-cognitive psychological instruments in a manner that sees him or her portray an overly favourable image of themselves (Paulhus, 1991).

Socially desirable responding consists of two separate components; self-deceptive enhancement and positive impression management (Paulhus, 1984, 1986, 1991). Self-deceptive enhancement is an unconscious process on the part of individuals in which they view and present themselves in an overly favourable light. Self-deceptive enhancement has been characterised as a dispositional tendency and has been found to be a relatively constant response tendency for individuals across situations and contexts (Paulhus, 1991).

Impression management, on the other hand, is the conscious or intentional distortion on the part of individuals to present themselves in a manner that creates a favourable impression (Paulhus, 1984, 1986, 1991; Barrick & Mount, 1996). Impression management has been viewed as a response bias that is highly influenced by the demand characteristics of the situation (Paulhus, 1984; Paulhus & Reid, 1991). An employment selection process, which is a context or situation where an individual is likely to be motivated to portray him or herself in a positive light, is therefore susceptible to the influence of response distortion through impression management. In these situations, there is an incentive for applicants to provide inaccurate endorsement of items for the purpose of presenting themselves in a positive light; applicants are motivated to gain the position, so they endorse an item or endorse a range of responses that portrays them in a manner they believe would present them as favourable for the position rather than endorsing items that portray an accurate self-representation

(McFarland & Ryan, 2000; Dilchert, Ones, Viswesvaran & Deller 2006; Hogan, Barrett & Hogan, 2007).

The response bias nature of self-deceptive enhancement and impression management indicates that both have the ability to introduce bias on measures of personality; the individual's self-report may be influenced by his or her unconscious and conscious conveyance of a positive impression. Research in the personnel selection domain has been predominantly interested in determining how conscious or deliberate distortion of responses influences, and potentially undermines, the test validity and reliability in employment selection scenarios. As such, the research has focussed largely on positive impression management or the conscious/effortful distortion on the part of the test taker.

The psychological literature on impression management has referred to the construct of impression management with labels such as *faking*, *effortful distortion*, *motivated distortion*, etc. (Ellington, Sackett & Hough, 1999; McFarland & Ryan, 2000; Peterson, Griffith, Isaacson, O'Connell & Mangos, 2011). Studies using these labels are discussed in the current chapter and for the purpose of consistency will be referred to by the label of 'impression management'.

5.3 Measurement of Impression Management

There are a number of ways that have been derived to measure impression management. Measures of impression management have been 'built into' psychological instruments like the 'Positive Impression Management' scale of the Personality Assessment Inventory (Morey, 1991) and the 'L' and 'K' scales of the Minnesota Multiphasic Personality Inventory-2

(Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer 1989). Researchers have also constructed ad-hoc measures from existing items in psychological instruments such as the Positive Presentation Management (PPM) scale for the NEO-PI-R (Schinka, Kinder, & Kremer, 1997). Further, there are a number of independent instruments that have been developed specifically to assess socially desirable responding and these include the Paulhus Deception Scale (Paulhus, 1999) and the Marlowe-Crowne Social Desirability Scale (Crowne & Marlow, 1960).

Research in the impression management domain has used these instruments in conjunction with other personality measures to demonstrate the effect of socially desirable responding on personality scales in personnel selection. The following section outlines research highlighting the impact of impression management in personnel selection.

5.4 What is the Impact of Impression Management in Personnel Selection?

Komar, Brown, Komar, and Robie, (2008) provided a description for the potential difficulties posed by impression management by outlining its impact through the lens of classical test theory. Classical test theory proposes that an individual's obtained score on a psychological instrument is comprised of the true score and a degree of error (Novick, 1966). The validity of a psychological instrument depends on the degree to which the obtained score represents the true score of the trait that is purportedly being measured. The true score is the score that would be obtained by an individual if there were no error in measurement. The error component of a score can be comprised of random error and systematic error. When conceptualised as error, impression management is viewed as a form of systematic error. Impression management as systematic error has the potential to impact on the criterion–

related validity of the psychological instrument by confounding an individual's obtained score to the degree that it fails to provide a representation of the true score. If the magnitude of the error is large enough it has the potential to impact on the construct and consequently criterion related validity of the instrument.

The psychological literature contains competing views, each substantiated by equally compelling evidence, on the effect or lack of effect of impression management on psychological tests and their construct and criterion validity. This research will be outlined in order to develop a model of 'best practice' for impression management in personnel selection processes aimed at assessing CWB and OCB potential.

A number of laboratory studies have reliably indicated that individuals can distort their responses on non-cognitive psychological instruments when instructed to complete them with the intention of conveying a positive impression; increasing positive attributes and/or decreasing attributes that would be considered as negative (Hough et. al, 1990; Barrack & Mount, 1996; Ellingston, et al., 1999; Rothstein & Goffin, 2006). Results of such studies have been used to illustrate that personality measures are vulnerable to response distortion; individuals can change their personality profiles to provide an overly positive impression rather than a representation of their true dispositional tendencies.

The ability to alter responses in order to present a positive impression has been further supported through the meta-analytical results of Ones and Viswesvaran (1999). Ones and Viswesvaran (1999) conducted a meta-analysis of 51 studies in which participants were instructed to respond to non-cognitive psychological tests in a way that conveyed a positive impression. Their results indicated mean level changes in *all* of the FFM domains when

participants are instructed to provide a positive impression. The magnitude of the changes in the FFM domains was comparable across each of the domains, and they concluded that instructions to provide a positive impression inflated scores on each of the FFM domains in the magnitude of half a standard deviation. Their results also demonstrated larger mean level change on scales that were specifically designed to measure socially desirable responding. The magnitude of the mean level change on these scales was approximately one standard deviation higher when participants were instructed to present a positive impression. The results of this meta-analysis indicated that an individual's presentation on a personality test can be altered under instructions to provide a positive impression. It also indicates that socially desirable scales are more susceptible to instructions to produce a positive impression than the FFM domains are. Whilst the results of this study indicate that individuals *can* alter their responses to provide a positive impression in laboratory settings when instructed to do so, it does not indicate that they *do* engage in this response bias when placed in positions of completing personality instruments for employment selection.

Birkeland, Manson, Kisamore, Brannick and Smith (2006) addressed the applicability of Ones and Viswesveran's (1999) results in the applied setting. They analysed 33 studies that had compared applicant to non-applicant responses on personality inventories to determine the extent to which individuals present a positive impression on FFM inventories in employment selection settings. The results of this study demonstrated that individuals applying for positions scored significantly higher on scales of the FFM domains of extraversion, emotional stability, conscientiousness and openness. The largest degree of inflation of scores for job applicants was found on scales measuring emotional stability and conscientiousness. Their results also found that the degree of inflation was less than that found in studies where individuals were instructed to provide a positive impression. This

study demonstrated the particular susceptibility of emotional stability and conscientiousness in employment selection settings; it also demonstrated that whilst there may be an inflation of scores it was not likely to be at the level reported in Ones and Viswesvaran's (1999) meta-analysis study.

In summary, there is evidence that individuals can and do show positive impression changes on personality instruments in employment settings. The effect of this change on the personality instrument and its criterion validity therefore requires consideration. A number of studies have investigated how positive impression management influences the personality instruments and their criterion related validity of the instrument. In particular, these studies have investigated the impact of impression management by analysing the maintenance of the factor structure of the personality instrument under conditions of impression management and also by considering the impact of criterion related validity when controlling for the influence of impression management. Research exploring each of these issues and its applicability to the study of personnel selection will be discussed.

5.5 Maintenance of the Dimensionality of Personality Instruments in a Personnel Selection Context

Instruments designed to measure the FFM have typically been developed with voluntary populations where there has been little or no incentive to be perceived one way or another. Schmidt and Ryan (1993) noted that "similar factor structures should not be assumed across testing situations that have different purposes or consequences" (p.966). They explored the maintenance of the factor structure of the FFM with an employment seeking population, and assessed the FFM using the shorter version of the NEO, the NEO-FFI. Their sample included

a student population and an employment seeking population. Using confirmatory factor analysis they demonstrated that a five-factor model provided an adequate solution for the instrument's factor structure with the student sample but did not provide adequate fit for the employment seeking sample. They then conducted an exploratory factor analysis and found that a six factor structure provided a better fit for the employment seeking population. They proposed that the sixth factor represented an ideal employee factor and consisted of items from the emotionality, extraversion, agreeableness and conscientiousness domains. Schmidt and Ryan (1993) concluded that the applicability of a particular factor structure should be assessed prior to use in decision making in the employment context. Whilst this study provides useful insights into the requirement to assess the factor structure with an employment seeking population, it is possible that the NEO-FFI did not provide the breadth of assessment of personality across the five domains as would be provided by a tool like the NEO-PI-3. The NEO-PI-3, with the increased facet and item level assessment, may have a larger scope to provide an assessment of the FFM in the personnel selection domain.

The concerns identified with the scope of the personality measure in Schmidt and Ryan's (1993) study were addressed in a study by Cellar, Miller, Doverspike and Klawnsky (1996). These researchers conducted a study that assessed the NEO-PI (Costa & McCrae, 1985) factor structure in the evaluation of trainee flight attendants. They too found that the six-factor solution was also a better fit to their data, although, the sixth factor was not consistent with the *ideal employee* factor found by Schmidt and Ryan (1993)⁵.

There are several issues with the applicability of Cellar et al's. (1996) study in the employment selection context. Firstly, the participants were not taking the test for

⁵ Cellar, et. al., (1993) note that whilst their additional factor was not consistent with Schmidt and Ryan's (1993) ideal employee factor, they were unable to contextualize the likely content of the factor.

employment selection, rather they were engaged in a trainee program, and the demand characteristics of the situation may not, therefore, have been the same as those applying for position. Further, the NEO-PI instrument only provides the six facet assessment for the FFM domains of emotional stability, extraversion and openness and whilst this may have been the most current NEO instrument at the time of Cellar et al's (1996) research it does not provide facet assessment of the agreeableness or conscientiousness domains. Given the 'ideal employee' factor in Schmidt and Ryan's (1993) study included items from the conscientiousness domain and previous results of meta-analysis indicates that conscientiousness is largely impacted by impression management (Ones & Viswesvaran, 1999), it is necessary to assess the factor structure of the current NEO-PI-3 which includes six facet measures for each of the domains with an employment seeking population. The NEO-PI-3 provides the breadth of assessment of the FFM that would allow for determination of the applicability of this instrument for an employment seeking population.

The maintenance of the FFM with an employment seeking population using a comprehensive measure of personality was demonstrated by Montag and Levin (1994). They measured the degree to which the FFM was able to accommodate psychopathological aspects of personality, and the results of this study are directly applicable to the understanding of the maintenance of the FFM in an employment seeking population as two of the samples used in the study were female job applicants. Montag and Levin (1994) used the NEO-PI-R (Costa & McCrae, 1992) which provides a comprehensive assessment of the FFM with a six facet assessment for each of the five domains. Analysing the factor structure reproduced the five factors for the employment seeking populations with very similar loadings to those published by Costa and McCrae (1992). The generalisability of these results to a broad employment seeking population is, however, questionable as the sample comprised female job applicants

aged 18-19 years. These results require replication with an employment seeking population that is composed of men and women and has an age distribution that is more representative of the general population.

Marshall, De Fruyt, Rolland and Bagby (2005) explored the maintenance of the FFM with an employment seeking population. These researchers divided job seekers into groups on the basis of their responses on the Positive Presentation Management (PPM) scale (Schinka et al., 1997). As noted in section 4.3, this scale was developed from existing NEO-PI-R items and provides an assessment of socially desirable responding. It reflects over-reporting of positive attributes and under-reporting of negative attributes. Marshall et al.'s (2005) results indicated that the factor structure of the NEO-PI-R was maintained across their samples and amongst individuals engaging in differing levels of positive impression management. This study supports the proposition that the factor structure of the FFM is maintained in a sample of job seekers when the measure used is a broad and detailed assessment and the sample is representative of the population.

Taken as a collective, the use of the NEO tools operationalised to measure the FFM fails to provide strong consensus regarding its dimensionality in personnel selection settings.

Analysis of the NEO instruments indicates that this may be associated with the breadth of FFM measurement, with studies that fail to see a replicable and consistent factor structure being those that used personality measures that did not provide the full assessment of the FFM and its relevant facets. This research as a collective indicates that the replicability of the factor structure of instruments on a population with different characteristics to that on which the test was developed should be assessed and not assumed.

5.6 Should we correct for Impression Management: Is it Style or Substance?

As discussed in section 4.3, classical test theory proposes that obtained scores are composed of a true score and a degree of error. The construct validity of a measure is a function of the degree to which the obtained score represents the true score. Using this logic, impression management has been treated as error (e.g. Morey, 1991) and practitioners have attempted to reduce this error through statistical measures that correct or control for the impression management in an effort to ensure that obtained scores provide the closest approximation of an individual's true score. Ellingson, Sackett and Hough (1999) noted that "it is commonly assumed that if applied correctly, under the required assumptions, a correction will successfully partial out the effects of intentional distortion" (p. 163). Rothstein and Goffin (2006) found that 69% of personality test users favoured the use of 'corrections' to deal with the effect of impression management. On the surface it appears reasonable and statistically valid to use corrections to partial out the influence of impression management on the relationship between personality variables and the criterion of interest. However, there is a significant body of evidence to suggest that the relationship between personality variables, particularly the FFM domains of emotional stability, agreeableness and conscientiousness, constitutes substantive shared variance with impression management rather than being a source of error (McCrae & Costa, 1983; Nicholson & Hogan 1990; Ones et al, 1996). The research supporting this relationship is analysed in the following sections and the significant content overlap between impression management, emotional stability, agreeableness and conscientiousness will be discussed. It will conclude that controlling for impression management has the potential to erode criterion validation of relevant personality measures.

The counter-argument to positive impression management as a form of response bias was presented by Ones, Viswesvaran and Reiss (1996) in a meta-analysis that analysed the research which explored the relationships between social desirability and the FFM domains and studies that had investigated the relationships between self-report and other-reports on the FFM measures. Ones et al. (1996) found that scores on social desirable response scales were correlated with the emotional stability, conscientiousness and agreeableness domains of the FFM (r 's = .37, .20 and .14 respectively). These researchers also found that others' ratings of individuals on emotional stability and conscientiousness scales were also correlated with the social desirability measure. Ones et al. (1996) reasoned that if ratings of an individual on other-report measures paralleled those obtained by the individual's self-report then it is likely that the self-report scores were a function of substance variance rather than error; hence the relationship between self-report and impression management represents shared variance in the measures rather than an independent response bias.

Ones et al. (1996) concluded that the relationship between self-report emotional stability and conscientiousness with social desirability was not, therefore, a response bias but was a substantive element of personality – there is joint overlap between measures of social desirability and measures of emotional stability and conscientiousness. These researchers concluded that

social desirability is consistently related to real individual differences in emotional stability and conscientiousness... Furthermore, the meta-analytically derived relationships between social desirability scales and non-self-ratings of emotional stability and conscientiousness can be taken as proof that social desirability scales measure some substance as opposed to all style (p. 667).

Ones et al. (1996) also found that partialling out social desirability from the FFM dimensions did not diminish the criterion-related validity of these measures in predicting job performance. When social desirability was entered into a regression equation after the other FFM domains it added minimal variance to the regression equation ($R^2=.003$). Ones et al. (1996) noted that these

results further strengthen our conclusion that attempts to control for social desirability are unwarranted. In summary, our results ... indicate that although social desirability measures some true variance in personality, it does not contribute to the prediction of job performance (p.669).

Barrick and Mount (1996) extended Ones et al.'s. (1996) findings by separating socially desirable responding into impression management and self-deceptive enhancement, with the aim of determining the different effects of each of these impression management constructs. The criterion variables in this study were supervisor ratings of performance and voluntary turn-over. The results indicated that socially desirable responding influenced personality measures but the correlation between personality measures and the criterion variables were not attenuated by impression management or self-deceptive enhancement. They concluded "even though response distortion does occur in applied settings, it does not reduce the predictive validity of relevant personality constructs" (Barrick & Mount, 1996, p.270).

In summary, the research at the meta-analytical level indicates that correction of positive impression management does not attenuate criterion validity and the use of statistical processes to 'correct' for impression management has the potential to remove substantive variance from personality measures. Consequently, personality measures contain substantive variance that is shared with measures of impression management. The process of 'partialling

out' or 'controlling' for the influence of impression management is therefore likely to remove meaningful variance that is shared between personality and criterion variables in the personnel selection context. The specific influence of impression management in the assessment of the criterion variables CWB and OCB is outlined below.

5.7 Specific Considerations for CWB and OCB with Impression Management

Ones et al. (1999) noted that there is evidence to suggest that the criterion related validity of conscientiousness for job performance is not attenuated by impression management. There is, however, minimal evidence on the impact of impression management when the criterion is CWB and OCB. A recent study has, however, explored the direct impact of impression management on CWB (Peterson, et al, 2011). Peterson, et al. (2011) used applicants for manufacturing positions. These applicants were also asked for their consent to be contacted at a later date for participation in research. Those who agreed were contacted 6 weeks after the initial battery of applicant testing. 'Faking', as it was called in this study, was assessed through changes in individuals' scores on personality measures from administration at the application stage to administration at the research stage. This study assumed that testing completed for the research administration (six weeks post job application testing) provided a more honest representation of individual's scores on the personality instruments. Peterson, et al. (2011) also administered the Marlowe-Crowne Social Desirability Scale (Crowne & Marlow, 1960). The results of this study demonstrated that the mean level conscientiousness score was higher for the applicant administration than the research administration and this difference was assessed as statistically significant but not large (effect size: $d = .18$). These results also indicated that change in scores in self-reported conscientiousness from applicant administration to research administration were not related to scores on the social desirability

measure. This research concluded that measures of social desirability do not provide a good assessment of 'faking'. There are however, some concerns with this study; it found a non-significant relationship between applicant conscientiousness and self-reported CWB, and this relationship remained non-significant after controlling for social desirability. Patterson et al (2001) hypothesised that if controlling for impression management was effective there would have been an increase in the relationship between conscientiousness and CWB. However, the fact that this relationship was not established in the first place, which is counter to the generally accepted relationship between CWB and conscientiousness, is likely to demonstrate that there were issues other than impression management impacting on the CWB-conscientiousness relationship. Further, there was a very low response rate with this study, and it is possible that the sample size ($n=196$) did not adequately capture the relationship between conscientiousness and CWB. In addition, this study did not measure emotional stability or agreeableness, which have both shown shared variability with social desirability measures.

In summary, Peterson et al. (2011) provided support for personnel selection practice that does not control or partial out the impact of impression management on CWB. This study provided promising progress in the consideration of impression management in personnel selection. However, the results need to be replicated in a study that establishes a relationship between all relevant predictors of the FFM and CWB.

To summarise, there is limited research that has investigated the relationship between positive impression management and OCB. The nature of this relationship requires clarification to be confident that impression management does not affect the criterion related validity of relevant personality variables in the prediction of this relationship.

5.8 Conclusion: What Might be Done About Impression Management in a Personnel Selection Process of Employment Suitability?

A recent summary of the literature on impression management in personnel selection noted that it was “a body of literature without a conclusive answer to questions regarding the prevalence and personnel selection-related impact of faking behaviour” (Peterson et al., 2011, p. 271). It is routine industry practice to be interested in and conduct measures of impression management in employment selection processes (Rothstein & Goffin, 2006). Research has demonstrated that the use of personality measures in employment selection has the potential to alter the factor structure of the instrument. If employment selection processes alter the factor structure of personality measures, the validity of these instruments in the personnel selection context cannot be guaranteed. Research exploring this issue with a FFM instrument that is routinely used in personnel selection; the NEO-PI-R demonstrated that a FFM instrument that provides a detailed assessment of the FFM dimensions is able to maintain the factor structure in the employment selection context. It would be expected that the current study would replicate these results. It is also expected that a detailed measure of the six factor model of personality; the HEXACO-PI-R would also maintain the proposed factor structure in a personnel selection context.

Research has also demonstrated that impression management, or the demand characteristics of the personnel selection process, creates mean level changes to domain scores on personality measures (Ones & Viswesvaran, 1999; Birkeland, 2006; Peterson et al, 2011).

As a starting point, it is therefore necessary to ensure that norms, generated on a population of individuals undertaking the test for similar purposes, are developed and used as a point of

reference in personnel selection decisions. Consistent with the findings of Ones and Viswesvaran (1999) and Birkeland et al (2006) it would be expected that FFM changes would be observed on all dimensions with the largest change being for emotional stability and conscientiousness. The impact of impression management is largely unexplored for the six factor model but it would be expected that there would be a replicable results for the corresponding dimensions of the HEXACO.

Whilst the research has established that there is minimal impact of impression management when the criterion is job performance there is little research that has explored the impact of impression management when the criterion is CWB and OCB and there is no evidence, to the author's knowledge, that has explored the impact of impression management on the six factor model's predictive validity for CWB or OCB. There is strong evidence that impression management is a substantive variable that is intrinsically linked to the FFM domains, particularly the domains of emotionality and conscientiousness. Partialling out or controlling for impression management therefore has the potential to disadvantage applicants who have elevations on these relevant FFM dimensions. Research is needed however, to ensure that impression management functions as a substantive variable when the criterion variables are CWB and OCB.

CHAPTER 6

CONSIDERATION OF THE PERSONALITY BANDWIDTH DEBATE IN THE CONTEXT OF THE EMPLOYMENT SUITABILITY DOMAINS OF CWB AND OCB

6.1 Introduction

The preceding chapters have detailed the weight of evidence that supports the predictive validity of personality measures for work-related outcomes. There is, however, a continuing and growing debate in the personnel selection literature on whether practitioners should use personality measures at the broad attribute level or measures at the narrow trait level when assessing the predictive validity of personality for work-related outcomes (Sitster, van der Linden & Born, 2013). Most research on the use of broad versus narrow personality traits, often termed the *bandwidth-fidelity dilemma/ discussion/ debate* in the literature, focuses on the use of personality measures for the prediction of the broad criterion of ‘job performance’ (e.g., Ones & Viswesvaran, 1996). Some recent studies have focused on the prediction of CWB but there is a dearth of research on the benefits of broad or narrow personality assessment in the OCB domain. There is also limited research on bandwidth considerations for the HEXACO and few studies have assessed the bandwidth considerations with an employment *seeking* population. This chapter will outline the arguments for both sides of the bandwidth –fidelity debate and detail an approach that extends the published literature in this domain to address the identified gaps.

6.2 What are Broad and Narrow Personality Traits?

Broad measures of personality provide an assessment at a level that is wide and comprehensive. Broad measures of personality typically provide an assessment that is more factorially heterogeneous, or “more inclusive, general and abstract” (Ones & Viswesaran, 1996; p.612). The literature in this field typically treats domain level assessment of the FFM (e.g.: emotionality, extraversion, openness, agreeableness and conscientiousness) as a broad level assessment of personality features (Sitser et al., 2013). Narrow personality

measures typically provide an assessment that is smaller in content spectrum, more factorially homogeneous with more concrete behavioural anchors than an assessment at the broad trait level (Ones & Viswesvaran, 1996; Barrick & Mount, 2003; Jenkins & Griffith, 2004). The literature typically treats the facets level assessments in personality measures as an assessment of narrow traits.

6.3 Summary and Critique of Literature Supporting Assessment with Broad Measures of Personality.

Ones and Viswesvaran (1996) published an influential position paper that proposed that broader measures of personality, assessed through the FFM domains, will lead to higher predictive validities for job performance. The paper summarised the position of researchers who advocated for assessment using broad personality measures and it also stimulated discourse in the I/O literature on the bandwidth fidelity debate which has led a number of researchers to advocate the opposing position. The following sections will detail each of the considerations in Ones and Viswesvaran's (1996) position paper and outline the alternate view.

6.3.1 Broad Measures of Personality for Simplicity and Generalisability

Ones and Viswesvaran (1996) proposed that the broad measures of personality, through FFM domains level assessment, allowed for theoretical parsimony and generalisability of results for job performance. Ones and Viswesvaran (1996) proposed that assessment at the narrow trait level would "hinder the general theoretical understanding of work behaviours" (p.621).

They argued that theoretical models of job performance and job related behaviours that were based on narrow trait like variables would become complex and less generalisable.

The argument that broad measures provide the opportunity to tap simplicity and generalisability can be criticised for prioritising these features over optimal criterion validity. It would be difficult to defend to a potential employer or unsuccessful applicant the appropriateness of the continued use of higher more general measures simply because they allow for a theoretical parsimony. In practice, theoretical models may be developed on the basis of global or broad personality features, but empirical evidence can then be used to determine the best tools (broad or narrow measures) that provide an assessment of the theoretical construct with the greatest criterion related validity.

6.3.2. Broad Measures Provide Required Complexity

Ones and Viswesvaran's (1996) theoretical paper supporting the use of broad measures of personality proposed that when a criterion is highly complex, as they noted that job performance is, then an equally complex measure must be used to capture the variance in the criterion. They considered job performance to be a multi-faceted concept and they proposed that personality measures that were able to capture the degree of variance in the job performance criterion would need to be equally as broad and multi-faceted. They argued that assessment at the domain level of the FFM is able to provide the broad measure that is necessary. Rather than providing a firm position for the superiority of broad measures in the assessment of job related criteria, this element of Ones and Viswesvaran's (1996) argument appears to be more synonymous with matching the spectrum of independent and dependent variables, and it may be that a multi-faceted combination of facet level measures is able to

provide the diversity needed. This combination of narrow measures may in fact provide increased criterion validity over measures of the broad FFM domains. Whilst the argument that broad measures are able to capture more variance in diverse concepts than narrow ones has sound statistical merit, if empirical results derived from a diverse and representative population indicated that narrow measures, singularly or as a composite, provide higher criterion validity then again, it would be difficult to ignore empirical findings for the purpose of supporting a theoretical position.

