
PREDICTING SALES PERFORMANCE

*Strengthening the personality –
job performance linkage*



Thomas Sitser

Predicting sales performance:

Strengthening the personality –
job performance linkage

Thomas Sitser

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Thomas Sitser, Erasmus University Rotterdam

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Promotor: Prof.dr. M. Ph. Born

Overige leden: Prof.dr. A.B. Bakker

Prof.dr. U.C. Klehe

Prof.dr. H.T. van der Molen

Copromotor: Dr. D. van der Linden

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Chapter 1

1

General Introduction



Personality questionnaires are often-used tools for selecting applicants and for assessing employees in general (Barrick, Mount, & Judge, 2001). Nevertheless, the predictive validity of personality questionnaires for work-related outcome variables such as job performance is still a topic of debate (Morgeson et al., 2007). Researchers such as Morgeson et al. (2007) and Murphy and Dziewieczynski (2005) even stated that in a selection context the use of personality questionnaires should be reconsidered because their predictive validity for job performance is low.

Many attempts in the past have been undertaken to increase the predictive validity of personality questionnaires. Some have led to the conclusion that personality is an ineffective predictor of performance (e.g., Davis-Blake & Pfeffer, 1989; Guion & Gottier, 1965; Mischel, 1986) but other attempts show that personality measures *do* have predictive validity for work outcomes (Barrick & Mount, 1991; Judge, Heller, & Mount, 2002; Salgado, Moscoso, & Berges, 2013). Yet, even after decades of research and efforts to improve the predictive validity of the well-known Big Five model, currently the reported predictive validities vary from low to modest at most, with observed effect sizes ranging from $r = .11$ (Barrick, Mount, & Judge, 2001) to $r = .37$ (Judge et al., 2002).

Despite this modest predictive validity of personality questionnaires, the use of these questionnaires by organizations has increased in the last two decades (Hsu, 2004). At present, it is estimated for instance that about 80% of the Fortune 500 companies in the United States use personality tests (*Psychology Today*, 2011). Moreover, results from a European study (Evers et al., 2012) suggest that all over Europe, psychologists show an increasingly positive attitude towards the usage of tests in general. Thus, there is ample reason to continue and expand the research into improving the predictive validity of personality questionnaires. This dissertation aims to contribute to this goal. Specifically, we will address several attempts to improve the predictive validity of personality measures. These attempts focus on the choice of so-called personality bandwidth, conceptually matching personality traits with job tasks, differentiating personality from emotional intelligence, improvement in test-format by means of contextualization of the test-items, and choice in test-takers (distinguishing self- from other-ratings). The empirical studies in this dissertation focus on predicting the performance of sales employees. Sales performance was selected because sales jobs are common in the workplace. For instance, sales jobs make up 10.6% of all jobs in the U.S. economy (Bureau of Labor Statistics, 2004). Using sales performance as a criterion in this dissertation makes it possible to use both rated (subjective) performance and objective performance criteria. In sales jobs, objective performance criteria (yearly sales revenues per employee) are often used and thus are easily collectable. We will first provide an overview of the literature on the various strategies of validity improvement of personality questionnaires. Next, the research aims that will be studied in this dissertation are described.

PERSONALITY AND SALES PERFORMANCE

Although different personality models exist, most personality questionnaires used for predicting behavior in research and selection procedures are based on the Big Five, also known as the Five Factor Model (Costa & McCrae, 1992; Goldberg, 1980). Previous studies into the predictive validity of the Big Five for sales performance found that, depending on the study, different factors of the Big Five have predictive validity for sales performance (Barrick, Stewart, & Piotrowski, 2002; Barrick & Mount, 1991; Vinchur, Schippmann, Switzer & Roth, 1998). Salgado (1997) and Hurtz and Donovan (2000) showed that Conscientiousness has the highest predictive validity for sales jobs. Barrick and Mount (1991) and Hurtz and Donovan (2000) showed that Extraversion was a predictor of sales performance, and Furnham and Fudge (2008) found that Openness was a predictor of sales performance.