6.3.3 Broad Measures are More Reliable

Ones and Viswesvaran (1996) also advocated for the use of broad over narrow personality measures as they proposed that broader measures typically have higher reliabilities than those of narrow facets. They noted that the FFM, as assessed through the NEO-PI-R (Costa & McCrae, 1992), and the 16PF (Conn & Reike, 1994), have higher coefficient alpha reliabilities at the broader level than at the narrow facet level. They note Nunnally's (1978) benchmark which proposed that practitioners should ensure reliabilities at the .90 level as a minimum when using psychological tests but .95 as the desired standard in applied settings for decision making purposes. Domain reliabilities for the NEO-PI-3 are .89 for extraversion and openness, .90 for agreeableness, .92 for conscientiousness and .93 for neuroticism (Costa & McCrae, 2010). Using Nunnally's (1978) standard this routinely administered tool, at the broad personality level, does not meet the standard that Ones and Viswesvaran (1996) advocate. Furthermore, in employment recruitment settings, industry rules of thumb are somewhat different to Nunnally's (1978) standards, as practitioners routinely work with lower levels of reliability. The approach typically adopted by personnel selection professionals sees coefficient alpha scores above .90 as a measure with 'excellent' internal

consistency. Alphas between .70 and .90 are typically assessed to provide ‘good’ internal consistency, scores between .60 to .70 are considered ‘acceptable’ and coefficient alphas between .50 to .60 are considered to have ‘poor’ internal consistency (George & Mallery, 2003). Applied psychologists use a general rule of thumb, having a preference for tools with alpha coefficients greater than .70. Using this rule of thumb, some of the reliabilities of the NEO-PI-3 facets fall below this benchmark. Specifically, the extraversion facets of *activity* and *excitement seeking* both have alpha coefficients of .69, and the openness facet of *actions* has an alpha of .54 which would be considered as problematic. McCrae and Costa (2010) address the concern raised by the low *actions* alpha coefficient by noting that the low reliability is likely to be a function of the lack of redundancy in questions tapping this trait. They conclude that the *actions* facet includes varied content which is likely to diminish its alpha coefficient and they propose that it still serves as valid measure despite its low reliability or internal consistency.

As identified above, global measures like the domains of the FFM model on the NEO-PI-3 typically have higher reliabilities than the facets that make up the domains. As noted by Ashton (1998) this is a statistical function of the measures used to assess reliability or internal consistency. The higher domain reliabilities “...follow directly from psychometric theory. Any group of positively inter-correlated subscales will produce a composite scale whose reliability exceeds that of the average of those subscales” (Ashton, 1998, p. 289). It would therefore be expected that a broad measure that is multi-faceted but inter-correlated and has more items than a unidimensional measure, is statistically bound to have higher reliability coefficients.

There are two arguments to consider when evaluating Ones and Viswesvaran's (1996) proposition that the increased reliability of broad measures sees those measures have the advantage over narrow measures. Firstly, there is no reason that broad measures need to be domain level assessments using the FFM. Equally strong reliability coefficients may be achieved through the creation of composites of empirically and theoretically relevant facets. Secondly, as noted by Ashton (1998) reliability of a measure is important but not to a degree where validity is compromised as a result. There is the requirement of balance between the two; if there is adequate reliability but improved validity then a potential employer is likely to be more willing to choose the instrument that provides increased validity in the assessment of the criterion of interest.

6.3.4. Broad Measures Provide a Logical Conceptualisation for Suitability Rankings

Ones and Viswesvaran (1996) propose that the domain level assessment is the preferable way in which to conceptualise individuals' ranking of suitability for the position. They argue that

regardless of the number of narrower personality dimensions which are measured by the personality inventory used, the decision maker has to conceptualise each individual's standing on broader personality dimensions. Unless s/he collapses the various personality sub dimensions into a global personality factor, s/he has no basis for preferring one individual over another (p. 620).

It is possible that facets within a domain may have weaker or inverse relationships with other facets on the same domain when assessed against certain criterion variables. It is in this scenario that there is the risk that the combination of facets into a global factor or domain will decrease the predictive validity of the personality predictor. If there is sound theoretical reasoning and empirical evidence to support the predictive validity of a number of narrow

criteria then increased validity might be obtained through forming a composite measure of the facets rather than relying on the broad FFM domains. This composite may not be at the domain level but it could still be conceptualised as broad as it provides a multi-dimensional assessment through its combination of narrow facets. Ones and Viswesvaran's (1996) conclusion that global domain measures of personality is the preferred way for potential employers to conceptualise preference for one candidate over another provides a somewhat blinkered outlook in consideration of the relevant predictors for a criterion.

Ones and Viswesvaran's (1996) conclusion on the bandwidth fidelity debate in the personnel selection context advocates for the use of broad measures over narrow measures in personnel selection. The following section will detail the empirical findings on this debate in the personnel selection context.

6.4 Empirical Research on Bandwidth-Fidelity Measures

Salgado, Moscoso and Berges (2013) provided insights into the bandwidth fidelity debate in the applied context. These researchers found that conscientiousness demonstrated significant correlations with each of the performance criteria; job performance, tasks performance and orderliness. Results also indicated that the conscientiousness facet level measures of *self-control* and *order* also demonstrated significant correlations with some of the performance measures but when the researchers residualised the facet measure scores to exclude common conscientiousness variance, the results indicated that the only significant relationships that remained were with the broad assessment of conscientiousness and the DV: the relationships at the facet level were not significant once the factor level variance of conscientiousness was removed. Salgado et al (2013) concluded that studies that had proposed the benefit of narrow

traits were in fact an “artefact result produced by methodological limitations of their statistical analyses” (p.81).

In summary, Ones and Viswesvaran (1996), supported by the empirical results of Salgado et al. (2013) argue for the assessment of antecedents of job performance at the broad factor level rather than the narrow facet level. Ones and Viswesvaran (1996) propose that assessment using the domains of the FFM allows for parsimony, theoretical development and greater reliability in predictive measures. Nonetheless, there is a body of evidence that supports the use of narrow or facet level personality assessment in the applied psychology domain. The arguments and empirical literature supporting assessment using narrow facets will be outlined below.

6.5 Summary and Critique of Literature Supporting Assessment with Narrow Measures of Personality

The support for narrow trait level assessment of personality predictors in personnel selection can be devolved to two main propositions: First, narrow traits or a composite of relevant narrow traits have increased predictive validity over domain measures of the FFM; and second, there is often conceptual simplicity in an explanation of links between unidimensional constructs and the criterion of interest. These propositions will be discussed in the next section and a ‘best-practice’ model for personality bandwidth measurement in the assessment of CWB and OCB will be outlined.

Several researchers have proposed that the advantage of narrow measures of personality comes from their higher predictive validity with a criterion of interest. These researchers

suggest that specific trait or facet predictive variance may be diluted by the non-predictive variance of other specific facets when facets are combined in a global domain measure (Ashton, 1998; Paunonen, et al., 1999; Hastings & O'Neill, 2009). As noted by Jenkins and Griffith (2004);

...broad personality characteristics encompass a subset of similar, yet distinct facets. While these facets combine to form the global construct, they can also operate independently. In other words, although the facets are highly correlated, rating high on one does not guarantee rating high on another (p.255).

Global domains within personality models like the FFM or the HEXACO may include facets that are minimally predictive, or potentially even inversely predictive of the other facets on that domain, for certain criterion variables. These weak or inverse relationships operate statistically to dilute the predictive variance at the factor level so that the stronger relationships between certain facets and a criterion are lost when these facets are subsumed under the global factor.

Ones and Viswesvaran (1996) proposed that complex criteria require complex assessment measures and they postulated that these complex assessments are best provided through domain level assessment of the FFM. Paunonen et al. (1999) agree with Ones and Viswesvaran (1996) that complex criteria are likely to require complex variables to assess them. They do not agree, however, that a measure at the domain level of the FFM is the best way to meet the demand of complexity. Paunonen et al. (1999) propose that the complexity can best be captured through an assessment that uses multiple homogenous personality measures that are directly relevant to the criterion and combining these through the use of a multiple regression equation. This approach avoids the potential for diluted variance at the

domain level through the combination of facets with weaker or inverse relationships with a criterion. Paunonen et al. (1999) propose that assessment of combined predictive facets using regression weights, rather than the domain approach advocated by Ones and Viswesvaran (1996), is likely to provide researchers and practitioners with improved criterion validity.

There is another strong rationale to support the superiority of narrow trait assessment over broad domain assessment. Narrow or facet level predictors are essentially unidimensional constructs. Assessment at this level allows for ease of interpretability for the trait-criterion relationship, and thereby allowing for development or expansion of theoretical models aimed at increasing an understanding of the influence of the personality traits on work-related criterion variables (Paunonen et al, 1999). The use of facet level unidimensional predictors with regression weights allows for each predictor to be understood in terms of its impact on the criterion. Some researchers have argued that the wide range of broader traits can make it difficult to understand the conceptual relationship between predictors and criterion (e.g.: Schneider, Hough, & Dunnette, 1996). This argument is contrary to the reasoning proposed by Ones and Viswesvaran (1996) who argued that the global domain level predictors are likely to be more useful for theoretical development due to the theoretical parsimony and generalisability that could be obtained through their use.

It is likely that the level of specificity of the theoretical model is the issue that is of relevance in this debate. General or global theories of work related performance are likely to be best served by the use of personality or dispositional tendencies at a higher order, whereas models developed to explain a less diffuse or more specific criterion may be better served through the use of more specific or narrow facets or a combination of these facets. In the personnel selection domain, where the interest of the potential employer is to determine if an employee

is likely to engage in behaviours that have the potential to harm or help the organisation, they will be best served by identification of theoretically relevant predictors that are able to account for the most variance in these constructs.

6.5.1 Empirical Support for Facet Level Assessment

There are several empirical studies that provide evidence to support the use of facet level prediction over broad domain level prediction. Roberts, Chernyshenko, Stark and Goldberg (2005) conducted a study to investigate the composition of the conscientiousness domain. They drew facet level measures of conscientiousness from seven common personality measures. Their results demonstrated that the facets within the conscientiousness domain have differential validity with the prediction of work and health criteria and some of these had incremental validity over the broader criteria. This study provides empirical evidence that assessment at the facet level has the potential for increased criterion validity.

Another study supportive the predictive validity of facet level assessment used a meta-analysis to explore the degree to which the narrow traits of conscientiousness; *achievement*, *dependability*, *order* and *cautiousness*, predict a range of occupational performance outcomes beyond that predicted by the global measure of conscientiousness (Dudley, Orvis, Lebiecki & Cortina, 2006). Results found that the narrow facet level predictors accounted for a small portion of variance beyond the global measure of conscientiousness in the criterion of overall job performance, task performance and interpersonal facilitation. The results indicated that when the criterion was job dedication the facet level assessments accounted for a substantial percentage of the variance, and when the criterion was CWB the facet level assessment accounted for a moderate percentage of the variance. The authors concluded that the benefit

of narrow facet assessment was dependent on the criterion of interest. This research demonstrates that the results from studies that have investigated the bandwidth fidelity debate may not necessarily be generalisable to other criteria of interest. It is therefore necessary to assess the propositions of this debate with the criteria of interest in the current thesis: CWB and OCB.

6.6 The Bandwidth Fidelity Debate in Consideration of Counterproductive Work Behaviour

Within the personnel selection literature the majority of the research on the bandwidth-fidelity debate has been conducted using the criterion of job performance. There is a smaller research base that has investigated the bandwidth fidelity debate with the criterion of CWB. One study that has used a CWB-type criterion investigated ‘workplace delinquency’ (Ashton, 1998). As detailed in chapter two, this criterion is largely consistent with the ‘organisational’ component of CWB: CWBO. This study assessed broad measures of personality using Goldberg’s (1992) adjective markers for the domains of the FFM and an abbreviated version of the Jackson Personality Inventory (JPI; Jackson, 1994) to provide facet level assessment. Two of the facets on the JPI, *responsibility* and *risk taking*, were hypothesised to be particularly relevant due to their conceptual links with the CWB construct. The results of this study indicated that the strongest correlations with the CWB measure were with the individual facet level measures. This study provides support for the predictive validity of narrow or facet level measures for CWB, however, as the CWB measure used in this study was largely equivalent to CWBO, the generalisability of the results to CWBI or the global CWB construct remains unassessed. Further, this study used a student population who had

previous work experience, and as such, the degree of generalisability of the results to an employment seeking population is also uncertain.

Another recent study to investigate the bandwidth fidelity dilemma had expert judges rate the relevance of facet level predictors for CWB (Hastings & O'Neill, 2009). The results indicated that the five facets, as endorsed by the expert judges what were they, were able to predict 91% of the variance that was explained by all of the domains of the FFM. The researchers concluded that “facet-level measurement and interpretation in personnel selection contexts may be more a) efficient and b) defensible” (Hastings & O'Neill, 2009, p.289). The efficiency of the facet level assessment is gained by the use of fewer items for narrow measures or composite measures than would be required to assess the breadth of the FFM domains. Hasting and O'Neil (2009) noted that the full FFM assessment was six times longer than an assessment using the best five facets. Employers might find efficiencies in the use of fewer, narrow, measures. There is likely to be the additional benefit, via the quality of data as respondents are not likely to be affected by fatigue. The conclusion that the use of narrow measures is more defensible derives from the assumption that narrow measures allow for clearer insights regarding the conceptual linkages between the facet and the criterion. This is counter to the theoretical argument provided by Ones and Viswesvaran (1998) and is likely to speak to the conceptual level of models that is relevant in applied settings. Models that provide empirical evidence and clear conceptual links between predictors and outcomes are often more palatable and defensible to customers of psychological services – they have higher face validity. As noted by Hastings and O'Neill (2009), the narrow facets have clear and concise definitions and the content of the measure is finite; hence, the relationship with other variables is easier to predict and understand.

Hasting and O'Neill (2009) also noted that some of the FFM facets within the same factor were negatively correlated with each other and these facet level relationships with the criterion "essentially cancel one another out when aggregated to the factor level" (p.291). The use of the broad or factor level relationship with a criterion when there is inverse or weaker relationships between facets within this factor, also fails to represent or masks the strong relationships that exist with the facets level measures and the criterion of interest. Hastings and O'Neill (2009) concluded that CWB had correlations with both facet and factor level assessment of personality. Their results demonstrated that some domains of the FFM were strong predictors but there were domains where the facets explained more variance in the CWB criterion. These results highlight the requirement to look empirically at the facet level loadings to ensure optimum criterion validity. There is the requirement to evaluate the predictive validity of all facets of a domain to ensure that weak or inverse facet level prediction does not weaken the domain level predictability. The result also illustrates that when there is inverse or weaker relationship among the facets and the criterion of interest, a composite of facet level measures may provide improved criterion validity over the domain level assessment.

The requirement to consider narrow or facets level predictors for CWB was further supported in a recent study that used the HEXACO in the assessment of bandwidth-fidelity considerations (Ashton et al., 2014). This study proposed that the *fairness* facet of the honesty-humility domain had the strongest conceptual links with CWB given the focus of this scale on an individual's willingness to gain benefit through breaking rules. The study reported that the primary loading for the *fairness* facet was on the honesty-humility domain with a secondary loading on the conscientiousness domain. The researchers therefore assessed the predictive validity of the *fairness* facet against the two relevant domains of

honesty-humility and conscientiousness in the prediction of CWB. The results indicated that both conscientiousness and honesty-humility predicted CWB but *fairness* predicted CWB beyond the common variance it shared with honesty-humility and conscientiousness. This study appears to counter Salgado et al.'s (2013) conclusion that the benefit of narrow measures is an “artefact result produced by methodological limitations of ... statistical analyses” (p.81). Ashton et al.'s (2014) finding adds weight to the use of narrow level assessments of personality dispositions when considering the criterion of CWB; they advised that “personality assessments ought routinely to obtain facet-level information as a means of maximizing predictive validity” (Ashton, et al., 2014 p.26).

There is an absence of published literature on the bandwidth-fidelity debate with OCB as the criterion of interest. It is likely that the results of the CWB studies are applicable to the OCB construct. In that, there is evidence in the bandwidth fidelity debate in the CWB literature to support the predictive validity of both broad and narrow measures of personality. It is clear however, that there are facet level predictors within broad measures of personality that have higher criterion validity with CWB than other facet level assessments. If these facets are combined under a domain level assessment the individual predictive validity of the one facet may be weakened by the other. However, if there is high positive inter-correlations between facets within a domain level assessment it is likely that this domain will have superior predictive validity to its individual facets.

6.7 Conclusion

There are competing theoretical positions on the strength of assessing broad verses narrow personality traits in the applied setting. Authors proposing the use of broad measures note

that assessment at broad FFM domain level allows for theoretical parsimony, generalisability of results and the use of measures with high reliability. Researchers advocating for assessment at the narrow level propose that narrow measures allow for the drawing of understandable and easily explainable conceptual links between the assessment tool and the criterion of interest and also allow for increased criterion validity. Both of these positions have merit but it is likely that the practitioner and potential employer is best served by the use of a tool that provides the most valid assessment of a criterion.

Another point of difference between researchers arguing for broad over narrow traits is the idea that the domain level assessment of the FFM provides the breadth and diversity of variance that is required to capture complex criterion in the job performance domain. Those arguing for the use of narrow traits agree that complex assessment variables may be required but they propose that the practitioner is best served by developing a regression equation that weights the facets that are particularly relevant to the criterion of interest. These researchers propose that collating facets under their particular domain level can serve to dilute and disguise important variance at the facet level and hence weaken the relationship between the ‘complex’ predictor and the criterion. Again, the practitioner and the potential employer are likely to be best served by an assessment tool that is able to optimise the criterion validity. This may be an assessment tool that employs domain level predictors because of the strength of the inter-correlations amongst the facets or it may use some other combination of facets because of the potential for weaker or inverse relationships between facets on a domain.

As summarised in the previous paragraphs there is a growing body of research that supports the use of both the factor and facet predictors for CWB. There is however minimal research that compares the predictive validity of a homogenous subset of facets to that of the domain

scores on routinely used tools in the personnel selection domain. Whilst Ashton et al. (2014) assessed facet level predictors of the HEXACO these researchers did not report results which would have allowed for the testing of a facet level regression equation against domain level assessment. Further, Hasting and O'Neil's (1998) results indicated that the predictive validity of the narrow traits over the broad measures depended on the particular domain of the personality assessment measure. As noted by Rothstein and Goffin (2006), each may be effective predictors under different conditions. As such it is necessary that research determine the potential for incremental validity of a regression equation with both NEO-PI-3 and HEXACO-PI-R facets over domain level assessment for the criteria of global CWB and OCB and their interpersonal and organisational dimensions. This research would be largely exploratory given the lack of previous empirical findings with CWB and OCB as the criterion and the strong but competing positions on the benefits of broad versus narrow measures of personality in the applied setting.

CHAPTER 7

EMPIRICAL EVALUATION OF THE PARSIMONY OF THE HEXACO IN THE ASSESSMENT OF CWB

7.1 Introduction

This chapter will focus on the empirical analysis of the CWB element of employment suitability. As detailed in chapter one, research in the personnel selection domain has seen a shift in focus from a process that assessed a person's ability to perform a specific role or their potential 'task performance' to a selection process that assesses the individual's employment competencies across broader and more generic dimensions of suitability. Counterproductive work behaviour is one of these generic suitability dimensions and assessment of this construct provides employers with valuable information on an individual's propensity to engage in behaviours that have the potential to harm colleagues, their team and the organisation as a whole.

The development of a personnel process which identifies a parsimonious tool that is able to assess the relevant predictors of CWB and its interpersonal and organisational factors will provide employers with guidance on a selection process that allows for the efficient and effective assessment of an important aspect of employment suitability. The theoretical and empirical evidence supports the ability of the HEXACO in providing this parsimonious assessment. It will be hypothesised that:

7.2 Hypotheses

H7.1: There will be significant positive relationships between the corresponding domains of the FFM and the HEXACO.

H7.2: The current study will replicate the findings of the previous studies in relation to the predictive validity of the domains of the FFM for global CWB, CWBI and CWBO. It is hypothesised that the corresponding dimensions of the HEXACO will have similar relationships. In particular;

H7.2a: There will be a significant positive relationship between emotionality and global CWB. Emotionality will have a similar strength of relationship with both CWBI and CWBO.

H7.2b: There will be a significant negative relationship between agreeableness and global CWB. The relationship with agreeableness will be larger for CWBI than CWBO.

H7.2c: There will be a significant negative relationship between conscientiousness and global CWB. This relationship will be larger for CWBO than CWBI.

H7.2d: There will be a significant negative relationship between extraversion and global CWB. This relationship will be larger for CWBO than CWBI. This relationship will be weaker than the relationships between emotionality, agreeableness and conscientiousness and global CWB, CWBO and CWBI.

H7.2e: There will be a significant negative relationship between openness and CWB. This relationship will be weaker than the relationships of emotionality, agreeableness and conscientiousness and CWB, CWBO and CWBI.

H7.2f: There will be a significant negative relationship between honesty-humility and global CWB, CWBI and CWBO.

H7.2g: There will be a significant positive relationship between trait anger with global CWB, CWBI and CWBO.

H7.2h: There will be a significant negative relationship between self control with global CWB, CWBI and CWBO.

H7.3: The HEXACO will account for more variance in global CWB and its interpersonal and organisational dimensions than the FFM.

H7.4 Both the HEXACO and the FFM will be able to account for substantial variance of the trait anger and self control constructs in the prediction of global CWB, CWBI and CWBO.

7.3 Method

Participants

Participants in the current study were individuals undertaking psychological testing for employment purposes within the Australian Public Service domain. Data for the current study were only used from individuals who consented to have their data used for research purposes, reported a previous work history and had valid responses on the CWB outcome measure. The number of participants reaching these criteria was 1273. Age data were collected on 1139 of these participants. The average age of these participants was 28.59 years ($SD = 9.06$). Gender was collected on 1265 individuals: females comprise 34.6 % of this research sample and males comprised 64.7 % of the sample and gender data was missing for .7% of the sample.

Measures

Counterproductive Work Behaviour

Participants completed Bennett and Robinson's (2000) 19-item self-report CWB measure. Of the 19 items on this measure 7 items focused on CWBI and 12 on CWBO. The current data demonstrated that Bennett and Robinson's (2000) scale good internal consistency with a Cronbach's alpha of .88 for global CWB, .84 for the CWBI scale and .82 for the CWBO scale. Participants completing this measure were asked to rate each item on a seven point scale with reference to the degree to which they engaged in the behaviours listed in the questionnaire (1= "never" to 7 = "always"). Bennett and Robinson (2000) used the anchors of 1= never and 7 = daily. Given the lack of anonymity⁶ for the participants in the current sample it was considered that the anchors of "never" and "always" would lead to more accurate self-report. In order to increase the relevance of Bennett and Robinson's (2000) to the current sample one item was changed from "falsified a receipt to get reimbursed for more money than you spent on a business expense" to "inappropriately use a corporate credit card or travel card".

Five Factor Model

Participants completed the NEO-PI-3 (McCrae & Costa, 2010). This is a 240 item measure that provides an assessment of the individual against the five domains of the FFM. This measure has six facets for each domain. The domains and facets of the NEO-PI-3 are presented in Table 2.2. The NEO-PI-3 asks participants to rate each of 240 items on a five point scale from 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree. It also asked participants to note their gender and their age and includes three

⁶ Participant responses on the CWB measure were reviewed by psychologists making suitability recommendations.

‘validity’ items that asks participants to indicate the degree to which they responded to all items in an accurate manner, that the individual has responded to all items and that they have marked their answers in the correct spaces.

The authors of the NEO-PI-3 have reported good internal reliability for domain level measures; Cronbach’s alpha for NEO-PI-3 domains ranged from .89 for extraversion and openness to .93 for the emotionality domain (McCrae & Costa, 2010). The Cronbach’s alpha for the internal consistency for 25 of the 30 facets of the NEO-PI-3 was above $\alpha = .70$ (McCrae & Costa, 2010). Five facets of the NEO-PI-3 had internal consistency coefficients below $\alpha = .70$. These facets included impulsiveness $\alpha = .66$, activity $\alpha = .69$, excitement seeking $\alpha = .69$, actions $\alpha = .54$ and tender-mindedness $\alpha = .69$ (McCrae & Costa, 2010) (See Appendix A for the Cronbach’s alpha values for the NEO-PI-3 domains and facets in this study). The data indicate a large degree of consistency between the reliability coefficients of the current study and that obtained by McCrae and Costa (2010)

Six Factor Model

The six factor model of personality was measured using the HEXACO-PI-R (Ashton, 2011). This is a 200 item self-report measure that provides an assessment of applicants against the six domains of this model and four facets within each of the six domains. The domains and facets of this measure are detailed in Table 4.2. The HEXACO-PI-R asks participants to rate themselves on each of the 200 items on a five point scale: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree. As noted in section 4.2, the HEXACO-PI-R is a revision of the HEXACO-PI and the newer version of the instrument includes an interstitial facet, altruism, which the authors note is a facet that has the propensity to load across the

honesty-humility, emotionality and agreeableness domains. The altruism scale was not therefore included in domain level analysis.