Interestingly, the predictive validity of personality for sales performance seems to differ depending on whether the study used subjectively rated sales job performance (ratings by supervisors or managers) or if objectively measured sales performance was used as a criterion. Examples of objective sales performance criteria are yearly sales numbers per employee and the number of newly attained clients per year. When using an objective sales performance criterion (in this case the number of new customers), Furnham and Fudge (2008) found that Openness was an effective predictor. This finding suggests that employees describing themselves as change-oriented and as actively seeking new experiences are better equipped to attain new customers. However, predictors other than Openness were reported in the following meta-analytic studies. Regarding supervisor-rated sales performance, Salgado (1997) and Hurtz and Donovan (2000) showed that, of the Big Five factors, Conscientiousness had the highest predictive validity, and Barrick and Mount (1991) and Hurtz and Donovan (2000) showed that Extraversion was a relevant predictor. This suggests that sales employees who are talkative, energetic, assertive (Extraversion), and organized, thorough and who plan their behavior (Conscientiousness) are more effective at achieving sales success as rated by their supervisors. Vinchur, Schippmann, Switzer, and Roth (1998) reported that Extraversion and Conscientiousness were the best predictors of objective (sales figures) as well as of supervisor-rated performance. Vinchur et al. (1998) reported that of the Big Five, Agreeableness and Emotional Stability only show minor relations or no relation at all to sales performance. Thus, based on these meta-analytic findings, Conscientiousness and Extraversion are the personality predictors related to sales performance. However, findings seem to differ per study and seem to be dependent on the type of criterion that was used in the study (objective or subjective).

USING PERSONALITY FACETS, BIG FIVE TRAITS AND THE GFP TO PREDICT SALES PERFORMANCE

One way in which researchers have tried to improve the predictive validity of personality is by using the underlying personality facets of the Big Five or so-called narrow personality traits, instead of the Big Five dimensions themselves (Ashton, 1998; De Vries, De Vries, & Born, 2011; De Vries, 2012; Hough, 1992; Mershon & Gorsuch, 1988; Stewart, 1999). Ones and Viswesvaran (1996) defined narrow personality traits (facets) as concrete traits (Allen & Ebbesen, 1981) with clear 'behavioral connotations'. For example, the 'Order' sub-factor of Conscientiousness can be considered a narrow personality trait because it measures orderliness, which is a rather specific type of behavior. Indeed, Dudley, Orvis, Lebiecki, & Cortina (2006) increased the predictive validity over Conscientiousness by using the Conscientiousness facet Order for predicting performance of sales workers. Vinchur, Schippmann, Switzer, and Roth (1998), and Warr, Bartram & Martin (2005) investigated the criterion validities of narrow traits for sales ratings and sales results. Both studies found that the Extraversion facet Potency was a valid predictor of sales ratings and of sales results.

Until now, studies have only used the Big Five and their underlying facets to study the predictive validity of personality for the performance of sales employees. However, some researchers have suggested that the Big Five do not necessarily represent the highest level of personality and that there may be even higher-level personality factors (e.g., DeYoung, 2006; Digman, 1997; Musek, 2007; Rushton, Bons, & Hur, 2008) and, furthermore, that such a higher order factor can be a valid predictor of work outcomes (Van der Linden, Te Nijenhuis, & Bakker, 2010).

Digman (1997) found two stable higher-order factors of personality, which he labeled Alpha and Beta. Agreeableness, Conscientiousness, and Emotional Stability load on Alpha, and Openness and Extraversion load on Beta. Musek (2007) further extended the hierarchical levels of personality by proposing a 'Big One', which he suggested to be the integration of the positive scores on the Big Five personality traits and he associated this with social desirability. This factor was labeled the General Factor of Personality (GFP). People scoring high on the GFP have been described as altruistic, emotionally stable, agreeable, conscientious, extraverted, and intellectually open, with high levels of well-being, satisfaction with life, self-esteem, and emotional intelligence (Musek, 2007; Rushton et al., 2008). The GFP has also been defined as a broad array of attributes that facilitate or inhibit personality-related success (Rushton et al., 2008; Rushton & Irwing, 2011; Van der Linden, Scholte, Cillessen, Te Nijenhuis, & Segers, 2010; Van der Linden, Figueredo, De Leeuw, Scholte, & Engels, 2012). There are two reasons why it is relevant to study the GFP further in this dissertation. First, there are claims that individuals who score high on the GFP have a social advantage. For instance, Van der Linden et al. (2010) found that high GFP adolescents were perceived to be more likeable and more popular. This social advantage may also be positively related to the performance of sales employees. Second,

it is relevant to study the GFP further because there is an ongoing debate about it. For example, it has been suggested that the GFP may not reflect much more than socially desirable response tendencies (Backström, Björklund, & Larssen, 2009) or methodological artifacts (Ashton, Lee, Goldberg, & De Vries, 2009; De Vries, 2011). In summary, the debate about the nature of the GFP continues and, in order for it to be settled, new empirical data on the topic are needed.

Thus, the present dissertation will extend previous research on the prediction of sales performance with personality by using the broad personality predictor, the General Factor of Personality (GFP; Musek, 2007; Rushton et al., 2008; Van der Linden et al., 2010), as a potential predictor of sales performance. The discussion on the value of narrow versus broad measures is often referred to as the 'bandwidth-fidelity discussion' (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996) or the 'fidelity-bandwidth trade-off' (Hogan & Roberts, 1996). So far, most, if not all, research into the bandwidth-fidelity discussion has focused on personality traits versus lower-order facets.

Despite previous research into the GFP, it remains an empirical question whether such higher-level factors, beyond the Big Five, provide good predictions of behavior. The second chapter in the present dissertation focuses on extending the present research on the GFP (Musek, 2007; Rushton et al., 2008; Van der Linden et al., 2010) by studying its predictive validity for sales performance. The GFP is considered to be a basic personality dimension occupying the top of the hierarchical factor structure of personality; thus it is the broadest personality trait possible. By taking into account the GFP as the broadest personality trait possible, the present dissertation attempts to provide valuable new insight into the bandwidth-fidelity discussion (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996).

CONCEPTUALLY ALIGNING PERSONALITY WITH SALES PERFORMANCE CRITERIA

Improving the predictive validity of personality questionnaires is also the aim of conceptual alignment, which is a process in which personality constructs are linked with conceptually aligned job performance criteria (Campbell, 1990; Sitser, Van der Linden, & Born, 2013). For example, in previous studies the predictive validity of the Big Five was found to be dependent on the conceptual overlap with outcome behavior. For instance, Openness, which is a tendency to search for new experiences, was found to predict turnover among call center employees (Timmerman, 2006). The topic of conceptual alignment will be investigated in two chapters in this dissertation. First, chapter 2 will address the question of whether linking personality traits and facets with conceptually aligned sales performance criteria will improve the personality-sales performance relationship. In this chapter, subject matters experts (SMEs) are asked to conceptually link personality traits with sales-related job criteria such as achieving sales results, handling client objectives and customer relationship management. The second time

conceptual alignment is discussed in chapter 5, in which a model of so-called personality-context interaction is proposed. This model describes how the relationship between personality predictors that contain a Frame-of-Reference (FOR) and work-related outcome variables is moderated by the 'strength' of a situation. Conceptual alignment is used in this model to match contextualized personality traits and facets with job performance criteria. This may lead to an increased predictive validity of contextualized personality questionnaires.

PREDICTING SALES PERFORMANCE: HOW TO DIFFERENTIATE PERSONALITY FROM EMOTIONAL INTELLIGENCE AND COGNITIVE ABILITY

Another discussion among researchers about personality as a predictor of outcome variables relates to the issue of whether emotional intelligence (EI) is a separate construct, not belonging to the personality domain, or whether EI is a part of personality. According to Mayer, Salovey, and Caruso (2002, p. 139), emotional intelligence (EI) is "a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use this information to guide one's thinking and actions". Goleman (1998) even suggested that, in predicting job performance, emotional intelligence may be twice as important as predictors such as cognitive abilities. Other researchers have questioned such statements, because the predictive validity of EI could not be easily shown (Joseph & Newman, 2010; Newsome & Day, 2000). Some researchers have suggested that emotional intelligence is part of the personality domain and thus they have questioned whether EI has any incremental validity beyond personality traits (Landy, 2005; Locke, 2005; Murphy, 2006; Van Rooy & Viswesvaran, 2004). This has led to a debate regarding the potential for EI measures to incrementally predict job performance above and beyond personality.

Regarding the predictive validity of EI, it has been suggested that emotional intelligence (EI) may also be an important performance predictor of sales performance because sales employees must acquire skills that will allow them to secure and maintain buyer-seller relationships profitably (Churchill et al., 1985; Weitz, Sujan, & Sujan, 1986). Recent research by Iliescu, Ilie, Ispas, and Ion (2012) has shown the predictive validity of EI for sales performance. It has been suggested and reported that EI is critical to effective selling (Goleman, 1998; Weitz, Castleberry, & Tanner, 2001).