Internal consistency data has not been published on the HEXACO-PI-R but a private communication from the author of this measure indicates that the internal reliabilities of this tool are consistent with those published for the HEXACO-PI. Data on reliability coefficients for the HEXACO-PI indicated that the coefficients at the factor level ranged from $\alpha = .87$ (emotionality – adult sample) to $\alpha = .91$ (honesty-humility – student sample) (Lee & Ashton, 2006). At the facet level the mean reliability coefficients ranged from $\alpha = .82$ to $.79$ (Lee & Ashton, 2006). The authors noted that the *flexibility* facet in their adult sample ($\alpha = .65$) was the only self-report facet to have an alpha below $.7$. See Appendix A for the internal consistency results for the HEXACO-PI-R domains and scales in the current study.

Trait Anger

The trait anger scale used in the current study was the ten-item trait anger subscale from that State Trait Anger Expression Inventory – 2 (Spielberger, 1999). This measure asked participants to rate how they generally feel against each of the ten items where 1 = almost never, 2 = sometimes, 3 = often and 4 = almost always. The tool was reported to have good internal consistency $\alpha = .86$ (Spielberger, 1999). Reliability analysis of the instrument in the current sample was lower but still within an acceptable range ($\alpha = .76$).

Self-Control

Participants also completed the Brief Self Control Scale (Brief SCS; Tangney et al., 2004). This is a 13 item self-report measure that asked participants to rate on a five point scale how much each of the item reflected how you ‘typically are’ (1 = not at all to 5 = very much).

Tangney et al. (2004) demonstrated that the Brief SCS had good internal consistency across two separate studies ($\alpha = .83$ and $\alpha = .85$). The current study also found this tool to have good internal validity ($\alpha = .80$).

Procedure

Participants in the current study completed a battery of psychological tests as part of screening for employment. The measures used in the current study were a subset of the tests used in a broader selection process. In most cases the tests were completed in a group setting ($N_g = 1038$) and a smaller proportion of individuals completed the tests as a single participant ($N_i = 235$). In all cases individuals were instructed to provide honest responses to questions.

Individuals were informed that the aim of the research was to review the effectiveness of the psychological tools used in the assessment process. They were informed that their participation in the study would not require anything from them above what was already required by the wider screening process.

The tests were presented to participants in a counterbalanced order and participants were asked to review the instructions for each test prior to providing their responses to items on that test. Counterbalancing the administration of tests was especially important because of the degree of overlap of content (HEXACO vs NEO) and the potential for fatigue.

7.4 Results

The dependent variables (DV) were participant's scores on the measure of global CWB as well as their scores on the CWBI and CWBO scales of this instrument. The independent

variables (IV) were different for each of the hypotheses. Each of the domains of the HEXACO and the FFM as well as the dispositional measures of trait anger and self control served as independent variables in one or more of the hypotheses and resultant statistical analyses.

Hypothesis 7.1 proposed that there was a significant positive relationship between the corresponding domains of the NEO-PI-3 and the HEXACO-PI-R. This hypothesis was analysed using Pearson's correlation coefficient and Cohen's *d* analysis.

The second set of hypotheses of this chapter (7.2a - h) were related to the relationships between the FFM and the HEXACO domains and the global and interpersonal and organisational dimensions of the CWB construct. These hypotheses were analysed using the Pearson's correlation coefficient and Steiger's *z* analysis.

The next hypothesis in this chapter (7.3) proposed that the HEXACO would account for more variance than the FFM in global CWB and its interpersonal and organisational dimensions. In order to compare the parsimony of the HEXACO-PI-R and the NEO-PI-3 in the prediction of global CWB and its interpersonal and organisational dimensions, consideration was given to conducting analysis through structural equation modelling with the domains of the personality models serving as endogenous variables loading onto a latent variable; HEXACO or FFM. This latent variable, which represents the shared variance of the personality models, would then used to predict another latent variable 'CWB' that was a combination of the endogenous CWBI and CWBO variables. The difficulty with using SEM is that the separate domains of the personality models tap different aspects of personality and their combination into a latent variable, which represents the shared variance of these domains, is unlikely to

provide a robust latent variable due to the large variance between the domains and hence the resultant fit of the SEM is likely to be poor. It was determined that the most appropriate analysis for this hypothesis was a general linear model and comparisons made of the relevant R^2 's for each of the models.

The last hypotheses of this chapter considered the ability of the HEXACO and the FFM to account for the variance of trait anger and self control in the prediction of global CWB and its interpersonal and organisational dimensions. These hypotheses were tested using separate hierarchical linear regression models with the domains of the general personality measures entered into the equation at the first step and trait anger and self control entered at the second steps.

7.4.1. Missing Data

In the current data set there were two types of missing data; missing data at the item level and missing data at the scale level. Missing data at the item level occurred when a participant failed to record a response for one or more items on the dependent or independent measures. Missing data at the item level on the NEO-PI-3 was managed by substitution of a neutral response (raw score of 2) for that item⁷. Missing items on all other scales were managed by substitution of the individual's scale mean score for that scale. This was done in cases where there were two or less items per scale missing. Scores were not generated for scales where there were more than two items missing.

Missing data at the scale level was the result of more than two missing items on that scale or the incorrect electronic interpretation of hand-written participant numbers on response sheets

⁷ This is the default process used by the electronic scoring package of the NEO-PI-3 and is also a recommendation provided in the technical manual of the NEO-PI-3 (McCrae & Costa, 2010).

for the measure. The current data sample was large enough to have the power to obtain significant effects even with the missing scales for some participants. It was assessed that the time investment required to correct for the missing scale data was unlikely to alter the results. The sample size, reflecting missing data on some of the scales, is reported for each analysis in the results.

7.4.2 Adjustment for Multiple Analyses

The same data set has been used for multiple analyses in this and two subsequent empirical chapters. In order to control for Type I error a more conservative alpha level of $p = .01$ was adopted to indicate significance.

7.4.3 Relationship between HEXACO and NEO-PI-3

The first hypothesis of this chapter, H7.1, proposed that there would be significant positive relationships between corresponding domains of the NEO-PI-3 and the HEXACO-PI-R. The correlation matrix of the relationships between the domains of the two personality measures is presented in Table 7.1. The results were largely supportive of this hypothesis. The correlations between the corresponding domains of the two measures are presented in blue font. Results indicate that the HEXACO-PI-R had significant relationships in the expected direction with all the corresponding domains of the NEO-PI-3. All of the HEXACO-PI-R domains had their highest correlations with the corresponding domains of the NEO-PI-3.

The results demonstrated that the domains of the NEO-PI-3 had their strongest relationships with the corresponding scales of the HEXACO-PI-R on all but one domain. The emotionality domain of the NEO-PI-3 had significant relationships with a number of the HEXACO-PI-R domains and whilst the relationship between the emotionality domain of the NEO-PI-3 and

the emotionality domain of the HEXACO-PI-R was strong and in the expected negative direction, the NEO-PI-3 emotionality domain also had strong negative relationships with the HEXACO-PI-R domains of extraversion, agreeableness and conscientiousness. Table 7.1 also demonstrates that there a number of significant relationships between non-corresponding domains of the HEXACO-PI-R and NEO-PI-3 instruments.

Table 7.1

Correlations and effect size for relationships between NEO-PI-3 and the HEXACO-PI-R Domains

	NEO - Emot	NEO - E	NEO - O	NEO - A	NEO - C
HEX – HH	-.26** ^a (.54)	-.03 ^a (.06)	.07** ^b (.14)	.61** ^a (1.54)	.22** ^b (.45)
HEX – Emot	.56** ^a (1.35)	-.03 ^a (.06)	.14** ^b (.28)	.18** ^a (.37)	-.23** ^b (.47)
HEX – E	-.57** ^a (1.39)	.81** ^a (2.76)	.31** ^b (.65)	.21** ^a (.43)	.47** ^b (1.06)
HEX – A	-.48** ^c (1.09)	.24** ^c (.49)	.18** ^d (.37)	.55** ^c (1.32)	.32** ^d (.68)
HEX – C	-.43** ^a (.95)	.31** ^a (.65)	.12** ^b (.24)	.24** ^a (.49)	.84** ^b (3.10)
HEX – O	-.13** ^a (.26)	.27** ^a (.56)	.78** ^b (2.49)	.09** ^a (.18)	.16** ^b (.32)

Correlations are Pearson's *r*, effect size: Cohen's *d*, presented in parentheses

^a *n* = 1200, ^b *n* = 1201, ^c *n* = 1206, ^d *n* = 1207 ***p* < .01

The sample for the current study was large and as this will have affected the magnitude of the correlations meeting the significance criterion, a Cohen's *d* effect size was therefore calculated to control for the effects of the large sample size. The effect size of the correlations are presented in parentheses under each correlation in Table 7.2. Cohen (1992) recommended that a *d* score of .2 indicated a small effect size, .5 indicated a medium effect size and .8 indicated a large effect size. Using these guidelines the relationships between each of the corresponding domains of the HEXACO-PI-R and NEO-PI-3 remained large.

The relationships between the NEO-PI-3 emotionality domain and the HEXACO-PI-R domains of extraversion, agreeableness and conscientiousness also remained large. There was also a large relationship between conscientiousness domain of the NEO-PI-3 and the extraversion domain of the HEXACO-PI-R. When considering the relationships between the HEXACO-PI-R honesty-humility domain, which does not have a direct corresponding domain on the NEO-PI-3, the results indicated a strong relationship between this domain of the HEXACO-PI-R and the agreeableness domain of the NEO-PI-3.

7.4.4 Relationships Between Personality Measures and CWB

The second hypothesis of this chapter, H7.2, proposed that the current study would replicate previous empirical findings demonstrating relationships between the domains of the FFM and the HEXACO with global CWB, CWBI and CWBO. This hypothesis also proposed that the current study would replicate previous empirical findings demonstrating relationships between trait anger, self control and the CWB DVs. These relationships were analysed using correlational analysis and the results are presented in Table 7.2.

Table 7.2

Correlation Matrix of NEO-PI-3 and HEXACO-PI-R Domains, Self Control and Trait with Global CWB, CWBI and CWBO

Variable	Measure	Global CWB	CWBI	CWBO
Global CWB			.89**	.89**
CWBI				.57**
Emotionality	NEO ^a	.27** (.56)	.18** (.37)	.30** (.63)
	HEX ^c	.05 (.10)	-.04 (-.08)	.12** (.24)
Extraversion	NEO ^a	-.18** (-.37)	-.15** (-.30)	-.17** (-.35)
	HEX ^c	-.23** (-.47)	-.19** (-.39)	-.21** (-.43)
Openness	NEO ^b	-.15** (-.30)	-.20** (-.41)	-.06* -.12
	HEX ^c	-.15** (-.30)	-.19** (-.39)	-.08** (-.16)
Agreeableness	NEO ^a	-.36** (-.77)	-.38** (-.82)	-.27** (-.56)
	HEX ^d	-.34** (-.72)	-.33** (-.70)	-.28** (-.58)
Conscientiousness	NEO ^b	-.40** (-.87)	-.33** (-.70)	-.39** (-.85)
	HEX ^c	-.41** (-.90)	-.32** (-.68)	-.40** (-.87)
Honesty-humility ^a		-.30** (-.63)	-.26** (-.54)	-.28** (-.58)
Self control ^f		-.46** (-1.04)	-.35** (-.75)	-.47** (-1.07)
Trait anger ^g		.36** (.77)	.27** (.56)	.37** (.80)

^a n = 1233, ^b n = 1234, ^c n = 1237, ^d n = 1244, ^e n = 1244, ^f n = 1244, ^g n = 2156, **p < .001

The correlation analysis demonstrated that the results of the current study were largely consistent with previous empirical findings on the relationships between FFM domains and the corresponding domains of the HEXACO and the CWB DVS. There were significant correlations in the expected direction for all the variables besides the HEXACO-PI-R emotionality domain and the global CWB and CWBI DVs. This domain showed a positive relationship with CWBO as predicted, but there was a weak negative relationship with the CWBI DV (identified in blue font in Table 7.2). It is likely that this relationship served to weaken the relationship between HEXACO emotionality and global CWB.

As noted in section 7.5.3, the large sample size in these analyses may have inflated the significance levels of the correlations. Cohen's d effect sizes were calculated to control for the effect of sample size. Again using Cohen's (1992) recommendations ($d = .2$ small effect, $d = .5$ medium effect and $d = .8$ large effect size) the correlation between the HEXACO-PI-R and the NEO-PI-3 and the emotionality, extraversion and openness domains and all CWB DVs were small. Whilst the relationship between the agreeableness, conscientiousness and honesty-humility domains as well as trait anger and self-control were moderate to large for all DVs.

As predicted (H7.2b), there was a significant negative relationship between the agreeableness domain of both the FFM and the HEXACO with global CWB, CWBI and CWBO (see green font Table 7.2). This hypothesis also predicted that agreeableness would have a stronger relationship with CWBI than CWBO. The results were supportive this prediction across the FFM and HEXACO instruments (see Table 7.2). A Steiger's z calculation was used to determine if the relationship between agreeableness and CWBI was *significantly* larger than the relationship between agreeableness and CWBO. This analysis indicated that the

relationship was significantly larger between agreeableness and CWBI than it was with CWBO for the NEO-PI-3, $z = 4.45, p < .001$ but not the HEXACO-PI-R, $z = 2.01, p > .01$.

Hypothesis H7.2c predicted that the conscientiousness domain of the FFM and the HEXACO would have a significant negative relationship with global CWB and its interpersonal and organisational dimensions. The results supported this prediction for both the five and six factor personality instruments (see red font Table 7.2). This hypothesis further predicted that the relationship would be larger between conscientiousness and CWBO than it was with CWBI. The results supported this prediction for both models of personality (see Table 7.2). The Steiger's z calculation indicated that the relationship was significantly larger between conscientiousness and CWBO than it was between conscientiousness and CWBI for both the HEXACO-PI-R, $z = 3.55, p < .001$ and the NEO-PI-3, $z = -2.84, p < .01$.

It was hypothesised that there would be a significant negative relationship between the extraversion domains of the FFM and the HEXACO with global CWB and its interpersonal and organisational dimensions (H7.2d). The results supported this prediction (see brown font Table 7.2). This hypothesis further predicted that the relationship with extraversion would be larger for CWBO than CWBI. A Steiger's z calculation did not support this prediction for the HEXACO-PI-R, $z = .66, p = .51$ or the NEO-PI-3, $z = .96, p = .34$: extraversion did not have significantly larger relationship with CWBO than CWBI. The final part of this hypothesis proposed that the relationship between extraversion and CWB would be less robust than the relationship between the FFM and HEXACO domains of conscientiousness, emotionality and agreeableness with CWB. This component of the hypothesis was analysed by multiple regression analysis which will be reported in section 7.5.5.

The first part of H7.2e predicted that there would be a significant negative relationship between the openness domains of both the FFM and the HEXACO with global CWB. The analysis of the correlational relationships between the openness domain of the FFM and the HEXACO supported this hypothesis (see purple font Table 7.2). Whilst not a specific prediction of this study, analysis via Steiner's z indicated that the strength of this relationship was with the CWBI dimension of CWB: the openness domain had a larger relationship with the CWBI than CWBO for both the NEO-PI-3, $z = 5.05, p < .001$ and the HEXACO-PI-R, $z = 3.95, p < .001$.

It was further hypothesised (H7.2e) that the relationships between openness and the DVs would be weaker than the relationships between emotionality, agreeableness, conscientiousness domains and the DVs. As with this component of the previous hypothesis, H7.2d, the empirical analysis of this prediction will be represented in section 7.5.5.

7.4.5. Comparison of the HEXACO and the FFM in the Prediction of Global CWB, CWBI and CWBO

The use of multivariate regression analysis allows for the consideration of the independent contribution of each of the domains of the personality models with each of the levels of the DV. As demonstrated in section 7.5.4 the domains of the personality models vary in the strength of their relationships with the DVs and the use of multivariate regression analysis allows for the consideration of the independent variance of each of the domains. Two separate multivariate regression analyses were conducted to evaluate the predictive validity of the NEO-PI-3 and the HEXACO-PI-R domains on the three CWB DVs (global CWB, CWBI and CWBO). The resulting regression equations and parameter estimates for each of the separate IVs were then analysed.

A general linear model (GLM) with global CWB, CWBI and CWBO serving as DVs and the six domains of the HEXACO-PI-R serving as IVs was constructed. The results indicated all domains of the HEXACO, besides the extraversion domain, were significant predictors of the composite of CWB DVs; Wilks' Lambda = .67 ($p < .001$). The second GLM using the domains of the NEO-PI-3 as predictors, also indicated that each of the domains, again besides the extraversion domain, were significant predictors of the CWB composite DV; Wilks' Lambda = .72 ($p < .001$). The following paragraphs will detail the different regression analyses and parameter estimates for each of the personality models with each of the DVs.

Global CWB

Multiple linear regression indicated that the HEXACO-PI-R domains explained a significant proportion of the variance in global CWB, adjusted $R^2 = .23$, $F(1, 1230) = 64.06$, $p < .001$. Analysis indicated that the NEO-PI-3 domains explained the same proportion of variance, adjusted $R^2 = .23$, $F(1, 1225) = 75.31$, $p < .001$. The summary statistics for these regression models are presented in Tables 7.3 and 7.4. These summary statistics indicate that the honesty-humility, agreeableness and conscientiousness domains of the HEXACO model of personality make a significant contribution to the prediction of global CWB. The regression summary statistics for the FFM model indicate that the conscientiousness, agreeableness and openness within the FFM make a significant contribution to the prediction of global CWB.

Table 7.3

Summary of Multiple Regression Analysis for HEXACO Domains with CWB-Global

Variable	<i>B</i>	<i>SE B</i>	β
Constant	3.82	.16	
HEX Honesty-Humility	-.14	.03	-.15**
HEX Emotionality	-.05	.02	-.05
HEX Extraversion	-.01	.03	-.01
HEX Agreeableness	-.17	.03	-.18**
HEX Conscientiousness	-.28	.03	0.31**
HEX Openness	-.03	.02	-.03

** $p < .001$.

Table 7.4

Summary of Multiple Regression Analysis for NEO Domains with CWB-Global

Variable	<i>B</i>	<i>SE B</i>	β
Constant	3.20	.15	
NEO Emotionality	.00	.00	.03
NEO Extraversion	.00	.00	.04
NEO Openness	.00	.00	-.10**
NEO Agreeableness	-.01	.00	-.25**
NEO Conscientiousness	-.01	.00	-.32**

** $p < .001$.*CWBI*

Multiple linear regression indicated that the HEXACO-PI-R domains explained significant variance in the CWBI DV, adjusted $R^2 = .19$, $F(1, 1230) = 48.52$, $p < .001$. A separate analysis indicated that the NEO-PI-3 domains also explained significant variance in CWBI, adjusted $R^2 = .21$, $F(1, 1225) = 66.58$, $p < .001$. A summary of the regression statistics for these regression models are presented in Tables 7.5 and 7.6. These summary statistics indicate that the honesty-humility, emotionality, agreeableness, conscientiousness and

openness domains of the HEXACO make a significant contribution to the prediction of CWBI. The openness, agreeableness and conscientiousness domains of the FFM make a significant contribution to the prediction of CWBI.

Table 7.5

Summary of Multiple Regression Analysis for HEXACO Domains with CWB-Interpersonal

Variable	<i>B</i>	<i>SE B</i>	β
Constant	4.51	.23	
HEX Honesty-Humility	-.15	.09	-.11**
HEX Emotionality	-.16	.04	-.12**
HEX Extraversion	-.01	.04	.00
HEX Agreeableness	-.28	.04	-.22**
HEX Conscientiousness	-.30	.04	-.22**
HEX Openness	-.10	.03	-.09*

* $p < .01$, ** $p < .001$.

Table 7.6

Summary of Multiple Regression Analysis for NEO Domains with CWB-Interpersonal

Variable	<i>B</i>	<i>SE B</i>	β
Constant	4.33	.22	
NEO Emotionality	.00	.00	-.04
NEO Extraversion	.00	.00	.06
NEO Openness	-.01	.00	-.16**
NEO Agreeableness	-.01	.00	-.29**
NEO Conscientiousness	-.01	.00	-.27**

** $p < .001$.

CWBO

Multiple linear regression indicated that the HEXACO-PI-R domains explained significant variance in the CWBO DV, adjusted $R^2 = .20$, $F(1, 1230) = 53.54$ $p < .001$. The NEO-PI-3

domains also explained significant variance in CWBO, adjusted $R^2 = .18$, $F(1, 1225) = 55.60$, $p < .001$. A summary of the statistics for these regression models are presented in Tables 7.7 and 7.8. These summary statistics indicate that the honesty-humility, agreeableness and conscientiousness domains of the HEXACO model of personality make a significant contribution to the prediction of CWBO and the emotionality, agreeableness and conscientiousness domains within the FFM make a significant contribution to the prediction of CWBO.

Table 7.7

Summary of Multiple Regression Analysis for HEXACO Domains with CWB-Organisational

Variable	<i>B</i>	<i>SE B</i>	β
Constant	3.10	.15	
HEX Honesty-Humility	-.14	.02	-.16**
HEX Emotionality	.03	.02	.04
HEX Extraversion	-.02	.03	-.02
HEX Agreeableness	-.09	.03	-.11**
HEX Conscientiousness	-.27	.03	-.32**
HEX Openness	-.02	.02	.02

** $p < .001$.

Table 7.8

Summary of Multiple Regression Analysis for NEO Domains with CWB-Organisational

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.49	.14	
NEO Emotionality	.00	.00	.09*
NEO Extraversion	.00	.00	.01
NEO Openness	.00	.00	-.02
NEO Agreeableness	.00	.00	-.15**
NEO Conscientiousness	-.01	.00	-.30**

* $p < .01$, ** $p < .001$.

7.4.5.1. Summary of Comparison of HEXACO and NEO-PI-R in the Prediction of Global CWB, CWBI and CWBO

The regression results indicate that the proportion of variance explained by the domains of the HEXACO and FFM for each of the DVs is relatively consistent. The results indicate that both models of personality account for significant variance in the DV but neither personality model appears to provide an assessment that would be considered as superior to the other. Table 7.9 provides a summary of the standardised beta weights for the domain contributors which provide a significant contribution to the prediction of each of the DVs.

Table 7.9

Standardised Beta Weights of Significant Predictors in Regression Equations for Global CWB, CWBI and CWBO

	HEXACO-PI-R						NEO-PI-3				
	HH	Emot	E	A	C	O	Emot	E	O	A	C
GCWB	-.15			-.18	-.31				-.10	-.25	-.32
CWBI	-.11	-.12		-.22	-.22	-.09			-.16	-.29	-.27
CWBO	-.16			-.11	-.32		.09			-.15	-.30

The final element of both hypothesis 7.2d and 7.2e proposed that the HEXACO and FFM domains of extraversion and openness would provide a smaller contribution to the prediction of global CWB, CWBI and CWBO than was provided by the other domains of these personality models. These hypotheses were analysed by considering the comparative strength of the standardised beta coefficients of the regression equations for extraversion and openness with each of the DVs.

Analysis indicated that the extraversion and openness domains had the smallest beta weights of the HEXACO domains in the regression model predicting global CWB, CWBI and CWBO (see blue font in Tables 7.3, 7.5 and 7.6 respectively).

Consideration of these hypotheses (7.2d and 7.2e) with respect to NEO-PI-3 indicated that extraversion was a weak and insignificant predictor for global CWB, CWBI and CWBO (see orange font in Tables 7.4, 7.6 and 7.8 respectively) but it was assessed to have larger beta coefficients than the NEO-PI-3 emotionality domain for global CWB and CWBI. The openness domain of the NEO-PI-3 was assessed as a significant contributor to the prediction of global CWB (see purple font in Table 7.4) and CWBI (see purple font in Table 7.6) and it had a larger beta coefficient than the emotionality domain which did not make a significant contribution to the prediction of these DVs. Openness was however, a weak and insignificant contributor to the prediction of CWBI and emotionality, agreeableness and conscientiousness were all significant contributors to this regression model (see purple font in Table 7.8).

The results can therefore be considered as supportive of extraversion being a weaker contribution to the prediction of CWB and its dimensions than emotionality, agreeableness and conscientiousness. The results indicate that openness on the HEXACO was a weaker predictor of the CWB DVs, but when assessed by the NEO-PI-3 openness provides a stronger contribution to the prediction of CWBI and consequently global CWB than the emotionality domain does.

7.4.5.2 HEXACO, FFM and Trait Anger and CWB

Hierarchical regression analyses were performed to determine if the HEXACO and the FFM were able to account for the variance in the trait anger construct when predicting global

CWB, CWBI and CWBO. The HEXACO and FFM domains were entered in the first step of the regression models and trait anger was entered at the second step.

Global CWB

Hierarchical linear regression again supported the predictive validity of the HEXACO-PI-3 domains in accounting for variance in the global CBW construct, adjusted $R^2 = .24$, $F(1, 1216) = 64.06$, $p < .001$, the addition of the trait anger measure saw a significant increase in the variance explained, adjusted $R^2 = .27$, $F(1, 1215) = 64.33$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1215) = 50.36$, $p < .001$.

As expected, hierarchical linear regression with the NEO-PI-3 domains entered in the first step indicated that the NEO-PI-3 again accounted for significant variance in the global CWB construct, adjusted $R^2 = .23$, $F(1, 1210) = 73.90$, $p < .001$. The addition of trait anger saw a significant increase in the variance explained, adjusted $R^2 = .28$, $F(1, 1209) = 76.45$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1209) = 68.61$, $p < .001$.