An important issue with EI involves the incremental criterion-related validity of EI in relation to other well-known predictors such as general intelligence. Apart from the earlier suggested overlap with personality, researchers have suggested that EI is related to overall cognitive ability or *g*. Therefore, it has also been questioned whether EI has incremental validity beyond cognitive ability (Landy, 2005; Locke, 2005; Murphy, 2006; Van Rooy & Viswesvaran, 2004). Recent research (Joseph & Newman, 2010) suggests that of the four facets of EI, emotion perception,

emotion facilitation, emotion understanding, and emotion regulation (Mayer & Salovey, 1997), only emotion regulation has a direct relation with job performance. Moreover, it has been suggested that the amount of emotional labor should act as a moderator in this relationship. O'Boyle, Humphrey, Pollack, Hawver, and Story (2011, p. 807) suggested in a recent meta-analysis that "researchers may want to focus on the contribution that EI plays in jobs requiring emotional labor and interactions with customers".

Chapter 3 of the present dissertation will try to fill this gap in research, by studying the role that emotion regulation has in high emotional labor sales work. We will thus conduct a field study comparing a sample of sales employees who engage in high emotional labor and a group of sales employees who engage in low emotional labor. Within this dissertation it is tested whether emotion regulation predicts sales performance in high emotional labor sales jobs but not in low emotional labor sales jobs. This part of the dissertation, furthermore, will investigate the predictive validity of the EI facet emotion regulation above and beyond Big Five personality and cognitive ability.

IMPROVING THE PREDICTIVE VALIDITY OF PERSONALITY MEASURES BY USING OTHER-RATINGS

Most research in the field of personality has been based on self-report measures of personality. However, collecting personality ratings from other-raters, such as family, friends, and even strangers, may be a method that allows better prediction of outcome criteria. More specifically, it has been suggested that one of the reasons for the relatively low validity of personality in predicting job performance may be the overreliance on self-reports when measuring personality (Barrick & Mount, 2001; Morgeson et al., 2007). Although self-report measures have the advantage of being suitable for selection procedures, they also contain several biases that reduce their predictive validity (Morgeson et al., 2007; Murphy & Dzieweczynski, 2005). Recent research has confirmed that other-ratings of personality partly deal with these biases and improve the predictive validity of personality for various outcome variables, including job performance (Connelly & Ones, 2010; Oh, Wang, & Mount, 2011).

However, previous research into other-ratings has two limitations. First, most of these studies focused only on the trait (factor) level and not on the facet level of personality. Second, previous studies did not take into account the potential blending of other-ratings of personality with other-ratings of performance. That is, other-ratings of personality may actually be ratings of (observable) performance (Hogan, 1991). Socioanalytic theory (Hogan, 1991) suggests that other-ratings of personality in a work context mainly measure the reputation (performance) of an individual. This reputation may not necessarily truly reflect someone's personality but instead would be a rating that is strongly colored by how a person performs at his or her job. If this turns out to be true, then other-ratings of personality will show considerable overlap

with other-ratings of performance. Therefore, in chapter 4 of the dissertation we examine the predictive validity of other-ratings of personality at the trait and facet level, while controlling for other-ratings of performance.

THEORY DEVELOPMENT: USING PERSONALITY CONTEXTUALIZATION TO PREDICT SALES PERFORMANCE IN STRONG SITUATIONS

Finally, an important approach for improving the predictive validity of personality questionnaires is the attempt to contextualize personality questionnaires (e.g., Bing et al., 2004; Lievens et al., 2008). Personality questionnaire contextualization implies adding a Frame of Reference (FOR) in the instructions of the questionnaire and/or in the items of a personality questionnaire. As an example of a sales-related Frame of Reference, consider the following Conscientiousness scale item from the BFI (John & Srivastava, 1999): 'I see myself as someone who perseveres until the task is finished'. After adding a sales Frame of Reference the item would be: 'I see myself as someone who perseveres until the sales goal is reached'. Indeed, some researchers found evidence that personality measures achieved higher criterion-related validity when the test and criterion contexts were matched (Bing et al., 2004; Hunthausen, Truxillo, Bauer, & Hammer, 2003; Lievens et al., 2008; Schmit, Ryan, Stierwalt, & Powell, 1995). However, as there are also studies that found only minor increases in predictive validity when personality measures were contextualized (e.g., Shaffer & Postlethwaite, 2012), there seems to be a need for further research into the predictive validity of these measures.