The summary statistics of this regression analysis is presented in Tables 7.10. and 7.11. The same effect was found for each level of the DV (CWBI and CWBO). To provide a succinct presentation of the results in this chapter the analyses for CWBI and CWBO are presented in the Appendix B. In totality the analyses indicated that neither the HEXACO-PI-R or the NEO-PI-3 is able to account for all of the variance of trait anger in the prediction of global CWB, CWBI and CWBO: trait anger makes a significant and unique contribution to the prediction of CWB and its dimensions.

Table 7.10

Summary of Multiple Regression Analysis for HEXACO Domains and Trait Anger with CWB-Global

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.83	.16		3.09	.19	
HEX Honesty-Humility	-.14	.03	-.15**	-.10	.03	-.11**
HEX Emotionality	-.05	.02	-.05	-.08	.02	.08*
HEX Extraversion	-.01	.03	-.01	.00	.03	.00
HEX Agreeableness	-.17	.03	-.19**	-.08	.03	-.08*
HEX Conscientiousness	-.29	.03	0.31*	-.28	.03	-.30**
HEX Openness	-.03	.02	-.03	-.04	.02	-.05
Trait Anger				.21	.04	.22**

* $p < .01$, ** $p < .001$.

Table 7.11

Summary of Multiple Regression Analysis for NEO Domains and Trait Anger with CWB-Global

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.19	.15		2.80	.15	
NEO Emotionality	.00	.00	.03	.00	.00	-.09*
NEO Extraversion	.00	.00	.03	.00	.00	.01
NEO Openness	.00	.00	-.10*	.00	.00	.10**
NEO Agreeableness	-.01	.00	-.25**	.00	.00	-.18**
NEO Conscientiousness	-.01	.00	0.32**	-.01	.00	-.33**
Trait Anger				0.10	.04	.25**

* $p < .01$, ** $p < .001$.

7.4.5.3 Personality Models, Self Control and CWB

Hierarchical linear regression was used to determine if the HEXACO-PI-R and NEO-PI-3 were able to account for the variance of self-control in the prediction of global CWB, CWBI

and CWBO. For each of the dependent variables the HEXACO and the FFM were entered in the first step of the regression equation and self control was entered at the second step.

Global CWB

Again, the HEXACO-PI-R domains predicted significant variance in the global CWB DV, adjusted $R^2 = .24$, $F(1, 1194) = 64.29$, $p < .001$ the addition of self control to the model saw a significant increase in the proportion of variance explained in the DV, adjusted $R^2 = .29$, $F(1, 1193) = 69.44$, $p < .001$. The change in R^2 with the addition of self control was significant, $F(1, 1193) = 77.14$, $p < .001$. The summary statistics for this regression model are presented in Table 7.12. Hierarchical linear regression with the NEO-PI-R domains entered in the first step indicated that the FFM again accounted for significant variance in the global CWB construct, adjusted $R^2 = .24$, $F(1, 1189) = 72.99$, $p < .001$ and self control saw a significant increase in the proportion of variance explained in the DV, adjusted $R^2 = .29$, $F(1, 1188) = 80.31$, $p < .001$. The change in R^2 with the addition of self control was significant, $F(1, 1188) = 89.70$, $p < .001$. The summary statistics are presented in Table 7.13.

Table 7.12

Summary of Multiple Regression Analysis for HEXACO Domains and Self Control with CWB-Global

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.88	.16		4.04	.16	
HEX Honesty-Humility	-.15	.03	-.16**	-.10	.03	-.12**
HEX Emotionality	-.05	.02	-.05	-.08	.02	.08*
HEX Extraversion	-.01	.03	-.01	.03	.03	.03
HEX Agreeableness	-.17	.03	-.19**	-.14	.03	-.15
HEX Conscientiousness	-.29	.03	0.31**	-.15	.03	-.16**
HEX Openness	-.03	.02	-.03	-.05	.02	-.07
Self Control				-.23	.03	.30**

* $p < .01$, ** $p < .001$.

Table 7.13

Summary of Multiple Regression Analysis for NEO Domains and Self Control with CWB-Global

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.23	.15		3.80	.16	
NEO Emotionality	.00	.00	.03	.00	.00	-.06*
NEO Extraversion	.01	.00	.04	.00	.00	.03
NEO Openness	.00	.00	-.10*	.00	.00	.12**
NEO Agreeableness	-.01	.00	-.25**	.01	.00	-.23**
NEO Conscientiousness	-.01	.00	0.32**	.00	.00	-.15**
Self Control				.26	.03	.33**

* $p < .01$, ** $p < .001$.

Consistent with trait anger, the same effect was found for each dimension of the DV: CWBI and CWBO. The summary statistics and regression equations for these additional analyses are presented in Appendix B. Overall, the results indicate that neither the HEXACO-PI-R nor

the NEO-PI-3 were able to account for all of the variance of self control in the prediction of global CWB, CWBI and CWBO: self control makes a significant and unique contribution to the prediction of global CWB, CWBI and CWBO.

7.4.6. Summary of Results

The results of the current chapter indicate that there is significant overlap between the corresponding domains of the HEXACO-PI-R and the NEO-PI-3 and significant relationships between all IV and DVs in the expected directions besides the emotionality domain of the HEXACO and global CWB and CWBO. The HEXACO domains were able to account for significant variance in global CWB, CWBI and CWBO but the domains of the FFM were also able to account for significant variance in each of the DVs and there was little difference between the two personality models in the amount of variance explained in global CWB, CWBI and CWBO. The addition of the trait anger to models that predict CWB and its interpersonal and organisational dimensions saw a significant increase in the amount of variance explained, indicating that the HEXACO-PI-R and the NEO-PI-3 were not able to capture all the variance in anger in explaining global CWB, CWBI and CWBO. Further, the addition of self control to the personality models in the prediction of CWB also saw an increase in the amount of variance explained in all of the DVs, again indicating that self control includes variance that is not captured by the HEXACO-PI-R or the NEO-PI-3 in the prediction of global CWB, CWBI and CWBO.

7.5 Discussion

The aim of this chapter was to determine if the HEXACO provided a more parsimonious assessment of the global CWB criterion and its interpersonal and organisational dimensions. Specifically, the chapter proposed that the five and six factor models would have significant

overlap in the corresponding domains of each of the personality models and it was proposed that all of the domains of the FFM and the HEXACO would have significant relationships with global CWB and some domains would have stronger relationships with either the CWBI or CWBO dimension of the CWB construct. It was proposed that the HEXACO model of personality had the potential to provide employers with a more parsimonious assessment of an individual's propensity for CWB due to the theoretical reasoning and its proposed capacity to provide an assessment of an individual's pro-social and the exploitative tendencies. The stressor-emotion causal model of CWB proposes that an individual engages in CWB as a form of retaliation after the experience of negative emotion and it was argued that the theoretical position of the HEXACO meant that it was better positioned, than the FFM, to account for both the negative emotion aspects of this causal CWB model as well as the retaliatory tendencies. This chapter also highlighted the requirement to consider the dispositional predictors of trait anger and self-control in a process aimed at identifying a parsimonious assessment of CWB. It proposed that it was likely that both the HEXACO and the FFM were able to account for these variables in the prediction of CWB and its dimensions.

The results of the current study were consistent with the prediction of significant overlap in the corresponding domains of the HEXACO and the FFM with analyses indicating a large degree of shared variance between each of the corresponding domains of the personality models. The analysis also indicated that whilst the NEO-PI-3 emotionality domain had a significant relationship with the corresponding domain of the HEXACO-PI-R, it also had significant relationships of similar magnitude with other domains of the HEXACO-PI-R including the extraversion, agreeableness and conscientiousness domains. It is therefore likely that the content of the NEO-PI-3 emotionality domain is likely to be shared across

different domains of the HEXACO-PI-R rather than concentrated to the corresponding domain of the instrument. The anger content of the FFM emotionality domain was placed on the agreeableness domain of the HEXACO-PI-R and this is likely to explain the significant relationship between these two domains in the current analysis. The significant negative relationships between the NEO-PI-3 emotionality domain and the HEXACO-PI-R extraversion and conscientiousness domains are likely to be understood by analysis of the facet level composition of these domains. The NEO-PI-3 emotionality domain includes content related to low mood and anxious temperament and the HEXACO-PI-R extraversion domain includes content related to confidence and positive self-regard. An argument could be made that elements of the HEXACO-PI-R extraversion domain therefore assesses a number of traits that are at the positive end of a spectrum of self-confidence or self-belief whilst the NEO-PI-3 emotionality domain assesses these traits at the negative end of this spectrum. The HEXACO-PI-R conscientiousness domain has facet level content related to inhibiting impulses and considering consequences and this again could be considered as the positive end of a spectrum that assesses restraint whilst the NEO-PI-3 emotionality domain has facet level content that assesses the negative end of this dimension. In sum, the consistency between the HEXACO-PI-R and the NEO-PI-3 for domain content indicates a large degree of overlap between the instruments. The divergence between the two instruments is primarily with the content of the NEO-PI-3 emotionality domain and analysis of the content at the facet level indicates that it is likely that the content of the emotionality domain of the NEO-PI-3 is assessed by a range of domains of the HEXACO-PI-R that have parity with elements of the facet level composition.

The developers of the HEXACO proposed that the honesty-humility domain had no direct correlate with the FFM (Lee & Ashton, 2004). The analyses of the current study indicated a

significant and large positive relationship between the honesty-humility domain of the HEXACO and the agreeableness domain of the FFM. This indicates that the agreeableness domain, as it is operationalised by the NEO-PI-3, is likely to capture and represent a large degree of the content of the honesty-humility domain and necessitates the requirement to ensure the validity of the factor structure of the HEXACO-PI-R particularly the independence of the six factor solution with an employment seeking population. This requirement will be addressed in chapter 9 of the thesis.

The results of this chapter support the predictive validity of broad personality domain level predictors for the global CWB construct. The domains of both personality models had significant relationships with the CWB construct and regression analysis indicated that the domains of the HEXACO and FFM were able to explain a significant proportion of variance in the CWB construct. This analysis indicated that the strongest predictors to account for the variance are likely to be conscientiousness and agreeableness for both the HEXACO and the FFM whilst the openness domain was also important in the FFM and honesty-humility in the HEXACO. Analysis of the domain level predictors at the dimension level of the CWB construct (CWBI and CWBO) indicated that an individual's level of conscientiousness was particularly important in CWB targeted at the organisation. The results for the FFM indicated that agreeableness was particularly important in CWB targeted at colleagues.

The regression analysis allowed for consideration of how all domains of the personality models (FFM and HEXACO) were able to account for the variance in the prediction of global CWB and its interpersonal and organisational dimension. These analyses indicated that the domains of the personality models are effective predictors of global CWB and its interpersonal and organisational dimensions. Counter to the prediction of this chapter, the

HEXACO does not appear to have an empirical advantage in the prediction of CWB. It is possible that the degree of content overlap with the domains of the HEXACO and the FFM and the ability of the agreeableness domain in the NEO-PI-3 to represent variance related to the honesty-humility domain meant that there was little difference between the two models in their ability to account for the variance of the CWB construct and its interpersonal and organisational dimensions.

Further, the results, again counter to the predictions, indicate that neither the NEO-PI-3 nor the HEXACO-PI-R were able to account for all the variance of the dispositional predictors of trait anger and self control in the prediction of global CWB and its interpersonal and organisational dimensions. The results indicate that these two dispositional predictors are important considerations, outside of the broader assessment of personality, in the prediction of CWB.

The practical or applied implications of the results of this chapter indicate that employers are likely to be assisted in the prediction of CWB by the use of a broad personality measure and the HEXACO and the FFM are likely to provide equally effective prediction of this criterion of interest. Employers are also likely to have a more predictive assessment of CWB if they also assessed trait anger and self control and depending on the tool that is to be used, FFM or HEXACO, they would be well served to consider the constellation of domains in the prediction of the global CWB construct and be mindful that the agreeableness domains are likely to have stronger relationships with the interpersonal aspect of CWB whilst the conscientiousness domain is likely to have strong relationships with the organisation element of this construct.

This chapter serves to advance the empirical research in the I/O area by being the first study to provide empirical evidence that both models of personality are likely to do equally well in predicting the CWB construct and its interpersonal and organisational dimensions. It also serves to advance the empirical literature by identifying the potential requirement for additional measures to assess trait anger and self control to provide increased predictive validity for the CWB criterion in a personnel selection context.

CHAPTER 8

EMPIRICAL EVALUATION OF THE PARSIMONY OF THE HEXACO IN THE ASSESSMENT OF OCB

8.1 Introduction

The previous chapters have detailed the recent expansion in the literature that focuses on predicting workplace behaviours that serve to inhibit or enhance an individual's functioning in the workplace (Motowidlo & Van Scotter, 1994; Ones & Viswesvaran, 1998; Rotundo & Sackett, 2002; Sackett, 2002; Dalal, 2005; Kristof-Brown, Zimmerman, & Johnson, 2005; Sackett, et al., 2006). This chapter will focus on the OCB component of employment suitability.

Motowidlo et al.'s (1997) theory of individual differences and Penner et al's (1997) causal model of OCB both propose that pro-social dispositional tendencies are antecedents to an individual's engagement in OCB. Consequently, it would be expected that personality assessment tools used in the employment selection domain, that are able to provide an assessment of an individual's pro-social dispositional tendencies, will provide an employer with a valid assessment of the dispositional predictors of OCB.

The theoretical understanding of the HEXACO, with its explanation of antagonistic versus altruistic tendencies, has conceptual overlap with both Motowidlo et al (1997) and Penner et al's (1997) theoretical explanation of OCB. In particular, these two OCB models propose that OCB is a function of pro-social dispositional tendencies, it is likely therefore, given the HEXACO's theoretical grounding in the explanation of the altruism versus antagonism dimension and the ability of this aspect of the model to assess helping behaviour, that the HEXACO provides an assessment of the pro-social dispositional tendencies that Motowidlo et al (1997) and Penner et al (1997) causal models propose as antecedents to OCB. There is however, no empirical research that has investigated the ability of the HEXACO, or its

altruism versus antagonism dimension, in predicting OCB or its interpersonal or organisational dimensions.

There is however, empirical support for the HEXACO in predicting other pro-social behaviours (Lee & Ashton, 2005). The 'Dark Triad' is a cluster of dispositional variables that have at their core a callous or manipulative interpersonal style (Jones & Paulhus, 2010) and the dark triad can be considered as the negative end of a continuum of pro-social interpersonal style or behaviour. Lee and Ashton (2005) have established that the honesty-humility domain of the HEXACO was better able account for variance in measures of the dark triad than the FFM was. Given that the HEXACO provided a superior assessment of the dark triad, it is a logical conclusion that this model of personality, likely through its assessment of tendencies towards pro-social style and behaviour, would provide a more parsimonious assessment of OCB and its dimensions than would be provided by the FFM.

There is a body of evidence that supports the predictive validity of personality for OCB. Section 3.5.1 detailed and critically analysed the empirical literature on the personality predictors for OCB and identified the gaps in the empirical literature. To summarise: the empirical literature has a weight of evidence that indicates that conscientiousness is an effective predictor of OCB and likely a stronger predictor for OCBO than OCBI. The predictive validity of each of the other domains of the FFM for OCB has also been established. Little research, however, has been devoted to determining the predictive validity of each of the FFM domains for the interpersonal and organisational dimensions of OCB.

8.2 Hypotheses

It is anticipated that the current study will replicate the results of the studies that have supported the predictive validity of the each of the domains of the FFM for OCB. In particular, it will be hypothesised that:

H8.1. Each of the FFM domains will have a significant relationship with global OCB, OCBI and OCBO. The relationship between the emotionality domain and global OCB, OCBI and OCBO will be negative. The relationships with the other domains and the outcome variables will be positive. Given the overlap in FFM domains and corresponding HEXACO domains it would also be expected that the corresponding HEXACO dimensions will have the same relationships with the OCB measures as those of the FFM.

H8.2: There will be a larger relationship between the FFM domains of emotionality, agreeableness and extraversion and OCBI than OCBO. Similar relationships will be found with the HEXACO domains.

H8.3: The FFM domain of conscientiousness will have larger relationships with OCBO than OCBI. Similar relationships will be found with the HEXACO dimensions.

Further, the antagonism verses altruism theoretical underpinning of the HEXACO and the potential ability of this dimension to accommodate the pro-social dispositional element that has been proposed in at least two causal models of OCB would indicate that the domains of the HEXACO would provide a more parsimonious assessment of OCB and its interpersonal and organisational elements than that provided by the domains of the FFM.

H8.4: The HEXACO will provide a more parsimonious assessment of OCB and its dimensions (OCBI and OCBO) than the FFM.

8.3 Method

Participants

The participants used for empirical analysis in this chapter were drawn from the same pool as those in chapter seven. Similar to section 7.4, participants in the dataset used for this chapter were individuals who consented to have their data used for research purposes, had a previous work history and had valid responses on the OCB outcome measure. The number of participants reaching these criteria was 1266. Age data were collected on 1131 participants and the average age of participants used for analysis in this chapter was 28.64 years ($SD = 9.11$). Gender data were collected on 1259 individuals and this sample comprised of 34.6% females, 64.8 % males and data was missing on 0.6% of the sample.

Measures and Procedure

Organisational Citizenship Behaviour

Lee and Allen's (2002) self-report OCB measure was used as the dependent variable in this study. This is a 16 item questionnaire that asks participants to indicate the degree to which they engaged in the behaviour identified at each item. Participants were asked to rate this on a seven point scale with 1 = 'never' 7 = 'always'. The scale contained 8 items to assess OCBO and 8 items to assess OCBI. Lee and Allen (2002) established reliabilities of $\alpha = .83$ for OCBI element of this measure and $\alpha = .88$ for OCBO measure. The current study obtained reliability coefficients for this measure that were consistent with those of Lee and

Allen (2002) with Cronbach's alpha for global OCB of $\alpha = .90$, OCBI: $\alpha = .83$, OCBO: $\alpha = .87$.

Five Factor Model

Participants completed the NEO-PI-3 (McCrae & Costa, 2010). The content and reliabilities for this measure were reported in section 7.4.

Six Factor Model

The six factor model of personality was measured using the HEXACO-PI-R (Ashton, 2011). As with the FFM, the content and reliabilities for this measure were reported in section 7.4.

Procedure

The procedure for this chapter is consistent with that outlined in section 7.4.

8.4 Results

The hypotheses of the present study were tested using correlation analysis and multivariate regression analysis. The independent variables included the domains of the NEO-PI-3 (emotionality, extraversion, openness, agreeableness and conscientiousness) and the HEXACO-PI-R domains (honesty-humility, emotionality, extraversion, agreeableness, conscientiousness and openness). The dependent variables were the individual's self-report global OCB, OCBI and OCBO.

8.4.1 Missing Data

The treatment of missing data in the current analysis was consistent with the process outlined in section 7.5.1.

8.4.2 Adjustments for Multiple Analyses

As noted in section 7.5.2 the same data set has been used for multiple analyses in this, the previous and the subsequent empirical chapters. In order to control for Type I error a more conservative alpha level of $p = .01$ was adopted to indicate significance.

8.4.3 Relationships between the FFM, the HEXACO and OCB

It was hypothesised that that each of the domains of the FFM and the corresponding domains of the HEXACO would have significant relationships with global OCB and its interpersonal and organisational dimensions (H8.1). To test these hypotheses Pearson's correlation coefficients were calculated for each of the domains of the FFM and the corresponding domains of the HEXACO, with each of the DVs: global OCB, OBCI and OCBO. These correlations are presented in Table 8.1. The correlation analyses were largely supportive of the hypotheses. The correlations indicate significant relationships in the expected direction for each of the FFM domains and the corresponding HEXACO domains with global OCB, OCBI and OCBO besides the emotionality domain of the HEXACO, which did not have a significant correlation with the OCBI outcome.

Table 8.1

NEO-PI-3 and HEXACO-PI-R Domain Scores Correlated with Global OCB and its Interpersonal and Organisational Dimensions

Domain	Measure	Global OCB	OCBI	OCBO
Emotionality	NEO ^a	-.36**	-.27**	-.36**
	HEX ^b	-.13**	-.06	-.17**
Extraversion	NEO ^a	.42**	.36**	.41**
	HEX ^b	.44**	.37**	.41**
Openness	NEO ^c	.19**	.22**	.13**
	HEX ^b	.21**	.20**	.19**
Agreeableness	NEO ^a	.27**	.31**	.20**
	HEX ^d	.32**	.32**	.27**
Conscientiousness	NEO ^c	.46**	.34**	.46**
	HEX ^e	.44**	.35**	.43**
Honesty-Humility	HEX ^e	.18**	.21**	.13**

^a n = 1227, ^b n = 1231, ^c n = 1228, ^d n = 1237, ^e n = 1231

** $p < .01$

It was further hypothesised that FFM domains of emotionality, agreeableness and extraversion and the corresponding domains of the HEXACO would have stronger relationships with the OCBI dimension of the OCB construct than they did with the OCBO dimension of the construct (H8.2). The correlation analysis indicated that both the emotionality domains of the FFM and the HEXACO had stronger correlations with the OCBO dimension which is counter to what was predicted. A Steiger's z calculation was used to determine if there was a significant difference in the strength of the relationships with the OCB dimensions for the emotionality domains of the FFM and the HEXACO. Analysis via Steiner z indicated that emotionality had a significantly stronger relationship with CWBO than CWBI for both the HEXACO-PI-R, $z = 4.81, p < .001$ and the NEO-PI-3, $z = 4.15, p < .001$.

The correlation analysis indicated that the extraversion domain of both the FFM and the HEXACO had a stronger relationship with OCBO than OCBI, again counter to what was predicted. The strengths of these relationships were analysed using Steiger's z statistic and using an alpha level of .01, the z statistic indicated that there was no significant difference in the strength of the relationship between extraversion and CWBI and CWBO for both the HEXACO-PI-R, $z = -1.91, p > .01$ and the NEO-PI-3, $z = 2.32, p > .01$.

The correlation analysis indicated that the agreeableness domains of the HEXACO and the FFM both had stronger relationships with the OCBI than they did with OCBO. The strength of these relationships were analysed using Steiger's z calculation. This analysis indicated that the relationship was not significantly stronger between agreeableness and OCBI than it was with OCBO for HEXACO-PI-R, $z = 2.29, p > .01$, which is counter to what was predicted. The analysis did support the strength of the relationship between agreeableness and CWBI over CWBO for the NEO-PI-3, $z = 4.97, p < .001$.

It was hypothesised that the conscientiousness domains of the FFM and the HEXACO would have stronger relationships with the OCBO than they did with the OCBI (H8.3). The correlation analysis indicated that there was a stronger relationship with OCBO than OCBI for both personality measures and analysis via Steiger's z calculation indicated that the relationship was significantly stronger between conscientiousness and OCBO than it was with OCBI for both the HEXACO-PI-R, $z = -3.83, p < .001$ and the NEO-PI-3, $z = -5.78, p < .001$. The results support the hypothesis that the conscientiousness domain has a stronger relationship with the CWBO dimension of CWB than it does with the CWBI dimension.

8.4.4 Parsimonious Assessment of Organisational Citizenship Behaviour: Comparison of the HEXACO and FFM

The final hypothesis in this chapter, (H8.4) proposed that the HEXACO would provide a more parsimonious assessment of OCB and its dimensions than was provided by the FFM. To investigate this hypothesis two separate multivariate regression analyses were conducted to evaluate the predictive validity of the NEO-PI-3 and the HEXACO-PI-R domains on the three OCB DVs (global OCB, OCBI and OCBO). The resulting regression equations and parameter estimates for each of the separate personality models were then analysed.

A GLM with global OCB, OCBI and OCBO serving as DVs and the six domains of the HEXACO-PI-R serving as IVs was constructed. The results indicated all domains of the HEXACO, besides the openness domain, were significant predictors of the composite of OCB DVs; Wilks' Lambda = .98 ($p < .001$). The GLM using the domains of the NEO-PI-3 as predictors also indicated that each of the domain were significant predictors of the OCB composite DV; Wilks' Lambda = .92 ($p < .001$). The following sections will detail the different regression analyses and parameter estimates for each of the personality models with each of the DVs.

Global OCB

Multiple linear regression indicated that the HEXACO-PI-R domains explained significant variance in global OCB, adjusted $R^2 = .29$, $F(1, 1224) = 82.92$, $p < .001$. A separate regression model indicated that the NEO-PI-3 explained a similar amount of variance, adjusted $R^2 = .30$, $F(1, 1219) = 105.67$, $p < .001$.

A summary of the regression statistics for these regression models are presented in Tables 8.2 and 8.3. These summary statistics indicate that the extraversion, agreeableness and conscientiousness domains of the HEXACO make a significant contribution to the prediction of global OCB. The summary statistics for the FFM model indicate that all domains of this personality model make a significant contribution to the prediction of global OCB besides the openness domain.

Table 8.2

Summary of Multiple Regression Analysis for HEXACO Domains with OCB-Global

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.42	.27	
HEX Honesty-Humility	.06	.04	-.04
HEX Emotionality	-.01	.04	.00
HEX Extraversion	-.42	.05	.26**
HEX Agreeableness	-.18	.04	.12**
HEX Conscientiousness	.44	.04	.27**
HEX Openness	.07	.03	.05

**p<.001.

Table 8.3

Summary of Multiple Regression Analysis for NEO Domains with OCB-Global

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.47	.25	
NEO Emotionality	.00	.00	-.09*
NEO Extraversion	.01	.00	.25**
NEO Openness	.00	.00	.06
NEO Agreeableness	.05	.00	.12**
NEO Conscientiousness	.01	.00	.27**

*p<.01, **p<.001.

OCBI

Multiple linear regression indicated that the HEXACO explained significant variance in OCBI, adjusted $R^2 = .21$, $F(1, 1224) = 56.73$, $p < .001$. A separate multiple linear regression was conducted with the domains of the FFM as the predictors; the results indicated that the domains of the FFM explained a significant proportion of the variance in the OCBI DV, adjusted $R^2 = .23$, $F(1, 1219) = 73.00$, $p < .001$.

A summary of the regression statistics for these regression models are presented in Tables 8.4 and 8.5. These summary statistics indicate that the extraversion, agreeableness and conscientiousness domains of the HEXACO made a significant contribution to the prediction of OCBI. The regression summary statistics for the FFM model indicate that the extraversion, agreeableness, openness and conscientiousness domains of the FFM made significant contributions to the prediction of OCBI.

Table 8.4

Summary of Multiple Regression Analysis for HEXACO Domains with OCB-Interpersonal

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.23	.30	
HEX Honesty-Humility	.13	.05	.07
HEX Emotionality	.01	.05	.05
HEX Extraversion	.37	.05	.22**
HEX Agreeableness	.25	.05	.15**
HEX Conscientiousness	.31	.05	.18**
HEX Openness	.09	.04	.06

** $p < .001$.

Table 8.5

Summary of Multiple Regression Analysis for NEO Domains with OCB-Interpersonal

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.29	.27	
NEO Emotionality	-.00	.00	-.05
NEO Extraversion	.01	.00	.20**
NEO Openness	.00	.00	.11**
NEO Agreeableness	.01	.00	.20**
NEO Conscientiousness	.01	.00	.17**

** $p < .001$.

OCBO

Multiple linear regression indicated that the HEXACO explained significant variance in OCBO, adjusted $R^2 = .26$, $F(1, 1224) = 71.10$, $p < .001$. A separate multiple linear regression model indicated that the FFM explained the similar proportion of the variance, adjusted $R^2 = .28$, $F(1, 1219) = 93.56$, $p < .001$.

A summary of the regression data for OCBO is presented in Tables 8.6 and 8.7. The extraversion, agreeableness and conscientiousness domains of the HEXACO and the emotionality, extraversion and conscientiousness domains of the FFM made significant contributions to each of the separate regression equations for OCBO.

Table 8.6

Summary of Multiple Regression Analysis for HEXACO Domains with OCB-Organisational

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.56	.32	
HEX Honesty-Humility	.00	.05	.00
HEX Emotionality	-.09	.05	-.05
HEX Extraversion	.46	.05	.25**
HEX Agreeableness	.15	.05	.08*
HEX Conscientiousness	.53	.05	.28**
HEX Openness	.06	.04	.04

* $p < .01$, ** $p < .001$.

Table 8.7

Summary of Multiple Regression Analysis for NEO Domains with OCB-Organisational

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.59	.29	
NEO Emotionality	.00	.00	-.10*
NEO Extraversion	.01	.00	.25**
NEO Openness	.00	.00	.001
NEO Agreeableness	.00	.00	.06
NEO Conscientiousness	.01	.00	.28**

* $p < .01$, ** $p < .001$.8.4.5 Summary of Results

The results from this chapter indicate that there were significant relationships between all domains of the HEXACO and the FFM in the predicted direction of global OCB, OCBI and OCBO (besides the emotionality domain of the HEXACO and OCBI). The HEXACO-PI-R is able to account for significant variance in global OCB, OCBI and OCBO but the NEO-PI-3 was also able to account significant variance in global OCB, OCBI and OCBO and there was

little difference between the two personality models in the amount of variance explained in global OCB, OCBI and OCBO.

The summary statistics indicate that the strengths of the relationships of the personality models with the OCB construct are with the extraversion, agreeableness and conscientiousness domains of the HEXACO and whilst the domains are also relevant with the NEO-PI-3 measure, the emotionality and openness domains are also weaker predictors of the OCB DVs (see Table 8.8).

Table 8.8

Standardised Beta Weights of Significant Predictors in Regression Equations for Global OCB, OCBI and OCBO

	HEXACO-PI-R						NEO-PI-3				
	HH	Emot	E	A	C	O	Emot	E	O	A	C
GOCB			.26	.12	.27		-.09	.25		.12	.27
OCBI	.07		.22	.15	.18			.20	.11	.20	.17
OCBO			.25	.08	.28		-.10	.25			.28

8.5 Discussion

The aim of this chapter was to test the predictive validity of the domains of the five and six factor models of personality for the global OCB construct and its interpersonal and organisational dimensions. Specifically, the chapter proposed that each domain of the FFM would have a significant relationship with the OCB construct and some would have stronger relationships with one or other of the interpersonal and organisational dimensions of OCB. The chapter proposed that by virtue of the domain overlap that the domains of the HEXACO would have similar relationships with OCB to those of the domains of the FFM. The chapter further proposed that the HEXACO had the potential to provide employers with a more parsimonious assessment of an individual's dispositional predictors for OCB given the

theoretical reasoning of this model and its proposed capacity to provide an assessment of the pro-social tendencies which is a core element of at least two causal models of OCB (Motowidlo, et al., 1997; Penner et al., 1997).

The results of this chapter provided empirical evidence supporting relationships between most domains of the FFM and the HEXACO and global OCB and its interpersonal and organisational dimensions. The HEXACO domain of emotionality did not, however, demonstrated a significant relationship with the CWBI dimension. The relationships between the personality domains and OCB indicate that dispositional predictors are an important consideration in the prediction of OCB and its interpersonal and organisational dimensions. Correlation and regression analyses demonstrated that the strength of the relationships between the personality domains and OCB is consistently with the extraversion, agreeableness and conscientiousness measures of both the five and six factor model personality assessments. This is consistent with Motowidlo et al., (1997) who proposed that the dispositional predictors of OCB would be personality dispositions that aligned with the interpersonal and social aspects required for OCB. The results of the current study demonstrated that the conscientious domain is the most influential for OCBO dimension. This is consistent with Motowidlo et al's. (1997) theory which proposes that conscientiousness is influential through its relationship with an individual's knowledge of and competencies in OCB.

Whilst this chapter proposed that the domains of the HEXACO model of personality were likely to provide a more parsimonious assessment of the dispositional predictors of CWB than the FFM, the results of this chapter did not support this prediction: the FFM and the HEXACO both accounted for similar variance in the DVs. Whilst it was argued that the pro-

social elements of the HEXACO were likely to provide the advantage for this model, the lack of evidence supporting the prediction may be due to the pro-social content of the HEXACO being captured equally well by the other domains of these broad personality models.

There are several practical implications of these results. Practitioners using broad personality models in the personnel selection context can be confident that the FFM and the HEXACO both provide a method to assess relevant and valid dispositional predictors for global OCB and its interpersonal and organisational dimensions. The applied psychologist can also be confident that the low levels of conscientiousness are likely to pose a particular risk to the organisational dimension of the construct whilst low agreeableness is a particular risk for the interpersonal dimension and low levels of extraversion are a likely risk for both dimensions of the construct.

The contribution that this chapter makes to advancing the empirical literature is the assessment of the domains of the HEXACO against the domains of the FFM in the prediction of global OCB and its interpersonal and organisational dimensions. This research establishes the predictive validity of the domains of the HEXACO for OCB which allows practitioners a valid and reliable alternative to the FFM in the assessment of OCB in the personnel selection realm.

CHAPTER 9

PERSONAILITY INSTRUMENTS IN PERSONNEL SELECTION: EMPIRICAL CONSIDERATION OF THE IMPACT OF CONTEXT AND BANDWIDTH FIDELITY CONSIDERATIONS

9.1 Introduction

This chapter analyses the considerations that are relevant to the use of personality measures in an employment selection process. In particular, it considers the impact of the employment selection *context* on the maintenance of the factor structure of the personality instrument, the normative results on tests and it assesses the influence of positive impression management and the potential for this to impact on the criterion related validity of dispositional predictors for CWB and OCB.

This chapter also assessed the bandwidth fidelity debate for the use of personality instruments in the employment selection context and proposes that a composite of unifacted aspects of personality has the potential to provide psychologists with higher predictive validity in the employment selection context than is provided by more broad generic measures of personality.

9.1.1 Employment Context Considerations for Personality Tests

Chapters two and four outlined the five and six factor models of personality. These personality models have been operationalised through the use of personality tests that profile an individual's responses against the domains of the measure. The operationalisation of the FFM used in empirical analysis in chapters seven and eight was the NEO-PI-3 (McCrae & Costa, 2010) and for the six factor models, the HEXACO-PI-R (Ashton, 2001). Both measures were developed and standardised on voluntary populations. Studies using these measures on a voluntary basis saw replication of the personality structure that each instrument

was developed to assess: the FFM in the case of the NEO-PI-3 and the six factor model in the case of the HEXACO-PI-R.

H9.1: The five factor structure of the NEO-PI-3 will be maintained with a population undertaking the instrument for employment suitability purposes.

H9.2: The six dimensional structure of the HEXACO-PI-R will be maintained on a population undertaking the instrument for employment suitability purposes.

9.1.2 Issues Associated With the Applicability of Personality Test Norms to Employment Selection

Psychologists typically use personality instruments in the employment selection context as they provide informative data on an individual's dispositional tendencies relative to others' in the sample on which the tool was developed (Tett, Fitzke, Wadlington, Davies, Anderson & Foster, 2009). It is particularly important in these cases that practitioners using personality instruments employ the best practice process of using 'local' norms to reference individuals being assessed for employment suitability (Crocker & Alinga, 1986; Kline, 1993) or alternatively assess the suitability of the reference population norms for their sample. In an employment selection context, there is, therefore, the requirement for the practitioner to consider the difference between job seekers and the voluntary population on which the norms of the personality instruments have typically been developed. An understanding of these differences allows for consideration of the impact of employment seeking contextual demands on the normative responses of personality instruments that have typically been developed on a voluntary population.

The empirical evidence on the impact of the employment selection process on the measures of the FFM indicated that individuals applying for positions scored significantly higher on scales of the FFM domains of extraversion, emotional stability, conscientiousness and openness with the largest degree of inflation on scales measuring emotional stability and conscientiousness (Birkland et al., 2006).

H9.3: Individuals undertaking the NEO-PI-3 for employment suitability purposes will have lower scores on scales measuring emotionality and higher scores on scales measuring extraversion, openness and conscientiousness than non-applicants.

Given the domain overlap between the five and six factor models of personality it would be expected that the findings of changes in the FFM dimensions for employment seeking populations (Birkland, et al., 2006) would be applicable to the corresponding domains of the six factor model. It would also be expected that the current study would replicate the results of the one study (Lee, et al., 2008) that has reported changes in the normative references for the domains using the HEXACO with an employment seeking population and demonstrate that an employment selection sample will have higher scores on the honesty-humility domain than a voluntary sample.

H9.4: Individuals undertaking the HEXACO-PI-R for employment suitability purposes will have lower scores than non-applicants on the emotionality domain and higher scores on domains measuring honesty-humility, extraversion, openness and conscientiousness than a population undertaking the measures on a voluntary basis.

9.1.3 Consideration of the Impact of Positive Impression Management.

The consideration of the impact of positive impression management in an employment selection context was detailed and analysed in sections 5.6 to 5.7. Meta-analytical research supports the position that impression management is a substantive variable rather than simply a source of error (Ones et al., 1996; Barrick & Mount, 1996) and there is evidence that this variable is intrinsically linked to FFM domains, particularly the domains of emotionality and conscientiousness.

Given the significant overlap between the domains of emotionality and conscientiousness and an assessment of positive impression management (Birkland, et al., 2006; Peterson, et al., 2011), it would also be expected that a measure of positive impression management would not contribute significantly to the prediction of CWB and OCB beyond its influence through these domains.

H9.5: There will be a significant negative correlation between a measure of positive impression management and the personality domain of emotionality and significant positive relationship with the conscientiousness domain.

H9.6: The influence of positive impression management will not add substantial variance to the criterion of CWB and OCB over and above the established personality predictors of these criterion variables.

9.1.4. Personality Bandwidth Fidelity Considerations

Chapters seven and eight clearly demonstrated support for the predictive validity of personality measures for work-related outcomes. The debate continues, however, on whether applied psychologists should use dispositional measures at the broad or narrow level of assessment (Sitster, et al. 2013).

The argument has been made throughout this thesis that employers require an efficient and effective, or a parsimonious assessment, of the personality predictors of employment suitability domains of CWB and OCB and there is evidence that the incremental validity of facet level assessment provides greater predictive validity for employment related outcomes (Hastings & O'Neil, 2009). It would be expected that a composite of predictive personality facets would therefore have greater predictive validity than domain level assessment.

H9.7: A composite of facet level assessments will provide stronger predictive validity than the domain level assessment of both the FFM and the HEXACO in the prediction of CWB and OCB.

9.2 Method

Participants

The same pool of participants was used in this chapter as were employed in chapters seven and eight. Individuals who consented to have their data used for research purpose were

included in this dataset. The current sample included responses from 1536⁸ participants. Age data were collected on 1397 individuals. The average age was 28.08 years ($SD = 8.73$). Gender was collected on 1531 participants with 34.8 % of the sample being female, 64.4% male and gender data missing on 0.8% of the sample.

Measures

Five Factor Model

Participants completed the NEO-PI-3 (McCrae & Costa, 2010). The content and reliabilities for this measure were reported in section 7.4.

Six Factor Model

The six factor model of personality was measured using the HEXACO-PI-R (Ashton, 2011). The content and reliabilities of this measure were also reported in section 7.4.

Counterproductive Work Behaviour

Participants completed Bennett and Robinson's (2000) CWB 19-item self-report measure. The content and reliabilities for this measure were outlined in section 7.4.

Organisational Citizenship Behaviour

Lee and Allen's (2002) self-report OCB measure was used as the dependent variable in this study. The content and reliabilities for this measure were outlined in section 8.4.

⁸ This number is larger than the participant numbers for chapters seven and eight. Data in chapters seven and eight was only analysed for participants who reported a previous work history and hence were able to respond to the CWB and/or OCB measures. Several analyses in this chapter did not rely on the CWB and OCB self-report data which expanded the dataset numbers for these analyses.

Positive Impression Management

As noted in section 5.3, the PPM was developed from existing items within the NEO-PI-R instrument (Schinka et al., 1997). This scale consists of 10 items and was designed to assess individuals who claimed “uncommon virtues and/or denied common faults” (Schinka, et al 1997, p. 129). Young and Schinka (2001) demonstrated that the PPM had convergent and discriminate validity with the scales the Personality Assessment Inventory (Morey, 1991) designed to measure positive and negative impression management. Blanch, Aluja, Gallart, and Dolcet, (2009) reviewed 15 studies that had reported use of the PPM and these authors noted that the reported reliability coefficients for the scale ranged from $\alpha = .46$ to $\alpha = .70$. The reliability coefficient for the PPM in the current study was $\alpha = .49$. Three of the items on this scale had low corrected item-total correlations with the scale. The removal of these three item saw the reliability coefficient increase to $\alpha = .58$. This reliability coefficient is low compared to usually acceptable standards but it is consistent with the reliability coefficients that were reported by Schinka et al. (1997) in the development of the instrument ($\alpha = .56$ and $.60$) and by Blanch et al (2009) in their review of studies that have used this instrument. The modified seven item measure of the PPM scale was used in the current study in order to optimise the reliability coefficient.

Procedure

The procedure used in the current study is outlined in section 7.4.

9.3 Results

The factor structure of the NEO-PI-3 and the HEXACO-PI-R were analysed using a principal components analysis with a varimax rotation (H9.1 and H9.2). T-tests and Cohen’s d effect

sizes were used to compare the means for the domains of the NEO-PI-3 with the HEXACO-PI-R when the measures were used in an employment selection context (H9.3 and H9.4). The relationships between the two FFM domains of emotionality and conscientiousness and impression management were assessed using a Pearson's correlational analysis and a Cohen's *d* assessment (H9.5). A hierarchical linear regression was used to assess if impression management contributed to the prediction of CWB and OCB beyond the variance this construct shared with the other domains of the broad personality measures (H9.6).

9.3.1. Missing Data

The treatment of missing data in the current analysis was consistent with the process outlined in section 7.5.1.

9.3.2 Adjustments for Multiple Analyses

The same data set has been used for multiple analyses in this and two previous empirical chapters. In order to control for Type I error a more conservative alpha level of .01 was adopted to indicate significance.

9.3.3 Dimensionality of FFM and HEXACO in the Employment Selection Context

The first hypothesis of this chapter proposed that the five dimensional structure of the NEO-PI-3 would be maintained with a population completing the instrument for employment suitability purposes. The use of a principal components analysis with a varimax rotation is consistent with the analysis used by McCrae and Costa (2010) in their validation of the dimensional structure of the instrument and the same process was used in this study. The rotated factor loadings for the NEO-PI-3 domains with the current employment seeking population are presented in Table 9.1.

Table 9.1

Factor Structure of the NEO-P-3

Facets	Factor				
	ES	E	O	A	C
Emotionality					
Anxiety	.85	-.04	.02	.05	-.09
Ang-Host	.64	-.06	-.17	-.46	-.18
Depression	.81	-.16	.02	-.04	-.24
Self-con'ness	.73	-.32	-.01	.07	-.27
Impulsiveness	.57	.19	-.02	-.25	-.46
Vulnerability	.73	-.11	-.14	.04	-.41
Extraversion					
Warmth	-.16	.78	.17	.25	.17
Gregariousness	-.16	.75	.02	.02	.06
Assertiveness	-.34	.45	.06	-.36	.40
Activity	-.12	.53	-.01	-.24	.48
Excit Seeking	-.06	.49	.22	-.32	-.04
Positive Emot	-.03	.74	.18	.15	.07
Openness					
Fantasy	.26	.12	.62	-.11	-.28
Aesthetics	.23	.23	.65	.09	.09
Feelings	.40	.53	.41	.08	.03
Actions	-.28	.25	.55	.01	.07
Ideas	-.16	-.02	.78	-.05	.21
Values	-.16	.07	.66	.09	-.04
Agreeableness					
Trust	-.32	.38	-.06	.54	-.11
Straightf'ness	.00	.02	-.12	.74	.08
Altruism	-.11	.51	.18	.55	.29
Compliance	-.13	.02	.07	.74	.12
Modesty	.06	-.13	-.00	.59	.01
Tender-Mind'ess	.12	.31	.26	.57	.16
Conscientiousness					
Competence	-.45	.12	.14	.08	.71
Order	.02	.10	-.16	.06	.72
Dutifulness	-.22	.13	.07	.29	.73
Achieve-striving	-.16	.27	.15	-.12	.75
Self Discipline	-.36	.15	.02	.11	.77
Deliberation	-.21	-.22	.04	.25	.69

Factor loadings above the .4 level are represented in blue. The factor structure obtained with the principal components analysis is largely consistent with the factor structure obtained with McCrae and Costa's (2010) community sample; a sample of voluntary participants. The analysis indicates good loading of the facets on the relevant domains. The highest loadings for the facets are on their theoretically proposed domains for all facets besides the openness facet of *feelings*, which loaded at .41 on the relevant domain of openness but also loaded at .40 with emotionality and .53 with extraversion. There were six other facets that had loadings above the .4 level on two domains. In each of these cases the highest loading was on the domain from which the facet originated. These included the emotionality facets of *impulsivity* and *vulnerability* which also loaded at a .46 and .41 level on the conscientiousness domain. The extraversion facets of *assertiveness* and *activity* also loaded onto the conscientiousness domain at the .40 and .48 level. The agreeableness facets of *altruism* loaded onto the extraversion domain at a .51 level and the conscientiousness facet of *competence* loaded onto the emotionality domain at a -.45 level.

The second hypothesis in this chapter proposed that the six dimensional structure of the HEXACO-PI-R would be maintained on a population completing the instrument for employment suitability purposes. To investigate this hypothesis a principal components analysis with a varimax rotation was conducted with the HEXACO-PI-R data in the current sample. The factor loadings are presented in Table 9.2 and all factor loadings above a .4 level presented in blue.

Table 9.2

Factor Structure of the HEXACO-PI-R

Facets	Factor					
	HH	Emot	E	A	C	O
Honesty-Humility						
Sincerity	.71	.06	.01	.14	.16	.01
Fairness	.60	.20	.15	.20	.34	-.05
Greed Avoid'ce	.77	-.19	-.07	.05	-.05	.11
Modesty	.76	.10	-.00	.20	-.04	-.07
Emotionality						
Fearfulness	.03	.55	-.42	-.02	-.07	-.28
Anxiety	-.11	.59	-.43	-.28	-.01	.20
Dependence	-.04	.77	.08	-.10	-.17	-.08
Sentimentality	.14	.78	.12	.07	.03	.16
Extraversion						
Soc Self-esteem	.11	-.02	.69	.23	.33	.02
Social Boldness	-.00	-.15	.78	-.01	.17	.19
Sociability	-.15	.32	.71	.13	-.04	.16
Liveliness	.08	.04	.76	.26	.22	.06
Agreeableness						
Forgiveness	.09	-.04	.18	.73	.00	.12
Gentleness	.18	.14	.00	.79	.18	.03
Flexibility	.21	-.01	.15	.68	.09	.01
Patience	.09	-.17	.12	.75	.17	.13
Conscientiousness						
Organization	.01	.00	.21	.12	.73	-.05
Diligence	.09	-.16	.37	.04	.67	.14
Perfectionism	.01	.09	-.03	.05	.75	.28
Prudence	.23	-.17	.15	.25	.70	-.01
Openness						
Aesth Appre'n	.05	.26	.06	.10	.09	.75
Inquisitiveness	.00	-.05	.19	.09	.27	.66
Creativity	-.03	-.01	.14	.16	.06	.76
Unconv'ality	.02	-.07	-.00	-.06	-.09	.80
Altruism	.43	.52	.19	.38	.18	.11

The rotated matrix presented in Table 9.2 indicates good loading of the facets on the relevant domains. The highest loadings for all the facets are on their theoretically proposed domains.

There are only two facets that have loadings above a .4 level on domains other than their theoretically proposed scale; *fearfulness* and *anxiety* (emotionality facets) both load

negatively on the extraversion domain. The data can be considered as supportive of the replication of the six factor model of personality using the HEXACO-PI-R with an employment seeking population.

9.3.4. Applicability of Volunteer Norms for an Employment Seeking Population

The third hypothesis of this chapter, H9.3, proposed that participants undertaking the NEO-PI-3 for employment suitability purposes will have lower scores on the emotionality domains (or ‘emotional stability’ as the NEO-PI-3 labels it) but higher scores on scales measuring extraversion, openness and conscientiousness than a non-applicant sample. Further, H9.3 extended these predictions to the corresponding domains of the HEXACO and also proposed that individuals undertaking the HEXACO-PI-R for employment suitability purposes will have higher scores for the honesty-humility domain than a non-applicant sample.

To analyse these hypotheses the means of domains scores for the personality instruments in the current sample were compared with the means of domain scores from the samples on which the both the NEO-PI-3 and the HEXACO-PI (Lee & Ashton, 2004)⁹ were developed. A summary of the analyses for the NEO-PI-3 is presented in Table 9.3 and the HEXACO-PI-R in Table 9.4. The results are supportive of the hypotheses; independent sample *t*-tests indicated that the employment seeking population had lower scores than the voluntary population on the emotionality domain and higher scores on the extraversion, openness and conscientiousness domains for both the NEO-PI-3 and the HEXACO-PI-R. There was also a significant difference between the means for the honesty-humility domain, with the employment seeking population reporting higher levels of honesty-humility. Whilst it was not a specific prediction in the current study the results also indicated that the employment

⁹ Data on means and standard deviations for the HEXACO-PI-R have not been published. Due to the consistency between the two tools (Ashton, 2011) published data from the HEXACO-PI was used for this analysis.

seeking population had higher levels of agreeableness on both the NEO-PI-3 and the HEXACO-PI-R.

Using Cohen's (1992) guidelines for effect sizes of the differences between non-seeking and employment seeking samples' means for the NEO-PI-3, the domains of emotionality, openness and conscientiousness were large, whilst the domain of extraversion was medium and the domain of agreeableness was small. On the HEXACO-PI-R the difference between the employment seeking and the voluntary populations on the emotionality and extraversion domains were large, the difference between agreeableness and conscientiousness were moderate and the difference between applicants and non-applicants on the honesty-humility and openness scales were small.

Table 9.3

Comparison of Domain Means for NEO-PI-3 for Current Sample and Volunteer Sample

Domain	<i>Current Sample</i>		Costa & McCrae (2010) ^d		<i>T</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Emotionality	61.04 ^a	20.89	82.7	22.3	21.46**	-1.00
Extraversion	120.10 ^a	18.13	110.4	19.3	11.08**	.51
Openness	123.91 ^b	17.63	107.7	18.6	19.10**	.89
Agreeableness	124.73 ^a	16.45	119.1	18.2	7.00**	.32
Conscientiousness	137.39 ^b	18.07	121.1	19.9	18.46**	.86

^an = 1496, ^bn = 1497, ^cn = 635, ^dCosta and McCrae's (2010) 'community' sample

***p* < .001

Table 9.4

Comparison of Domain Means for HEXACO-PI-R for Current Sample and Volunteer Sample

Domain	Current Sample		Lee & Ashton (2006) ^c		<i>T</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Honesty-Humility	3.84	.41	3.89	.46	2.59*	.11
Emotionality	2.82	.41	3.17	.46	18.19**	.80
Extraversion	3.77	.44	3.22	.52	26.10**	1.14
Agreeableness	3.43	.43	3.14	.47	14.51**	.64
Conscientiousness	3.81	.42	3.56	.45	12.90**	.57
Openness	3.54	.47	3.43	.52	5.01**	.22

^a*n* = 1499, ^b*n* = 734, ^c Lee and Ashton (2006) community adult sample.

p* < .01 *p* < .001

9.3.5 Impression Management Considerations

The fifth hypothesis of this chapter, H9.5, proposed that there would be a significant negative correlation between the positive impression management measure and the personality domains of emotionality and a positive correlation with the conscientiousness domain. To assess this hypothesis a correlation analysis was conducted between PPM scores and the domains of emotionality and conscientiousness for both the NEO-PI-3 and the HEXACO-PI-R. These correlations are presented in Table 9.5. The results indicate significant relationships in the expected directions between the emotionality domains and conscientiousness domains of the HEXACO-PI-R and the NEO-PI3 with the PPM scale. Again a Cohen's *d* analysis was conducted given the large sample size. The relationship between the emotionality domain of the HEXACO-PI-R and the PPM measure was of medium strength, whilst the relationship between the PPM measure and the HEXACO-PI-R conscientiousness domain was large. The NEO-PI-3 emotionality and conscientiousness domains both had large relationships with the PPM measure.