This part of the dissertation will integrate two existing topics, namely conceptual alignment and the bandwidth-fidelity discussion into the field of FOR personality measures. Furthermore, two propositions regarding FOR personality measures will be suggested.

First, it is suggested that there is a limit to the amount of contextualization that should be applied in personality items. When personality item contextualization becomes too specific, and thus too many behavior descriptors are added, the predictive validity of the questionnaire may be nothing more than measuring self-rated behavior to predict other-rated behavior. This may cause the personality measure to have limited generalizability for other jobs. Furthermore, adding too many behavior descriptors to personality items may cause such a measure to have a limited potential as a measure of personality.

It is further suggested that the strength of a situation may act as a moderator in the relation between contextualized personality and job criteria. In contrast to generic personality measures, contextualized personality measures may still predict performance in strong situations. In order to illustrate this idea, we differentiate strong situations into two types, as suggested by Beaty, Cleveland, and Murphy (2001). In strong *task* situations, performance guidelines are focused on completing assigned tasks. In strong *contextual* situations, performance guidelines are focused on helping coworkers and showing a willingness to volunteer for extra assignments and

showing support for policies and procedures. We will argue that test takers may experience trait activation (Tett & Guterman, 2000) due to the situational cues that are provided by the FOR in a contextualized personality questionnaire. Trait activation is the process in which situational cues elicit the expression of individual differences in personality (Tett & Burnett, 2003). As a consequence, we will state that in strong *contextual* situations, in which the guidelines are limited to helping co-workers and sticking to procedures, a FOR personality measure may still have predictive validity if it has a FOR that is trait relevant for *task* performance (e.g., 'I focus on achieving my sales goals'). Of course, this can also be reversed; a FOR personality measure may still have predictive validity in strong *task* situations if it has a FOR that is trait relevant for *contextual* performance. Because we focus on sales performance in this study and because sales performance criteria tend to be *task* oriented and less oriented towards *contextual* performance, we have focused on trait activation for *task* performance in strong *contextual* situations in this study. Finally, we show how the proposed model can be used to optimize the prediction of the performance of sales employees in *strong contextual* situations.

SPECIFIC RESEARCH AIMS

As described in this introductory chapter, there are many potential ways of improving the personality-job performance relationship. This dissertation describes three empirical papers and one theoretical paper. These papers study the effects of the General Factor of Personality (GFP), conceptual alignment, emotional intelligence, other-ratings of personality and personality contextualization on the personality-sales performance relationship. Chapter 2 will examine the use of the General Factor of Personality, the Big Five and narrow facets in predicting broad and narrow sales performance criteria. Chapter 3 will address the incremental predictive validity of emotion regulation in high emotional labor sales jobs. Chapter 4 will address the prediction of performance with other-ratings of personality at the trait and the facet level, while controlling for peer-ratings of performance. Finally, chapter 5 will address the effects of personality contextualization on the predictive validity of personality measures by means of a theoretical model. A brief overview (see Figure 1) with the specific research aims for each of these studies is presented graphically below.

Chapter 2 describes a study that investigated personality as a predictor of sales success. This chapter investigates whether specific sales performance criteria are best predicted by narrow, conceptually-related predictors and whether broad performance criteria are best predicted by the broad personality predictors (the Big Five) and the broadest personality predictor, the GFP.

Chapter 3 reports on a study that examined the predictive validity of the four facets of EI using samples of high and low emotional labor sales employees. Rather than relying solely on supervisor ratings, this study also includes an objective measure of sales results to measure sales performance. The incremental predictive validity of emotion regulation, above and beyond

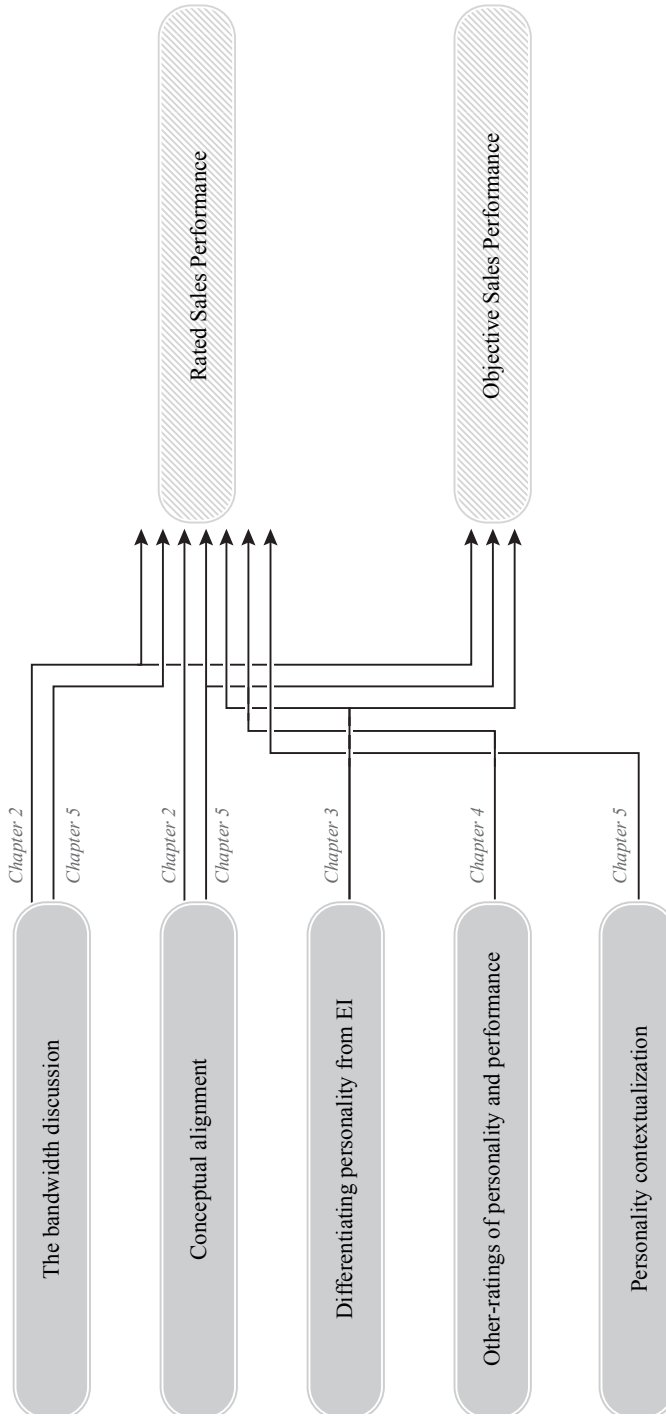
Big Five personality and cognitive ability, is investigated for sales performance in high and low emotional labor sales jobs.

Chapter 4 concerns a study on other- (peer-) ratings of personality that goes beyond the level of other FFM traits to the level of other-rated narrow facets. This study extends previous research by introducing the bandwidth-fidelity discussion into the research field of other-ratings of personality. We investigate which level of peer-ratings of personality (i.e. trait or facet level) shows the highest validity for job performance, while controlling for peer-ratings of performance.

Chapter 5 is a theoretical chapter that extends the previous research on contextualized personality or the Frame of Reference effect by focusing on the role that situations play in the relation between personality and the prediction of (job) performance. A model of linking personality predictors with job performance criteria is proposed in which the strength of the situation and trait activation by a FOR are of key importance in predicting work outcomes.

Finally, in **chapter 6** the findings of the different chapters are summarized and important theoretical and practical implications are discussed. Furthermore, in this chapter the limitations of the presented studies are discussed and suggestions for future research are made.

Figure 1.1: Visualization of the linkages between the studies in the present dissertation



Chapter 2

Predicting sales performance criteria with personality measures: The use of the General Factor of Personality, the Big Five and narrow traits¹



¹ This chapter was published as:

Sitser, T.B., Linden, D. van der & Born, M.Ph. (2013). Predicting six different sales performance criteria with personality measures: The use of the General Factor of Personality, the Big Five and narrow traits. *Human Performance*, 26(2), 126-149.

The study in this chapter was also presented at the 8th conference of the International Test Commission (ITC) Amsterdam, July 3-5, 2012.