Table 9.5

Correlations between Personality Domains of Emotionality and Conscientiousness with PPM

Domain	<i>r</i> with PPM	Cohen's <i>d</i>
HEX Emot ^a	-.25**	-.52
NEO Emot ^b	-.62**	-1.58
HEX C ^a	.46**	1.04
NEO C ^b	.59**	1.46

^a *n* = 1280 ^b *n* = 1309 ***p* < .001

The sixth hypothesis of this chapter, H9.6, proposed that positive impression management would not add substantial variance to the prediction of CWB and OCB above the variance that was already explained by relevant personality dimensions. This hypothesis was tested using hierarchical linear regression: separate hierarchical regression models were constructed using the domains of the HEXACO-PI-R and the NEO-PI-3 as predictors. The domains of each of these measures were entered in the first step of the regression model and the PPM scale was entered in the second step of these models. In order to provide a succinct summary of the results relevant to this hypothesis only select relevant analyses are presented in the results section of this chapter and the analyses for the additional DVs are detailed in Appendix C.

Global CWB

Two separate hierarchical linear regression models were constructed for the global CWB DV; one with domains from the HEXACO-PI-R and the other with the domains from the NEO-PI-3. The regression model using the HEXACO-PI-R domains indicated that this personality model was a significant predictor of global CWB, adjusted $R^2 = .25$, $F(1, 1021) = 56.86$, $p < .001$. The addition of the PPM scale to this model saw no significant increase in the amount of variance that was explained in the global CWB DV: the change in the adjusted $R^2 = .25$, $F(1, 1020) = 2.00$, $p > .01$. These results indicate that the PPM does not make an independent

contribution to the prediction of global CWB in a model that uses the HEXACO-PI-R domains as predictors. A consistent result was found with this DV and the domains of the NEO-PI-3. The summary statistics for this analysis are presented in Table 9.6.

The initial regression equation for the domains of the NEO-PI-3 as predictors of global CWB, adjusted $R^2 = .24$, $F(1, 1046) = 66.21$, $p < .001$ was not significantly advanced with the introduction of the PPM measure, the change in $R^2 = .24$, $F(1, 1045) = .63$, $p > .01$. The summary statistics for this analysis are presented in Table 9.7. The dimensions of the CWB DV; CWBI and CWBO had consistent findings for both the HEXACO-PI-R and the NEO-PI-3 domains. To provide a concise representation of the data in this chapter, these additional analyses have been included in Appendix C.

Table 9.6

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with CWB-Global

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.76	.16		3.76	.17	
HEX Honesty-Humility	-.13	.03	-.14**	-.13	.03	-.14**
HEX Emotionality	-.04	.03	-.04	-.04	.02	-.05*
HEX Extraversion	-.01	.03	-.01	.00	.03	.022
HEX Agreeableness	-.16	.03	-.19**	-.16	.03	-.19**
HEX Conscientiousness	-.27	.03	0.30**	-.27	.03	-.30**
HEX Openness	-.05	.02	-.07	-.05	.02	-.07
PPM				.00	.00	.03

* $p < .01$, ** $p < .001$.

Table 9.7

Summary of Multiple Regression Analysis for NEO Domains and PPM with CWB-Global

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.09	.15		3.06	.16	
NEO Emotionality	.00	.00	.04	.00	.00	-.05
NEO Extraversion	.00	.00	.05	.00	.00	.04
NEO Openness	.00	.00	-.12**	.00	.00	.12**
NEO Agreeableness	-.01	.00	-.23**	-.01	.00	-.23**
NEO Conscientiousness	-.01	.00	0.33**	-.01	.00	-.34**
PPM				.00	.00	.00

** $p < .001$.

Global OCB

Hierarchical linear regression was conducted in order to determine if the PPM scale added substantial variance to the prediction of OCB beyond the variance that was already explained by personality dimensions. Using the HEXACO-PI-R domains as predictors, analysis indicated that these domains were able to account for significant variance in the global OCB construct, adjusted $R^2 = .31$, $F(1, 1015) = 77.76$, $p < .001$. The addition of the PPM scale to the regression model saw a small but significant increase in the variance explained in this construct. The change in the adjusted $R^2 = .32$, $F(1, 1014) = 13.56$, $p = .001$. Summary statistics are presented in Table 9.8.

Table 9.8

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with OCB-Global

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	1.25	.29		1.27	.29	
HEX Honesty-Humility	.08	.05	.04	.06	.05	.03
HEX Emotionality	-.03	.04	-.02	-.01	.04	-.01
HEX Extraversion	.42	.05	.26**	.32	.06	.20**
HEX Agreeableness	.22	.05	.14**	.21	.05	.13**
HEX Conscientiousness	.46	.05	0.28**	.41	.05	.25**
HEX Openness	.07	.04	.04	.07	.04	.05
PPM				.02	.01	.13**

** $p < .001$.

Given this significant finding the results for the OCB construct are also reported at the dimensional level (OCBI and OCBO) with the HEXACO-PI-R domains as predictors.

Analysis indicated that the HEXACO domains were significant in predicting OCBI, adjusted $R^2 = .24$, $F(1, 1015) = 53.32$, $p < .001$ but the addition of the PPM scale did not increase in the variance explained for this DV, the change in the adjusted $R^2 = .23$, $F(1, 1014) = .0$, $p > .05$. Summary statistics are presented in Table 9.9.

Table 9.9

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with OCB-Interpersonal

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	1.13	.32		1.14	.32	
HEX Honesty-Humility	.12	.05	.07	.12	.05	.07
HEX Emotionality	.10	.05	.03	.06	.05	.03
HEX Extraversion	.36	.05	.22	.34	.06	.20**
HEX Agreeableness	.30	.06	.18**	.29	.06	.17**
HEX Conscientiousness	.32	.06	0.19**	.31	.06	.18**
HEX Openness	.10	.05	.07	.10	.05	.07
PPM				.01	.01	.03

** $p < .001$.

In consideration of the OCBO dimension; the HEXACO domains were significant in predicting OCBO, adjusted $R^2 = .28$, $F(1, 1015) = 66.63$, $p < .001$ and the addition of the PPM scale saw a small but significant increase in the variance explained, the change in the adjusted $R^2 = .30$, $F(1, 1014) = 25.234$, $p < .001$. Summary statistics are presented in Table 9.10.

Table 9.10

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with OCB-Organisational

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	1.31	.35		1.34	.35	
HEX Honesty-Humility	.03	.06	-.02	.00	.06	.00
HEX Emotionality	-.11	.05	-.06	-.09	.05	-.05
HEX Extraversion	.46	.06	.25**	.32	.07	.17**
HEX Agreeableness	.19	.06	.10	.17	.06	.09*
HEX Conscientiousness	.55	.06	0.29**	.47	.06	.24**
HEX Openness	.05	.05	-.03	.06	.05	.03
PPM				.04	.01	.17**

* $p < .01$, ** $p < .001$.

These results indicate that the PPM scale made a contribution, independent of its contribution through the HEXACO-PI-R domains, to the prediction of OCBO and consequently to the prediction of global OCB. This suggests that the HEXACO is not able to account for all the variance in impression management in the prediction of OCBO and consequently global OCB.

When considering the influence of PPM and the NEO-PI-3 in the prediction of global OCB, analysis indicates that the FFM domains were significant predictors of global OCB, adjusted $R^2 = .31$, $F(1, 1040) = 94.60$, $p < .001$ and the addition of the PPM scale to this model did not increase in the variance that was explained, adjusted $R^2 = .31$, $F(1, 1039) = 1.83$, $p > .01$.

These results indicate that the PPM does not make an independent contribution to the prediction of global OCB in a model that uses domains predictors from the NEO-PI-3. The summary statistics of this regression model are presented in Table 9.11. The dimensions of

the OCB DV; OCBI and OCBO had consistent findings and these are presented in Appendix C.

Table 9.11

Summary of Multiple Regression Analysis for NEO Domains and PPM with OCB-Global

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.46	.27		2.30	.28	
NEO Emotionality	.00	.00	-.10*	.00	.00	-.08
NEO Extraversion	.01	.00	.23	.01	.00	.21**
NEO Openness	.00	.00	.06	.00	.00	.07
NEO Agreeableness	.01	.00	.13**	.01	.00	.12**
NEO Conscientiousness	.01	.00	0.28**	.01	.00	.26**
PPM				.01	.01	.07

* $p < .01$, ** $p < .001$.

9.3.6 Bandwidth Fidelity Considerations in Employment Selection

The final hypothesis of this chapter, H9.7, proposed that a composite of facet level assessments will provide stronger predictive validity than the domain level assessment of both the FFM and the HEXACO in the prediction of CWB and OCB. This hypothesis was assessed by constructing separate multiple linear regression analyses to determine the amount of variance in the DVs that was accounted for by domain level predictors and the amount of variance that was accounted for by facet level predictors. For simplicity of presentation the results section of this chapter will detail results of this hypothesis for the HEXACO with global CWO and global OCB. Appendix C details the analyses for the HEXACO and the other DVs (CWBI, CWBO, OCBI and OCBO) as well as the NEO-PI-3 with each of the DVs (Global CWB, CWBI, CWBO, global OCB, OCBI and OCBO).

Global CWB

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the global CWB construct, adjusted $R^2 = .23$, $F(1, 1230) = 64.06$, $p < .001$ (see section 7.4.5).

The summary statistics for this model are presented in Table 9.12. Facet level predictors from the HEXACO accounted for slightly more variance in the global CWB construct, adjusted $R^2 = .26$, $F(1, 1196) = 18.13$, $p < .001$. The summary statistics for the facet level prediction are presented in Table 9.13.

Table 9.12

Summary of Regression Model HEXACO Domains with Global CWB

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
HEX – HH	-.14	.03	-.15**
HEX – EMOT	-.05	.02	-.05
HEX – E	-.01	.03	-.01
HEX – A	-.17	.03	-.18**
HEX – C	-.28	.03	-.31**
HEX – O	-.03	.02	-.03

** $p < .001$

Table 9.13

Summary of Regression Model HEXACO Facets with Global CWB

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
HH1 – Sincerity	.02	.02	.04
HH2 – Fairness	-.12	.02	-.16**
HH3 – Greed Avoidance	-.01	.02	-.02
HH4 – Modesty	-.04	.02	-.05
Emot1 – Fearfulness	-.02	.02	-.03
Emot2 – Anxiety	.05	.02	.08
Emot3 – Dependence	.01	.02	.01
Emot4 – Sentimentality	.00	.02	.00
E1 – Social Self-Esteem	.07	.03	.08
E2 – Social Boldness	.01	.02	.02
E3 – Sociability	-.04	.02	-.06
E4 – Liveliness	.01	.03	.01
A1 – Forgiveness	.04	.02	.06
A2 – Gentleness	-.11	.03	-.15**
A3 – Flexibility	-.03	.02	-.04
A4 – Patience	-.05	.02	-.07
C1 – Organization	-.09	.02	-.16**
C2 – Diligence	-.10	.03	-.13**
C3 – Perfectionism	-.04	.02	-.05
C4 – Prudence	-.03	.03	-.04
O1 – Aesthetic Appreciation	-.04	.02	-.07
O2 – Inquisitiveness	.00	.02	.00
O3 – Creativity	-.01	.02	-.02
O4 – Unconventionality	.00	.02	.00
Altruism	-.05	.03	-.07

** $p < .001$

Based on an assessment of R^2 , these results indicate that the facet level predictors provide slightly higher criterion validity in the prediction of global CWB. They indicate that at the domain level honesty-humility, agreeableness and conscientiousness make a significant contribution to the prediction of CWB and at the facet level the facets of fairness, gentleness, organisation and diligence make a significant contribution.

The results for the other DVs and for HEXACO-PI-R and the NEO-PI-3 are consistent with these findings. The facet level predictors explain more variance than the domain level predictors (see Table 9.14). The analyses and summary statistics for each of these regression models are presented in Appendix C.

A review of the summary statistics tables for the other DVs (Appendix C) indicates large variability in the facets that predict each of the dimensions of the global construct DV. It is also clear that there is the potential for difficulties in drawing conceptual links between facet level predictors and DVs (e.g.: the NEO-PI-3 *actions* facet is indicated in the regression equation for global CWB).

Table 9.14

The amount of variance in dependent variables explained by the domain and facet level predictors of the HEXACO-PI-R and the NEO-PI-3.

DV		Domain adjusted R^2	F	Facet adjusted R^2	F
Global	HEX ^{a, b}	.23	64.06**	.26	18.13**
CWB	FFM ^{c, d}	.23	75.31**	.28	16.82**
CWBI	HEX ^{a, b}	.19	48.52**	.22	14.71**
	FFM ^{c, d}	.21	66.58**	.27	16.27**
CWBO	HEX ^{a, b}	.20	53.54**	.22	14.78**
	FFM ^{c, d}	.18	55.60**	.21	11.83**
Global	HEX ^{a, b}	.29	82.91**	.31	22.78**
OCB	FFM ^{c, d}	.30	105.70**	.32	20.17**
OCBI	HEX ^{a, b}	.21	56.73**	.24	16.46**
	FFM ^{c, d}	.23	73.00**	.25	14.69**
OCBO	HEX ^{a, b}	.26	71.10**	.28	19.53**
	FFM ^{c, d}	.27	93.56**	.29	17.97**

** $p < .001$. ^a: DF for domain adjusted $R^2 = (6, 1230)$. ^b: DF for facet adjusted $R^2 = (25, 1196)$. ^c: DF for domain adjusted $R^2 = (5, 1225)$. ^d: DF for facet adjusted $R^2 = (30, 1200)$.

9.4 Discussion

The aim of this chapter was to clarify a range of questions regarding the applicability of broad personality instruments in the personnel selection process. The chapter aimed to replicate the factor structures of both the NEO-PI-3 and the HEXACO-PI-R with an employment seeking population. It also aimed to determine the applicability of norms obtained from a voluntary population with each of these instruments within a personnel selection context. Further, this chapter aimed to assess the potential influence of positive impression management when the criterion variables were CWB and OCB and to establish if narrow facet level assessment increased the predictive validity of personality for CWB and OCB criterion variables.

The empirical findings from this chapter provide several useful insights into the use of personality measures in the employment selection context. The results indicate that the important psychometric property of the factor structure of both the HEXACO-PI-R and the NEO-PI-3 were maintained when these personality assessment tools were used with an employment seeking population. These results also support the proposed FFM and the six factor models of personality as measured through the NEO-PI-3 and the HEXACO-PI-R.

The results indicated that the employment seeking population is likely to complete these tests in a way that sees them present as more emotionally stable, more extraverted, more open, more agreeable and more conscientious than the norms that have been published with these tests (McCrae & Costa, 2010; Lee & Ashton, 2004). Practitioners' use of norms generated from a population who completed the test voluntarily may serve to skew the representation of an individual's dispositional tendencies when they take the test for employment selection. The results from this study provide strong support for the use context specific norms for

personality instruments and this is particularly important in employment selection contexts where these norms are often used in decisions to include or exclude applicants.

The impact of impression management on the employment suitability DVs of CWB and OCB received mixed results. The findings relating to the CWB DVs indicated that the variability assessed by impression management is likely to be adequately assessed through the domains of both the HEXACO-PI-R and the NEO-PI-3 and that impression management itself does not contribute to the prediction of CWB beyond its shared variance with domains of these measures. The results in relation to the OCB DVs indicated that the NEO-PI-3 domains were able to account for the variance in the PPM measure but the domains of the HEXACO-PI-R did not account for all of the variance in the PPM measure in the prediction of CWBO and consequently global CWB. The correlation between the emotionality domain and the PPM measure was smaller for the HEXACO-PI-R ($r = -.25, p < .001$) than it was for the NEO-PI-R ($r = -.62, p < .001$) and it may be that the different content of these measures on the emotionality domain, with the HEXACO emotionality content more related to kin altruism (looking after those that you are close to) and the NEO-PI-3 content related to psychopathology (anxiety, depression, anger) would mean that there was content on the HEXACO emotionality measure that was relevant to OCBO that was not captured by the PPM measure.

The low internal reliability of the positive impression management measure used in this study and the consistently low reliability coefficients that have been reported for this measure (see Blanch, et al., 2009) necessitates that these results are confirmed with a positive impression measure that provides a more reliable and internally consistent measure of impression management such as the Paulhus Deception Scale (Paulhus, 1998) or the Positive Impression

Management, Defensiveness Index or Cashel Defensive Function scales of the Personality Assessment Inventory (Morey, 1991).

The results of the current study demonstrated that narrow measures of personality, combined to form a composite factor with other narrow measures with high predictive validity for CWB and OCB, are likely to provide a measure of higher criterion validity for the CWB and OCB DVs than is provided through broader domain level assessment. This indicates that there is increased criterion validity through the use of a composite of facet level assessments over domain level assessment. The results however, indicate that the use of a composite facet level predictor introduces a sizeable complication into the dispositional predictors for CWB and OCB and their interpersonal and organisational dimensions. The facets that were assessed as significant predictors were different for global and dimensional levels of the CWB and OCB constructs for both the FFM and HEXACO personality measures. The use of facet level assessment also introduces a level of difficulty in explaining conceptual linkages between facets and DVs (e.g.: NEO-PI-R *actions* facets for global CWB, see Appendix C). This research contributes to the bandwidth fidelity debate by identifying the strength that is likely to exist in the facet level assessment of CWB and OCB, which has the potential to encourage applied psychologists to consider the relevant facet level predictors as well as the more generic domain level predictors when assessing for CWB and OCB potential.

In sum, this chapter provided clear guidance to applied psychologists on the applicability of the use of personality instruments in the personnel selection process. It supported the maintenance of both the five and six factor models of personality in this context, reinforced the need for locally derived norms and identified the requirement for further consideration of impression management and its influence on the predictive validity of dispositional

assessment of OCB. It also highlighted the increased validity for facet level assessment with CWB and OCB but identified the cost of this as the conceptual complication in employing particular facets or combinations of facets in the prediction of these employment suitability domains.

CHAPTER 10

SUMMARY AND CONCLUSIONS

10.1 Introduction

This chapter provides a summary of the thesis. It outlines the contribution that the thesis has made to the scientific literature, reviews the practical and applied implications of the outcomes and outlines the limitations of the research and presents directions for future research.

This thesis contributes to the literature in the I/O and personality realms by providing the first empirical study to investigate the strength of the HEXACO against the domains of the FFM in the prediction of CWB and OCB and their interpersonal and organisational dimensions. The HEXACO is a relatively new personality model in the I/O sphere and there is sound theoretical and empirical argument to suggest it would be able to account for the pro-social aspects of both CWB and OCB to a greater extent than the FFM. Empirical research was lacking literature that compared the predictive validity of the domains of the HEXACO against the FFM in the prediction of OCB, and studies that had investigated this relationship with CWB had not explored both the interpersonal and organisational dimensions of this construct with a standardised assessment of the HEXACO and the FFM.

This thesis also contributed to the empirical literature by providing an assessment of the ability of both the HEXACO and the FFM to account for the variance of trait anger and self control in the prediction of CWB. There is strong empirical suggestion that trait anger and self control are important predictors for CWB (Spector & Fox, 1999; Douglas & Martinko, 2001; Marcus & Schuler, 2004; Bechtoldt, et al., 2007; O'Brien & Allen 2008;) and there is also evidence to suggest that elements of the FFM are able to account for variance in these constructs (Gallo & Smith, 1997; Ruiz, et al., 2001; Sharpe & Desai, 2007; Whiteman, et al., 2001; McCrae & Lockenhoff, 2010; Sanz, et al., 2010). There was however, no study that

investigated the degree to the domains of the FFM or the HEXACO were able to account for the variance of trait anger and self control in the prediction of CWB and consequently research was lacking on the ability of broad personality models to provide an adequate assessment of these constructs in the personnel selection context.

Another important contribution of this thesis was its analysis of the strengths of broad versus narrow personality measures in the prediction of CWB and OCB. The thesis outlined equally persuasive arguments and empirical evidence for the use of either broad or narrow personality measures in the prediction of workplace performance but determined that the literature was lacking a comprehensive assessment of this debate when CWB and OCB were the criterion of interest.

This thesis also provided tentative insights into the impact, or lack thereof, of positive impression management on personality predictors of CWB and OCB.

10.2 Summary of Results

The first of the empirical chapters, chapter seven, assessed the parsimony of the domains of the HEXACO over the domains of the FFM in the prediction of CWB and its interpersonal and organisational dimensions. It also assessed the ability of the domains of the HEXACO and the FFM to account for the variance of trait anger and self control in the prediction of CWB. The results demonstrated that both the domains of the HEXACO and the FFM were able to explain significant variance in CWB and its interpersonal and organisational dimensions. It found that there was little difference between the two personality models in the amount of variance that was accounted for. The chapter also demonstrated that trait anger

and self control were able to account for additional variance in CWB over the variance already accounted for by the domains of the HEXACO and the FFM.

The second empirical chapter, chapter eight, was designed to assess the parsimony of HEXACO over the FFM in the prediction of OCB and its interpersonal and organisational dimensions. The results, similar to the CWB chapter, indicated that the domains of both broad personality measures provided good predictive validity for the OCB criterion and again there was little difference between the two in the amount of variance that was accounted for.

Chapter nine presented empirical analysis of the impact of social desirable responding and considered the bandwidth fidelity debate when the criteria of interest is CWB and OCB. It found that the factor structures of both the HEXACO and the FFM were maintained in an employment seeking population. It also demonstrated that there were significant normative changes on a number of domains of both the HEXACO and the FFM in the employment selection context. The socially desirable responding measure used in the empirical analysis of chapter nine had poor internal reliability and the results reliant on this measure therefore need to be considered cautiously and validated with a more internally robust measure. The socially desirable response measure did not contribute to the prediction of CWB over variance that it shared with other domains of the HEXACO and the FFM. It did however, contribute to the prediction of OCB over the contribution made by the domains of the HEXACO.

The appendices to this thesis provide additional statistical analyses to those reported in the results sections of the empirical chapters. The analyses in the appendices allow for consideration of the breadth of analysis that was available on the research data.

10.3 Practical Implications of Findings

The current thesis was conducted for the purpose of determining the most parsimonious personality assessment for the prediction of CWB and OCB within a personnel selection context. Given this very practical starting point it is important to be explicit about how the findings of this body of work that can be applied by psychologists engaged in personnel selection processes. This section will detail the range of practical or applied implications of the thesis.

The practical implication of this study is that applied psychologists can be confident that their use of either the HEXACO-PI-R or the NEO-PI-3 will provide useful insights about an individual's potential to engage in behaviour that has the potential to help and/or harm their colleagues and the organisation. Within these tools psychologists are informed about an individual's global CWB potential by considering scores on the honesty-humility, agreeableness, and conscientiousness domains of the HEXACO-PI-R and the openness, agreeableness and conscientiousness domains of the NEO-PI-3. Practitioners are advised that the agreeableness domain is particularly important for CWBI whilst the contribution of conscientiousness domain is particularly relevant for CWBO. The current research also demonstrated that psychologists are likely to be further assisted in the prediction of CWB by also considering an individual's level of trait anger and self control.

The results of the current research demonstrated that practitioners are likely to be assisted in the prediction of global OCB potential by focussing on the extraversion, agreeableness and

conscientiousness domains of the HEXACO-PI-R and NEO-PI-3, with agreeableness being more predictive of OCBI whilst conscientiousness is more predictive of OCBO.

The broader question may be asked about whether personality is in fact a five or six factor construct and whilst this question cannot be answered by the current research, what it does tell practitioners involved in employment selection is that the HEXACO-PI-R assesses personality across six separate and distinct domains, whilst the NEO-PI-3 provides a representation of the applicant across five distinct domains. Practitioners can also be confident that the agreeableness, openness, extraversion and conscientiousness domains of each of these tools are assessing similar constructs. The emotionality dimension of these tools has less of a direct relationship and it is likely that this is due to the HEXACO-PI-R's representation of anger aspects across both the agreeableness and emotionality domains.

The findings of this research inform applied psychologists about the degree of change in the relevant domains for both the HEXACO-PI-R and the NEO-PI-3 with an employment seeking population and this result reinforces the best practice requirement to use local norms or at least norms generated on populations taking the tests for the same purposes.

In terms of the practical implications of broad versus narrow measures of personality in predicting CWB and OCB, the current research demonstrated that there is in fact increased criterion validity with the use of narrow measures. It also demonstrates that narrow measures, which often have fewer items, may in fact provide a more efficient assessment of CWB and OCB potential. The increased predictive validity and lower item requirement may however come at the cost of decreased simplicity of explanation and it was clear that whilst narrow measures may have provided better predictors of the criterion of interest the

conceptual link between the predictor and the criterion was not always clear. These results indicate that the consideration of broad versus narrow measures for the prediction of CWB and OCB require consideration of more than just criterion validity or the ‘efficiency and effective’ criteria. Currently the breadth of evidence on personality as a predictor of CWB and OCB is typically at the domain level for FFM and deviation from this is likely to be premature.

10.4 Limitations of the Research and Future Directions

There were a number of limitations with the current study. There were several limitations with the participant sample used in the empirical analysis of this thesis. The age and gender representation of the sample is likely to be biased towards younger men and is therefore unlikely to be wholly representative of the employment seeking population. Further the sample used in the current study were undertaking the assessments for employment suitability purposes within a public service environment. The sample may not therefore be representative of individuals applying for roles in other industries such as retail and manufacturing. The applicability of the current results to a more representative job-seeking population is likely to be required.

A further limitation with the thesis is the use of a correlational design. A conclusion of causation of personality and self-report CWB and OCB potential cannot therefore be assumed. The self-report nature of the dependent variables, CWB and OCB, is also a limitation of the current study. Outcome data on the degree to which an individual engaged in CWB or OCB in the workplace would have strengthened the results of the thesis. Attempts were made to collect this data but ethics approval for this research was denied due to the

potential of self-report engagement in CWB to endanger individuals' ongoing employment prospects. The results of this study would be improved with such outcome data and further research may consider ways of collecting outcome data without jeopardising an individual's ongoing employment.

The CWB measure used in the current study may have included items that had minimal relevance or were too extreme (e.g., Use an illegal drug or consumed alcohol on the job and Workplace violence) and the use of these items on the CWB measure has the potential to result in low item endorsement from an employment seeking population due to impression management motives as well as low actual probability of engagement in these behaviours. The public service population may be even less likely to engage in these behaviours given the highly regulated nature of the work environment and the rigorous probity checks that are conducted. One researcher, Evans (2005, cited in Peterson et al., 2011) developed a CWB measure that included less extreme and more day-to-day CWB items (e.g. deliberately wasting time). It is likely that the items on this measure would be better suited to the CWB likely to be seen in a public service environment and it would be important to replicate the results with a measure that had more day-to-day CWBs and less extreme examples.

A further limitation of the current study was the low internal reliability for the socially desirable responding measure. As noted in chapter nine, there is the requirement to assess the impact of socially desirable responding on the predictive validity of personality and CWB and OCB with a measure that provides adequate internal reliability. It is likely that a measure such as the Paulhus Deception Scale (Paulhus, 1998), which provides a measure of both positive impression management and self-deceptive enhancement, and has a reported

Cronbach's alpha of .75 for self-deceptive enhancement and .84 for positive impression management, would allow for such analysis.

10.4 Conclusion

In conclusion, the current thesis advances the empirical literature by comparing the strength of the domains for the HEXACO to the FFM in the prediction of the employment suitability dimensions of CWB and OCB. It provides practitioners with informative data on the validity of these tools in the employment selection context and allows for confidence in the use of these tools in the employment selection context. It also informs practitioners that if the criterion of interest is CWB they are likely to be further assisted by measures that assess trait anger and self-control. The thesis also encourages the use of local norms in employment selection decisions. In summary, the thesis provides significant practical advances in the empirical literature in the I/O and personality domains as well as providing valuable advice to the personnel selection practitioner.

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APPENDIX A

RELIABILITY ASSESSMENT OF THE DOMAINS AND FACETS OF THE NEO-PI-3 AND THE HEXACO-PI-R

NEO-PI-3

The current study assessed the NEO-PI-3 to have good internal reliability at the domain level. Cronbach's alpha for NEO-PI-3 domains in the current study ranged from .89 for the extraversion and openness domains to .93 for the emotionality and conscientiousness domains. The Cronbach's alpha for the 30 facets of the NEO-PI-3 ranged from .61 for the extraversion facet of *activity* to .82 for the agreeableness facet of trust. The reliability coefficients for each of the domains and facets of the NEO-PI-3 from this study are presented in Table A.1. This table also reports the reliability coefficients reported by McCrae and Costa (2010). There is a large degree of consistency between the reliability coefficients of that study and the use of the instrument on the current sample.

Table A.1

Reliability coefficients for NEO-PI-3 Domains and Facets

	Current sample	Costa & McCrae (2010)
Domains and Facets	α	α
Emotionality	.93	.93
Extraversion	.90	.89
Openness	.89	.89
Agreeableness	.89	.90
Conscientiousness	.93	.92
Emot1: Anxiety	.83	.83
Emot2: Angry Hostility	.76	.75
Emot3: Depression	.80	.83
Emot4: Self Consciousness	.74	.77
Emot5: Impulsiveness	.68	.66
Emot6: Vulnerability	.79	.77
E1: Warmth	.79	.79
E2: Gregariousness	.76	.76
E3: Assertiveness	.76	.77
E4: Activity	.61	.69
E5: Excitement Seeking	.63	.69
E6: Positive Emotions	.78	.80
O1: Fantasy	.68	.75
O2: Aesthetics	.81	.83
O3: Feelings	.74	.71
O4: Actions	.67	.54
O5: Ideas	.83	.81
O6: Values	.68	.70
A1: Trust	.85	.82
A2: Straightforwardness	.76	.76
A3: Altruism	.74	.78
A4: Compliance	.66	.71
A5: Modesty	.75	.76
A6: Tender Mindedness	.66	.69
C1: Competence	.73	.75
C2: Order	.75	.80
C3: Dutifulness	.65	.70
C4: Achievement Striving	.79	.77
C5: Self Discipline	.82	.78
C6: Deliberation	.72	.76

HEXACO-PI-R

The current study demonstrated that the HEXACO-PI-R is a tool with good internal consistency. Cronbach's alpha for the domain level scales ranged from $\alpha = .87$ for honesty-humility and emotionality to $\alpha = .90$ for the conscientiousness domain. Analysis of the reliability coefficients for the facet level scale of the HEXACO-PI-R also indicated good internal consistency, all facets had $\alpha > .7$ besides the *flexibility* facet which had $\alpha = .66$ (see Table A.2). A lower reliability coefficient for this scale was also reported Lee and Ashton (2006) in their adult community sample. The reliability coefficients of the HEXACO-PI-R in the current sample are reported in Table A.2.

Table A.2

Reliability Coefficients for HEXACO-PI-R Domains and Facets

HEXACO-PI-R Domains and facets	Current Sample α
Honesty-Humility	.87
Emotionality	.87
Extraversion	.90
Agreeableness	.89
Conscientiousness	.90
Openness	.89
H1: Sincerity	.77
H2: Fairness	.71
H3: Greed Avoidance	.79
H4: Modesty	.75
Emot1: Fearfulness	.77
Emot2: Anxiety	.79
Emot3: Dependence	.77
Emot4: Sentimentality	.76
E1: Social Self-esteem	.82
E2: Social Boldness	.83
E3: Sociability	.79
E4: Liveliness	.81
A1: Forgiveness	.81
A2: Gentleness	.73
A3: Flexibility	.66
A4: Patience	.80
C1: Organization	.86
C2: Diligence	.77
C3: Perfectionism	.74
C4: Prudence	.76
O1: Aesthetic Apprec'n	.83
O2: Inquisitiveness	.75
O3: Creativity	.76
O4: Unconventionality	.73
Interstitial Scale	
Altruism	.77

APPENDIX B

COUNTERPRODUCTIVE WORK BEHAVIOUR: ADDITIONAL ANALYSES

Regression Analyses Analysing the Incremental Validity of Trait Anger for the Interpersonal and Organisational Dimensions of CWB.

Interpersonal CWB

Hierarchical linear regression again supported the predictive validity of the HEXACO-PI-3 domains in accounting for variance in the interpersonal CBW construct, adjusted $R^2 = .19$, $F(1, 1216) = 48.49$, $p < .001$, the addition of the trait anger measure saw a significant increase in the variance explained, adjusted $R^2 = .20$, $F(1, 1215) = 44.47$, $p < .001$. The summary statistics of this regression are presented in Table B1. The change in R^2 with the addition of trait anger was significant, $F(1, 1215) = 16.61$, $p < .001$.

As expected, hierarchical linear regression with the NEO-PI-3 domains entered in the first step indicated that the NEO-PI-3 accounted for significant variance in the CWBI construct, adjusted $R^2 = .21$, $F(1, 1210) = 64.72$, $p < .001$, the addition of the trait anger measure saw a significant increase in the variance explained, adjusted $R^2 = .23$, $F(1, 1209) = 60.01$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1209) = 20.98$, $p < .001$. The summary statistics of this regression analysis is presented in Table B2.

Table B.1

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains and Trait Anger with CWB-Interpersonal

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	4.98	.24		4.35	.28	
HEX Honesty-Humility	-.15	.04	-.11**	-.12	.04	-.09*
HEX Emotionality	-.17	.04	-.12**	-.19	.04	-.10**
HEX Extraversion	.00	.04	-.00	.01	.04	.01
HEX Agreeableness	-.29	.04	-.22**	-.21	.04	-.16**
HEX Conscientiousness	-.30	.04	-0.22**	-.29	.040	-.22**
HEX Openness	-.10	.03	-.09*	-.12	.03	-.10**
Trait Anger				.22	.06	.13**

* $p < .01$, ** $p < .001$.

Table B.2

Summary of Multiple Regression Analysis for NEO-PI-3 Domains and Trait Anger with CWB-Interpersonal.

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	4.31	.22		3.94	.23	
NEO Emotionality	.00	.00	-.03	-.01	.00	-.11*
NEO Extraversion	.00	.00	.06	.00	.00	.04
NEO Openness	-.01	.00	-.16**	-.01	.00	.16**
NEO Agreeableness	-.01	.00	-.29**	-.01	.00	-.25**
NEO Conscientiousness	-.01	.00	0.27**	-.01	.00	-.28**
Trait Anger				.28	.05	.16**

* $p < .01$, ** $p < .001$.

Organisational CWB

Hierarchical linear regression again supported the predictive validity of the HEXACO-PI-3 domains in accounting for variance in the global CBW construct, adjusted $R^2 = .21$, $F(1, 1216) = 53.30$, $p < .001$, the addition of the trait anger measure saw a significant increase in the variance explained, adjusted $R^2 = .25$, $F(1, 1215) = 57.62$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1215) = 66.31$, $p < .001$. The summary statistics of this regression are presented in Table B3.

As expected, hierarchical linear regression with the NEO-PI-3 domains entered in the first step indicated that the NEO-PI-3 again accounted for significant variance in the global CWB construct, adjusted $R^2 = .18$, $F(1, 1210) = 55.07$, $p < .001$. The addition of trait anger saw a significant increase in the variance explained, adjusted $R^2 = .23$, $F(1, 1209) = 62.34$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1209) = 80.59$, $p < .001$. The summary statistics of this regression analysis is presented in Table B4.

Table B.3

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains and Trait Anger with CWB-Organisational

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.11	.15		2.28	.18	
HEX Honesty-Humility	-.13	.02	-.15**	-.09	.02	-.11**
HEX Emotionality	-.02	.02	-.03	-.01	.02	-.01*
HEX Extraversion	-.02	.03	-.02	.00	.03	-.00
HEX Agreeableness	-.10	.03	-.12**	.00	.03	.01
HEX Conscientiousness	-.28	.03	0.32**	-.27	.03	-.32**
HEX Openness	-.02	.02	-.028	.00	.02	.00
Trait Anger				.29	.03	.26**

* $p < .01$, ** $p < .001$.

Table B.4

Summary of Multiple Regression Analysis for NEO-PI-3 Domains and Trait Anger with CWB-Organisational

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.48	.14		2.08	.14	
NEO Emotionality	.00	.00	.09*	.00	.00	-.05
NEO Extraversion	.00	.00	.01	.00	.00	-.02
NEO Openness	.00	.00	-.02	.00	.00	-.02
NEO Agreeableness	.00	.00	-.15**	.00	.00	-.08*
NEO Conscientiousness	-.01	.00	.30**	.01	.00	-.31**
Trait Anger				.31	.03	.28**

* $p < .01$, ** $p < .001$.

Regression Analyses Analysing the Incremental Validity of Self Control for the Interpersonal and Organisational Dimensions of CWB.

CWBI

Again, the HEXACO-PI-R domains predicted significant variance in the interpersonal CWB DV, adjusted $R^2 = .20$, $F(1, 1194) = 49.02$, $p < .001$ the addition of self control to the model saw a significant increase in the proportion of variance explained in the DV, adjusted $R^2 = .22$, $F(1, 1193) = 48.70$, $p < .001$. The change in R^2 with the addition of self control was significant, $F(1, 1193) = 37.76$, $p < .001$. The summary statistics for this regression model are presented in Table B5.

Hierarchical linear regression with the NEO-PI-R domains entered in the first step indicated that the FFM again accounted for significant variance in the CWBI construct, adjusted $R^2 = .22$, $F(1, 1189) = 65.79$, $p < .001$ and self control saw a significant increase in the proportion

of variance explained in the DV, adjusted $R^2 = .25$, $F(1, 1188) = 64.52$, $p < .001$. The change in R^2 with the addition of trait anger was significant, $F(1, 1188) = 45.80$, $p < .001$.

The summary statistics of this regression are presented in Table B6.

Table B.5

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains and Trait Anger with CWB-Interpersonal

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	5.06	.24		5.23	.24	
HEX Honesty-Humility	-.16	.04	-.11**	-.12	.04	-.19*
HEX Emotionality	-.16	.04	-.12**	-.19	.04	-.14**
HEX Extraversion	-.01	.04	-.01	.03	.04	.02
HEX Agreeableness	-.29	.04	-.22**	-.67	.04	-.20**
HEX Conscientiousness	-.31	.04	-.023**	-.16	.05	-.12*
HEX Openness	-.10	.03	-.08*	-.13	.03	-.11**
Self Control				-.24	.04	-.22**

* $p < .01$, ** $p < .001$.

Table B.6

Summary of Multiple Regression Analysis for NEO-PI-3 Domains and Self Control with CWB-Interpersonal

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	4.36	.22		4.97	.23	
NEO Emotionality	.00	.00	.03	.00	.00	-.09*
NEO Extraversion	.00	.00	.06	.00	.00	.05
NEO Openness	.01	.00	-.16**	-.05	.00	.17**
NEO Agreeableness	-.01	.00	-.30**	-.01	.00	-.28**
NEO Conscientiousness	-.01	.00	0.27**	-.01	.00	-.14**
Self Control				.27	.04	.24**

* $p < .01$, ** $p < .001$.

CWBO

Again, the HEXACO-PI-R domains predicted significant variance in the organisational CWB DV, adjusted $R^2 = .21$, $F(1, 1194) = 53.17$, $p < .001$ the addition of self control to the model saw a significant increase in the proportion of variance explained in the DV, adjusted $R^2 = .26$, $F(1, 1193) = 60.00$, $p < .001$. The change in R^2 with the addition of self control was significant, $F(1, 1193) = 79.86$, $p < .001$. The summary statistics for this regression model are presented in Table B7. Hierarchical linear regression with the NEO-PI-R domains entered in the first step indicated that the FFM again accounted for significant variance in the global CWB construct, adjusted $R^2 = .18$, $F(1, 1189) = 52.88$, $p < .001$ and self control saw a significant increase in the proportion of variance explained in the DV, adjusted $R^2 = .24$, $F(1, 1188) = 62.96$, $p < .001$. The change in R^2 with the addition of self control was significant, $F(1, 1209) = 93.00$, $p < .001$. The summary statistics for this regression model are presented in Table B8.

Table B.7

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains and Self Control with CWB-Organisational

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.13	.15		3.28	.15	
HEX Honesty-Humility	-.14	.03	-.16**	-.11	.02	-.12**
HEX Emotionality	.03	.02	.03	.00	.02	.00
HEX Extraversion	-.01	.03	-.01	.02	.03	.03
HEX Agreeableness	-.09	.03	-.11**	-.06	.03	-.00
HEX Conscientiousness	-.28	.03	0.33**	-.15	.03	-.17**
HEX Openness	-.02	.02	-.03	-.01	.02	-.01
Self Control				.22	.02	-.31**

** $p < .001$.

Table B.8

Summary of Multiple Regression Analysis for NEO-PI-3 Domains and Self Control with CWB-Organisational

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.50	.14		3.05	.15	
NEO Emotionality	.00	.00	.08	.00	.00	-.01
NEO Extraversion	.00	.00	.01	.00	.00	.00
NEO Openness	.00	.00	-.02	.00	.00	-.034
NEO Agreeableness	.00	.00	-.16**	.00	.00	-.13**
NEO Conscientiousness	-.01	.00	0.30**	.00	.00	-.12*
Self Control				.25	.03	.35**

*p<.01, **p<.001.

APPENDIX C

POSITIVE IMPRESSION MANAGEMENT AND BANDWIDTH FIDELITY CONSIDERATIONS: ADDITIONAL ANALYSES

Consideration of positive impression management in the prediction of global CWB and OCB and their interpersonal and organisational dimensions

Chapter 9 outlined the hypothesis that positive impression management would not add substantial variance to the criterion of CWB and OCB over and above the established personality predictors of these criterion variables. In order to provide a succinct representation of the analyses a portion of the analyses were included in the results section of that chapter. The additional analyses are included in this Appendix.

CWBI

Two separate hierarchical linear regression models were constructed for the CWBI DVs; one with domains from the HEXACO-PI-R and the other with the domains from the NEO-PI-3.

The regression model using the HEXACO-PI-R domains indicated that this personality model was a significant predictor of global CWB, adjusted $R^2 = .20$, $F(1, 1021) = 44.00$, $p < .001$.

The addition of the PPM scale to this model saw no significant increase in the amount of variance that was explained in the CWBI DV, adjusted $R^2 = .20$, $F(1, 1020) = 37.67$, $p < .001$. The change in R^2 with the addition of PPM was not significant, $F(1, 1020) = .00$, $p > .001$. These results indicate that the PPM does not make an independent contribution to the prediction of CWBI in a model that uses the HEXACO-PI-R domains as predictors.

A consistent result was found with this DV and the domains of the NEO-PI-3. The summary statistics for this analysis are presented in Table C.1. The initial regression equation for the domains of the NEO-PI-3 as predictors of CWBI, adjusted $R^2 = .24$, $F(1, 1046) = 58.90$, $p < .001$ was not significantly advanced with the introduction of the PPM measure, the change in $R^2 = .24$, $F(1, 1045) = 49.06$, $p < .001$. The change in R^2 with the addition of PPM was not

significant, $F(1, 1045) = .14, p < .001$. Table C.2 represents the summary statistics for this analysis.

Table C.1

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with CWB-Interpersonal

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	4.91	.24		4.91	.24	
HEX Honesty-Humility	-.13	.04	-.10*	-.13	.04	-.10*
HEX Emotionality	-.17	.04	-.13**	-.17	.04	-.13**
HEX Extraversion	-.01	.04	-.01	-.01	.05	-.01
HEX Agreeableness	-.27	.04	-.21**	-.27	.04	-.21**
HEX Conscientiousness	-.28	.04	0.22**	-.28	.04	-.22**
HEX Openness	-.13	.03	-.12**	-.13	.03	-.112*
PPM				.00	.00	.00

* $p < .01$, ** $p < .001$.

Table C.2

Summary of Multiple Regression Analysis for NEO Domains and PPM with CWB-Interpersonal

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	4.15	.22		4.08	.23	
NEO Emotionality	.00	.00	-.02	.00	.00	-.01
NEO Extraversion	.00	.00	.06	.00	.00	.05
NEO Openness	-.01	.00	-.17**	-.01	.00	-.17**
NEO Agreeableness	-.01	.00	-.28**	-.01	.00	-.29**
NEO Conscientiousness	-.01	.00	0.27**	-.01	.00	-.28**
PPM				.01	.01	.04

** $p < .001$.

CWBO

Two separate hierarchical linear regression models were constructed for the CWBO DVs; one with domains from the HEXACO-PI-R and the other with the domains from the NEO-PI-3.

The regression model using the HEXACO-PI-R domains indicated that this personality model was a significant predictor of CWBO, adjusted $R^2 = .22$, $F(1, 1021) = 48.53$, $p < .001$. The addition of the PPM scale to this model saw no significant increase in the amount of variance that was explained in the CWBO DV, adjusted $R^2 = .22$, $F(1, 1020) = 42.47$, $p < .001$. The change in R^2 with the addition of PPM was not significant, $F(1, 1020) = 5.02$, $p > .01$. These results indicate that the PPM does not make an independent contribution to the prediction of CWBO in a model that uses the HEXACO-PI-R domains as predictors. Table C.3 represents the summary statistics for this analysis.

A consistent result was found with this DV and the domains of the NEO-PI-3. The summary statistics for this analysis are presented in Table C.3. The initial regression equation for the domains of the NEO-PI-3 as predictors of CWBO, adjusted $R^2 = .19$, $F(1, 1046) = 49.67$, $p < .001$ was not significantly advanced with the introduction of the PPM measure, the changed in $R^2 = .19$, $F(1, 1045) = 41.32$, $p < .001$. The change in R^2 with the addition of PPM was not significant, $F(1, 1045) = .16$, $p > .01$. Table C.4 represents the summary statistics for this analysis.

Table C.3

Summary of Multiple Regression Analysis for HEXACO Domains and PPM with CWB-Organisational

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	3.76	.16		3.76	.164	
HEX Honesty-Humility	-.13	.03	-.14**	-.12	.027	-.14**
HEX Emotionality	-.04	.03	-.04	-.04	.025	-.05*
HEX Extraversion	-.01	.03	-.01	.00	.031	.02
HEX Agreeableness	-.16	.03	-.19**	-.16	.028	-.19**
HEX Conscientiousness	-.27	.03	0.30**	-.27	.029	-.30**
HEX Openness	-.05	.02	-.07	-.05	.02	-.07
PPM				.00	.00	.03

*p<.01, **p<.001.

Table C.4

Summary of Multiple Regression Analysis for NEO Domains and PPM with CWB-Organisational

Variable	<i>Model 1</i>			<i>Model 2</i>		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.42	.15		2.41	.15	
NEO Emotionality	.00	.00	.10	.00	.00	.10*
NEO Extraversion	.00	.00	.03	.00	.00	.02
NEO Openness	.00	.00	-.04**	.00	.00	.04**
NEO Agreeableness	.00	.00	-.13**	.00	.00	-.13**
NEO Conscientiousness	-.01	.00	0.32**	.01	.00	-.33**
PPM				.00	.00	.02

*p<.01, **p<.001.

OCBI

A hierarchical linear regression model was constructed for the OCBI DV using the domains of the NEO-PI-3 in the first step with PPM added at the second step. The regression model using the NEO-PI-3 domains indicated that this personality model was a significant predictor

of CWBI, adjusted $R^2 = .25$, $F(1, 1040) = 67.79$, $p < .001$. The addition of the PPM scale to this model saw no significant increase in the amount of variance that was explained in the OCBI, adjusted $R^2 = .25$, $F(1, 1039) = 56.64$, $p < .001$. The change in R^2 with the addition of PPM was not significant, $F(1, 1014) = .95$, $p > .01$. These results indicate that the PPM does not make an independent contribution to the prediction of OCBI in a model that uses the NEO-PI-3 domains as predictors. The summary statistics for this analysis are presented in Table C.5.

Table C.5

Summary of Multiple Regression Analysis for NEO Domains and PPM with OCB-Interpersonal.

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.27	.30		2.27	.31	
NEO Emotionality	.00	.00	-.07	.00	.00	-.07
NEO Extraversion	.01	.00	.18**	.01	.00	.18**
NEO Openness	.01	.00	.13**	-.01	.00	.13**
NEO Agreeableness	.01	.00	.21**	.01	.00	.21**
NEO Conscientiousness	.01	.00	0.17**	.00	.00	.17**
PPM				.00	.00	-.00

** $p < .001$.

OCBO

A hierarchical linear regression model was constructed for the OCBO DV using the domains of the NEO-PI-3 in the first step with PPM added at the second step. The regression model using the NEO-PI-3 domains indicated that this personality model was a significant predictor of CWBO, adjusted $R^2 = .28$, $F(1, 1040) = 83.72$, $p < .001$. The addition of the PPM scale to this model saw no significant increase in the amount of variance that was explained in the OCB), adjusted $R^2 = .29$, $F(1, 1039) = 71.39$, $p < .001$. The change in R^2 with the addition of

PPM was not significant, $F(1, 1039) = 6.04, p > .01$. These results indicate that the PPM does not make an independent contribution to the prediction of OCBI in a model that uses the NEO-PI-3 domains as predictors. The summary statistics for this model are represented in Table C.6.

Table C.6

Summary of Multiple Regression Analysis for NEO Domains and PPM with OCB-Organisational

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	<i>B</i>
Constant	2.54	.32		2.28	.33	
NEO Emotionality	.00	.00	-.10*	-.00	.00	-.07
NEO Extraversion	.01	.00	.24**	.01	.00	.21**
NEO Openness	.00	.00	.00	.00	.00	.01
NEO Agreeableness	.00	.00	.05	.00	.00	.05
NEO Conscientiousness	.01	.00	0.30**	.01	.00	.27**
PPM				.02	.01	.10*

* $p < .01$, ** $p < .001$.

Consideration of bandwidth fidelity considerations in the prediction of global CWB and OCB and their interpersonal and organisational dimensions

Chapter 9 outlined the hypothesis that a composite of facet level assessments will provide stronger predictive validity than the domain level assessment of both the FFM and the HEXACO in the prediction of CWB and OCB. In order to provide a succinct representation of the analyses a portion of the analyses were included in the results section of that chapter. The additional analyses for the hypothesis are included in this Appendix.

Global CWB: NEO-PI-3

The domain level predictors from the NEO-PI-3 accounted for significant variance in the global CWB construct, adjusted $R^2 = .23$, $F(1, 1225) = 75.31$, $p < .001$. The summary statistics for this model are presented in Table C.7. Facet level predictors from the HEXACO accounted for slightly more variance in the global CWB construct, adjusted $R^2 = .29$, $F(1, 1200) = 16.82$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.8.

Table C.7.

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with Global CWB

Variable	<i>B</i>	<i>SE B</i>	β
Constant	3.20	.15	
NEO Emotionality	.00	.00	.03
NEO Extraversion	.00	.00	.04
NEO Openness	.00	.00	-.10**
NEO Agreeableness	-.01	.00	-.25**
NEO Conscientiousness	-.01	.00	-.32**

** $p < .001$.

Table C.8.

Summary of Multiple Regression Model NEO-PI-3 Facets with Global CWB

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.01	.19	
Emot1: Anxiety	.01	.00	.08
Emot2: Angry Hostility	.01	.00	.08
Emot3: Depression	.00	.00	.03
Emot4: Self Consciousness	-.01	.00	-.06
Emot5: Impulsiveness	.00	.00	-.02
Emot6: Vulnerability	.00	.00	-.04
E1: Warmth	.00	.00	.02
E2: Gregariousness	.00	.00	-.04
E3: Assertiveness	.01	.00	.06
E4: Activity	-.01	.00	-.07
E5: Excitement Seeking	.00	.00	.05
E6: Positive Emotions	.00	.00	-.01
O1: Fantasy	.00	.00	.01
O2: Aesthetics	-.01	.00	-.07
O3: Feelings	.00	.00	-.01
O4: Actions	-.01	.00	-.09*
O5: Ideas	.00	.00	-.04
O6: Values	.01	.00	.07
A1: Trust	.01	.00	.06
A2: Straightforwardness	.00	.00	-.01
A3: Altruism	.00	.01	-.04
A4: Compliance	-.01	.00	-.17**
A5: Modesty	.00	.00	-.05
A6: Tender Mindedness	-.01	.00	-.08
C1: Competence	.01	.01	.08
C2: Order	.00	.00	-.04
C3: Dutifulness	-.02	.01	-.19**
C4: Achievement Striving	-.01	.00	-.08
C5: Self Discipline	-.01	.00	-.07
C6: Deliberation	-.01	.00	-.07

* $p < .01$, ** $p < .001$

CWBI: HEXACO-PI-R

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the CWBI construct, adjusted $R^2 = .19$, $F(1, 1230) = 48.52$, $p < .001$. The summary statistics for this model are presented in Table C.9. Facet level predictors from the HEXACO accounted for slightly more variance in the CWBI construct, adjusted $R^2 = .21$, $F(1, 1196) = 14.71$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.10.

Table C.9

Summary of Regression Model HEXACO-PI-R Domains with CWBI

Variable	<i>B</i>	<i>SE B</i>	β
Constant	4.51	.23	
HEX Honesty-Humility	-.15	.04	-.11**
HEX Emotionality	-.16	.04	-.12**
HEX Extraversion	-.01	.04	.00
HEX Agreeableness	-.28	.04	-.22**
HEX Conscientiousness	-.30	.04	-.22**
HEX Openness	-.10	.03	-.09*

* $p < .01$, ** $p < .001$.

Table C.10

Summary of Regression Model HEXACO-PI-R Facets with CWBI

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	4.54	.27	
HH1 – Sincerity	.04	.03	.05
HH2 – Fairness	-.16	.04	-.15**
HH3 – Greed Avoidance	-.01	.03	-.02
HH4 – Modesty	.01	.04	-.01
Emot1 – Fearfulness	-.03	.03	-.03
Emot2 – Anxiety	.03	.03	.03
Emot3 – Dependence	.01	.03	.01
Emot4 – Sentimentality	-.02	.03	-.02
E1 – Social Self-Esteem	.03	.05	.03
E2 – Social Boldness	.03	.03	.04
E3 – Sociability	-.06	.03	-.06
E4 – Liveliness	.03	.04	.03
A1 – Forgiveness	.07	.03	.08
A2 – Gentleness	-.19	.04	-.18**
A3 – Flexibility	-.07	.04	-.06
A4 – Patience	-.07	.03	-.07
C1 – Organization	-.09	.03	-.10*
C2 – Diligence	-.09	.04	-.08
C3 – Perfectionism	-.04	.03	-.04
C4 – Prudence	-.06	.04	-.05
O1 – Aesthetic Appreciation	-.06	.03	-.07
O2 – Inquisitiveness	.02	.03	.02
O3 – Creativity	-.01	.03	-.01
O4 – Unconventionality	-.07	.03	-.06
Altruism	-.12	.04	-.11*

* $p < .01$, ** $p < .001$ *CWBI: NEO-PI-3*

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the CWBI construct, adjusted $R^2 = .21$, $F(1, 1225) = 66.58$, $p < .001$. The summary statistics for this model are presented in Table C.11. Facet level predictors from the HEXACO accounted for slightly more variance in the CWBI construct, adjusted $R^2 = .25$, $F(1, 1194) =$

14.67, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.12.

Table C.11

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with CWBI

Variable	<i>B</i>	<i>SE B</i>	β
Constant	4.33	.22	
NEO Emotionality	.00	.00	-.04
NEO Extraversion	.00	.00	.06
NEO Openness	-.01	.00	-.16**
NEO Agreeableness	-.01	.00	-.29**
NEO Conscientiousness	-.01	.00	-.27**

** $p < .001$.

Table C.12.

Summary of Multiple Regression Model NEO-PI-3 Facets with CWBI

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	3.10	.28	
Emot1: Anxiety	.01	.01	.08
Emot2: Angry Hostility	.01	.01	.08
Emot3: Depression	.00	.01	.01
Emot4: Self Consciousness	-.01	.01	-.07
Emot5: Impulsiveness	-.01	.01	-.04
Emot6: Vulnerability	-.01	.01	-.08
E1: Warmth	.00	.01	.04
E2: Gregariousness	-.01	.00	-.06
E3: Assertiveness	.01	.01	.06
E4: Activity	.00	.01	-.02
E5: Excitement Seeking	.01	.00	.06
E6: Positive Emotions	-.01	.00	-.06
O1: Fantasy	.00	.00	-.01
O2: Aesthetics	-.01	.00	-.05
O3: Feelings	.00	.01	-.01
O4: Actions	-.01	.00	-.10*
O5: Ideas	-.01	.00	-.08
O6: Values	.01	.01	.06
A1: Trust	.01	.00	.08
A2: Straightforwardness	.00	.00	-.03
A3: Altruism	.00	.01	-.02
A4: Compliance	-.03	.01	-.02**
A5: Modesty	.00	.00	-.03
A6: Tender Mindedness	-.01	.01	-.11**
C1: Competence	.01	.01	.03
C2: Order	.00	.00	-.03
C3: Dutifulness	-.01	.01	-.16**
C4: Achievement Striving	-.01	.01	-.09
C5: Self Discipline	.00	.01	.00
C6: Deliberation	-.01	.01	-.10*

* $p < .01$, ** $p < .001$

CWBO: HEXACO-PI-R

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the global CWB construct, adjusted $R^2 = .20$, $F(1, 1230) = 53.54$, $p < .001$. The summary statistics for this model are presented in Table C.13. Facet level predictors from the HEXACO accounted for slightly more variance in the global CWB construct, adjusted $R^2 = .22$, $F(1, 1196) = 14.78$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.14.

Table C.13

Summary of Regression Model HEXACO-PI-R Domains with CWBO

Variable	<i>B</i>	<i>SE B</i>	β
Constant	3.09	.15	
HEX Honesty-Humility	-.14	.02	-.16**
HEX Emotionality	.03	.02	.04
HEX Extraversion	-.02	.03	-.02
HEX Agreeableness	-.09	.03	-.11**
HEX Conscientiousness	-.27	.03	-.32**
HEX Openness	-.02	.02	.02

** $p < .001$.

Table C.14

Summary of Regression Model HEXACO-PI-R Facets with CWBO

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.79	.18	
HH1 – Sincerity	.011	.02	.02
HH2 – Fairness	-.10	.02	-.14**
HH3 – Greed Avoidance	-.01	.02	-.02
HH4 – Modesty	-.06	.02	-.09*
Emot1 – Fearfulness	-.02	.02	-.03
Emot2 – Anxiety	.07	.02	.11*
Emot3 – Dependence	.01	.02	.01
Emot4 – Sentimentality	.02	.02	.03
E1 – Social Self-Esteem	.09	.03	.11
E2 – Social Boldness	.00	.02	.00
E3 – Sociability	-.03	.02	-.05
E4 – Liveliness	.01	.03	-.02
A1 – Forgiveness	.02	.02	.03
A2 – Gentleness	-.01	.02	-.08
A3 – Flexibility	.00	.02	-.01
A4 – Patience	-.03	.02	-.05
C1 – Organization	-.10	.02	-.18**
C2 – Diligence	-.11	.03	-.16**
C3 – Perfectionism	-.04	.03	-.05
C4 – Prudence	-.02	.02	-.02
O1 – Aesthetic Appreciation	-.02	.02	-.05
O2 – Inquisitiveness	.01	.02	-.01
O3 – Creativity	-.02	.02	-.03
O4 – Unconventionality	.05	.03	.07
Altruism	-.01	.03	-.02

* $p < .01$, ** $p < .001$

CWBO: NEO-PI-3

The domain level predictors from the NEO-PI-3 accounted for significant variance in the CWBO construct, adjusted $R^2 = .18$, $F(1, 1225) = 55.60$, $p < .001$. The summary statistics for this model are presented in Table C.15. Facet level predictors from the NEO-PI-3 accounted for slightly more variance in the CWBO construct, adjusted $R^2 = .21$, $F(1, 1200) = 11.84$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.16.

Table C.15

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with CWBO

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.49	.14	
NEO Emotionality	.00	.00	.09*
NEO Extraversion	.00	.00	.01
NEO Openness	.00	.00	-.02
NEO Agreeableness	.00	.00	-.15**
NEO Conscientiousness	-.01	.00	-.30**

* $p < .01$, ** $p < .001$.

Table C.16.

Summary of Multiple Regression Model NEO-PI-3 Facets with CWBO

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.21	.19	
Emot1: Anxiety	.01	.00	.07
Emot2: Angry Hostility	.01	.00	.06
Emot3: Depression	.00	.00	.04
Emot4: Self Consciousness	.00	.00	-.04
Emot5: Impulsiveness	.00	.00	.01
Emot6: Vulnerability	.00	.01	.01
E1: Warmth	.00	.00	.00
E2: Gregariousness	.00	.00	-.01
E3: Assertiveness	.00	.00	.04
E4: Activity	.00	.00	-.09
E5: Excitement Seeking	.00	.00	.03
E6: Positive Emotions	.00	.00	.03
O1: Fantasy	.00	.00	.04
O2: Aesthetics	.00	.00	-.08
O3: Feelings	.00	.00	-.01
O4: Actions	.00	.00	-.06
O5: Ideas	.00	.00	.00
O6: Values	.00	.00	.07
A1: Trust	.00	.00	.04
A2: Straightforwardness	.00	.00	.00
A3: Altruism	.00	.00	-.05
A4: Compliance	.00	.00	-.09
A5: Modesty	.00	.00	-.05
A6: Tender Mindedness	.00	.00	-.02
C1: Competence	.01	.01	.09
C2: Order	.00	.00	-.03
C3: Dutifulness	-.02	.00	-.19**
C4: Achievement Striving	.00	.00	-.04
C5: Self Discipline	-.01	.00	-.12*
C6: Deliberation	.00	.00	-.03

* $p < .01$, ** $p < .001$ *Global OCB: HEXACO-PI-R*

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the global OCB construct, adjusted $R^2 = .29$, $F(1, 1224) = 82.92$, $p < .001$. The summary

statistics for this model are presented in Table C.17. Facet level predictors from the HEXACO accounted for slightly more variance in the global OCB construct, adjusted $R^2 = .31$, $F(1, 1191) = 7.19$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.18.

Table C.17

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains with Global OCB

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.42	.27	
HEX Honesty-Humility	.06	.04	-.04
HEX Emotionality	-.01	.04	.00
HEX Extraversion	-.42	.05	.26**
HEX Agreeableness	-.18	.05	.12**
HEX Conscientiousness	.44	.05	.27**
HEX Openness	.07	.04	.05

** $p < .001$.

Table C.18

Summary of Regression Model HEXACO-PI-R Facets with Global OCB

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	1.81	.32	
HH1 – Sincerity	-.09	.04	-.08
HH2 – Fairness	.10	.04	.08
HH3 – Greed Avoidance	-.05	.03	-.05
HH4 – Modesty	.10	.04	.08
Emot1 – Fearfulness	-.06	.04	-.05
Emot2 – Anxiety	-.02	.04	-.01
Emot3 – Dependence	-.06	.04	-.05
Emot4 – Sentimentality	.09	.04	.08
E1 – Social Self-Esteem	.03	.05	.02
E2 – Social Boldness	.17	.04	.15
E3 – Sociability	.02	.04	.01
E4 – Liveliness	.07	.05	.05**
A1 – Forgiveness	.06	.03	.05
A2 – Gentleness	.00	.04	.00
A3 – Flexibility	.04	.04	.03
A4 – Patience	.06	.04	.05
C1 – Organization	.12	.03	.12 **
C2 – Diligence	.21	.05	.15**
C3 – Perfectionism	.06	.04	.05
C4 – Prudence	-.01	.05	-.01
O1 – Aesthetic Appreciation	.01	.03	.01
O2 – Inquisitiveness	.06	.04	.05
O3 – Creativity	.04	.04	.04
O4 – Unconventionality	-.70	.04	-.05
Altruism	.12	.05	.08

** $p < .001$ *Global OCB: NEO- PI-3*

The domain level predictors from the NEO-PI-3 accounted for significant variance in the global OCB construct, adjusted $R^2 = .30$, $F(1, 1219) = 105.67$, $p < .001$. The summary statistics for this model are presented in Table C.19. Facet level predictors from the NEO-PI-3 accounted for slightly more variance in the global OCB construct, adjusted $R^2 = .32$, $F(1,$

1194) = 20.17, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.20.

Table C.19

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with Global OCB

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.47	.25	
NEO Emotionality	.00	.00	-.09*
NEO Extraversion	.01	.00	.25**
NEO Openness	.00	.00	.06
NEO Agreeableness	.05	.00	.12**
NEO Conscientiousness	.01	.00	.27**

* $p < .01$, ** $p < .001$.

Table C.20.

Summary of Multiple Regression Model NEO-PI-3 Facets with Global OCB

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.94	.40	
Emot1: Anxiety	.00	.01	-.01
Emot2: Angry Hostility	-.01	.01	-.07
Emot3: Depression	.00	.01	.03
Emot4: Self Consciousness	.00	.01	.01
Emot5: Impulsiveness	.00	.01	-.02
Emot6: Vulnerability	-.01	.01	-.08
E1: Warmth	.01	.01	.06
E2: Gregariousness	.00	.01	.00
E3: Assertiveness	.01	.01	.07
E4: Activity	.02	.01	.13**
E5: Excitement Seeking	.01	.00	.05
E6: Positive Emotions	.01	.01	.03
O1: Fantasy	-.01	.00	-.07
O2: Aesthetics	.01	.00	.05
O3: Feelings	-.01	.01	-.04
O4: Actions	.00	.01	.00
O5: Ideas	.01	.01	.04
O6: Values	.00	.01	.00
A1: Trust	.00	.01	.02
A2: Straightforwardness	-.01	.00	-.07
A3: Altruism	.03	.01	.15**
A4: Compliance	.01	.01	.04
A5: Modesty	.00	.00	.01
A6: Tender Mindedness	.01	.01	.07
C1: Competence	.00	.01	-.01
C2: Order	.01	.01	.04
C3: Dutifulness	.01	.01	.07
C4: Achievement Striving	.01	.01	.08
C5: Self Discipline	-.01	.01	-.03
C6: Deliberation	.01	.01	.04

** $p < .001$ *OCBI: HEXACO-PI-R*

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the OCBI construct, adjusted $R^2 = .21$, $F(1, 1224) = 56.73$, $p < .001$. The summary statistics

for this model are presented in Table C.21. Facet level predictors from the HEXACO accounted for slightly more variance in the OCBI construct, adjusted $R^2 = .24$, $F(1, 1191) = 16.46$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.22.

Table C.21

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains with OCBI

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.23	.30	
HEX Honesty-Humility	.13	.05	.07
HEX Emotionality	.01	.05	.05
HEX Extraversion	.37	.05	.22**
HEX Agreeableness	.25	.05	.15**
HEX Conscientiousness	.31	.05	.18**
HEX Openness	.09	.04	.06

** $p < .001$.

Table C.22

Summary of Regression Model HEXACO-PI-R Facets with OCBI

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	1.79	.35	
HH1 – Sincerity	-.03	.04	-.03
HH2 – Fairness	.04	.05	-.03
HH3 – Greed Avoidance	-.03	.04	-.03
HH4 – Modesty	.11	.05	-.08
Emot1 – Fearfulness	-.09	.04	-.71
Emot2 – Anxiety	.02	.04	.01
Emot3 – Dependence	-.09	.04	-.07
Emot4 – Sentimentality	.14	.04	.11*
E1 – Social Self-Esteem	.07	.06	.05
E2 – Social Boldness	.11	.04	.10
E3 – Sociability	.03	.04	.02
E4 – Liveliness	.06	.05	.04
A1 – Forgiveness	.07	.04	.06
A2 – Gentleness	.02	.05	.01
A3 – Flexibility	.04	.05	.03
A4 – Patience	.07	.04	.06
C1 – Organization	.06	.03	.06
C2 – Diligence	.15	.05	.10*
C3 – Perfectionism	.10	.04	.07
C4 – Prudence	-.05	.06	-.03
O1 – Aesthetic Appreciation	.01	.03	.01
O2 – Inquisitiveness	.01	.04	.00
O3 – Creativity	.04	.04	.03
O4 – Unconventionality	-.03	.04	-.03
Altruism	.21	.06	.14**

* $p < .01$, ** $p < .001$ *OCBI: NEO-PI-3*

The domain level predictors from the NEO-PI-3 accounted for significant variance in the OCBI construct, adjusted $R^2 = .23$, $F(1, 1219) = 73.00$, $p < .001$. The summary statistics for this model are presented in Table C.23. Facet level predictors from the NEO-PI-3 accounted for slightly more variance in the OCBI construct, adjusted $R^2 = .25$, $F(1, 1194) = 14.67$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.24.

Table C.23

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with OCBI

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.29	.27	
NEO Emotionality	.00	.00	-.05
NEO Extraversion	.01	.00	.20**
NEO Openness	.00	.00	.11**
NEO Agreeableness	.01	.00	.20**
NEO Conscientiousness	.01	.00	.17**

** $p < .001$.

Table C.24.

Summary of Multiple Regression Model NEO-PI-3 Facets with OCBI

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.67	.36	
Emot1: Anxiety	.00	.01	-.01
Emot2: Angry Hostility	-.01	.01	-.05
Emot3: Depression	.00	.01	.01
Emot4: Self Consciousness	.01	.01	.04
Emot5: Impulsiveness	.00	.01	.00
Emot6: Vulnerability	-.02	.01	-.09
E1: Warmth	.01	.01	.08
E2: Gregariousness	.00	.01	.00
E3: Assertiveness	.00	.01	.01
E4: Activity	.01	.01	.07
E5: Excitement Seeking	.01	.01	.05
E6: Positive Emotions	.01	.01	.03
O1: Fantasy	.00	.01	-.02
O2: Aesthetics	.00	.00	.01
O3: Feelings	.00	.01	-.01
O4: Actions	-.01	.01	-.03
O5: Ideas	.00	.01	.03
O6: Values	.01	.01	.06
A1: Trust	.00	.01	.02
A2: Straightforwardness	-.01	.01	-.05
A3: Altruism	.04	.01	.19**
A4: Compliance	.00	.01	.02
A5: Modesty	.00	.01	.01
A6: Tender Mindedness	.02	.01	.11**
C1: Competence	.00	.01	-.01
C2: Order	.00	.01	.01
C3: Dutifulness	.01	.01	.07
C4: Achievement Striving	.01	.01	.05
C5: Self Discipline	-.01	.01	-.04
C6: Deliberation	.01	.02	-.05

** $p < .001$

OCBO: HEXACO-PI-R

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the OCBO construct, adjusted $R^2 = .26$, $F(1, 1224) = 71.10$, $p < .001$. The summary statistics for this model are presented in Table C.25. Facet level predictors from the HEXACO accounted for slightly more variance in the OCBO construct, adjusted $R^2 = .28$, $F(1, 1191) = 19.53$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.26.

Table C.25

Summary of Multiple Regression Analysis for HEXACO-PI-R Domains with OCBO

Variable	<i>B</i>	<i>SE B</i>	β
Constant	1.56	.32	
HEX Honesty-Humility	.00	.05	.00
HEX Emotionality	-.03	.05	-.05
HEX Extraversion	.46	.05	.25**
HEX Agreeableness	.15	.05	.08*
HEX Conscientiousness	.53	.05	.28**
HEX Openness	.06	.04	.04

* $p < .01$, ** $p < .001$.

Table C.26

Summary of Regression Model HEXACO-PI-R Facets with OCBO

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	1.88	.38	
HH1 – Sincerity	-.12	.04	-.09*
HH2 – Fairness	.14	.05	.09*
HH3 – Greed Avoidance	-.07	.04	-.05
HH4 – Modesty	.10	.05	.07
Emot1 – Fearfulness	-.04	.04	-.03
Emot2 – Anxiety	-.04	.05	-.03
Emot3 – Dependence	-.04	.05	-.03
Emot4 – Sentimentality	.05	.05	.03
E1 – Social Self-Esteem	-.01	.06	-.17
E2 – Social Boldness	.21	.05	.16**
E3 – Sociability	.03	.05	.02
E4 – Liveliness	.07	.06	.05
A1 – Forgiveness	.06	.04	.04
A2 – Gentleness	.00	.05	.00
A3 – Flexibility	.04	.05	.03
A4 – Patience	.04	.05	.03
C1 – Organization	.17	.04	.14**
C2 – Diligence	.25	.06	.16**
C3 – Perfectionism	.03	.05	.02
C4 – Prudence	.01	.06	.01
O1 – Aesthetic Appreciation	.00	.04	-.01
O2 – Inquisitiveness	.11	.04	.08
O3 – Creativity	.07	.04	.06
O4 – Unconventionality	-.10	.04	-.07
Altruism	.04	.06	.03

** $p < .001$

OCBO: NEO-PI-3

The domain level predictors from the HEXACO-PI-R accounted for significant variance in the global OCB construct, adjusted $R^2 = .28$, $F(1, 1219) = 93.56$, $p < .001$. The summary statistics for this model are presented in Table C.27. Facet level predictors from the HEXACO accounted for slightly more variance in the global OCB construct, adjusted $R^2 = .31$, $F(1, 1194) = 17.97$, $p < .001$. The summary statistics for the facet level prediction are presented in Table C.28.

Table C.27

Summary of Multiple Regression Analysis for NEO-PI-3 Domains with OCBO

Variable	<i>B</i>	<i>SE B</i>	β
Constant	2.59	.29	
NEO Emotionality	.00	.00	-.10*
NEO Extraversion	.01	.00	.25**
NEO Openness	.00	.00	.01
NEO Agreeableness	.00	.00	.06
NEO Conscientiousness	.01	.00	.28**

* $p < .01$, ** $p < .001$.

Table C.28

Summary of Multiple Regression Model NEO-PI-3 Facets with OCBO

Variable	Regression Model		
	<i>B</i>	<i>SE B</i>	β
Constant	2.67	.36	
Emot1: Anxiety	.00	.01	-.01
Emot2: Angry Hostility	-.01	.01	-.05
Emot3: Depression	.00	.01	.01
Emot4: Self Consciousness	.01	.01	.04
Emot5: Impulsiveness	.00	.01	.00
Emot6: Vulnerability	-.02	.01	-.10
E1: Warmth	.01	.01	.08
E2: Gregariousness	.00	.01	.00
E3: Assertiveness	.00	.01	.01
E4: Activity	.02	.01	.08
E5: Excitement Seeking	.01	.01	.05
E6: Positive Emotions	.01	.01	.03
O1: Fantasy	.00	.01	-.02
O2: Aesthetics	.00	.00	.01
O3: Feelings	.00	.01	-.01
O4: Actions	-.01	.01	-.03
O5: Ideas	.00	.01	.03
O6: Values	.01	.01	.06
A1: Trust	.00	.01	.02
A2: Straightforwardness	-.01	.01	-.05
A3: Altruism	.04	.01	.19**
A4: Compliance	.00	.01	.02
A5: Modesty	.00	.01	.01
A6: Tender Mindedness	.02	.01	.11**
C1: Competence	.00	.01	-.01
C2: Order	.00	.01	.01
C3: Dutifulness	.01	.01	.07
C4: Achievement Striving	.01	.01	.05
C5: Self Discipline	-.01	.01	-.04
C6: Deliberation	.01	.01	.04

** $p < .001$