ABSTRACT

The present study investigated the predictive validities of different hierarchical levels of personality for sales performance. The General Factor of Personality (GFP) was expected to be most effective at predicting general sales performance while the Big Five factors and its underlying narrow traits were expected to be most effective at predicting the specific sales performance criteria to which they are conceptually aligned. Six different sales performance measures were used in an international study involving 403 sales employees. The results suggest that GFP is a valid predictor of general job performance but that some of the aligned narrow personality traits predict specific sales performance above and beyond the Big Five factors. The narrow trait Social Boldness has a negative relation with rated sales performance and sales results.

INTRODUCTION

The relationship between personality and job performance has always been an important research topic in personnel psychology (Ghiselli, 1973; Guion & Gottier, 1965), yet personality has had a mixed reputation as a predictor of work outcomes. Several researchers have considered personality to be an ineffective predictor of performance (Davis-Blake & Pfeffer, 1989; Guion & Gottier, 1965; Mischel, 1985). Similarly, researchers like Morgeson, Campion, Dipboye, Hollenbeck, Murphy and Schmitt (2007), and Murphy and Dzieweczynski (2005) have stated that, in a selection context, personality has low predictive validity. Others, however, have confirmed that personality is measurable (e.g., Goldberg, 1993) and that it matters because it can add to the prediction of job performance (Judge & Erez, 2007; Barrick, Mount, & Judge, 2001; Ones et al., 2007; Tett & Christiansen, 2007). The main reason for their optimism is the development of a construct-oriented approach, leading to several major personality models that have guided researchers. The best known of these models is the Five Factor Model or the similar Big Five model, which consists of Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability (Digman, 1990; Goldberg, 1981; McCrae & Costa, 1999). Researchers using this Big Five model have consistently shown that personality predicts job performance, mental health and job satisfaction in a variety of jobs ranging from skilled and semiskilled workers (e.g., baggage handlers, production employees) to high level management jobs (Judge, Bono, Ilies, & Gerhardt, 2002; Barrick & Mount, 1991). Nevertheless, even with the Big Five model, the reported magnitude of these effects varies from low to modest at most, with observed effect sizes ranging from $r = .11$ (Barrick, Mount, & Judge, 2001) to $r = .37$ (Judge et al., 2002).

Despite the mixed support for personality as a predictor of performance, managers in many businesses and organizations habitually pay attention to the personality of their employees. Managers give almost the same weight to individual personality characteristics as to general mental ability or intelligence during their hiring decisions (Dunn, Mount, Barrick, & Ones, 1995). Thus, both in research and in practice, it is acknowledged that personality may have relevance for predicting job performance.

In trying to improve the predictive validity of personality, a relevant question is: Which level of personality measure is better, narrow or broad? So far, researchers have not been able to provide a conclusive answer to this question. The discussion about the value of narrow versus broad measures is often referred to as the 'bandwidth-fidelity discussion' (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996) or the 'fidelity-bandwidth trade-off' (Hogan & Roberts, 1996). Typical examples of narrow personality traits are the facets underlying the Big Five factors (e.g., Ashton, 1998; Hough, 1992; G. L. Stewart, 1999). In the bandwidth discussion, the Big Five are often considered broad traits. Nevertheless, some researchers have suggested that the Big Five do not necessarily represent the highest levels of personality and that there may be higher-

level personality factors (e.g., DeYoung, 2006; Digman, 1997; Musek, 2007; Rushton, Bons, & Hur, 2008). It remains an empirical question whether such higher-level factors, beyond the Big Five, provide good predictions of behavior. One specific higher-level factor that the present study takes into account is the General Factor of Personality or the GFP (Musek, 2007; Rushton et al., 2008; Van der Linden, Te Nijenhuis, & Bakker, 2010). For decades, the Big Five were assumed to be the most basic personality factors, meaning that they are orthogonal and reflect the highest meaningful interpretation of personality. Several researchers (e.g., DeYoung, 2006; Digman, 1997; Musek, 2007), however, noted that the Big Five consistently show intercorrelations, indicating possible higher-order factors. Based on these Big Five intercorrelations, Musek (2007) concluded that there is a general factor reflecting a combination of socially desirable personality traits. People scoring high on the GFP have been described as altruistic, emotionally stable, agreeable, conscientious, extraverted, and intellectually open, with high levels of well-being, satisfaction with life, self-esteem, and emotional intelligence (Musek, 2007; Rushton et al., 2008). The GFP has also been defined as a broad array of attributes that facilitate or inhibit personality-related success (Rushton et al., 2008; Rushton & Irwing, 2011; Van der Linden, Scholte, Cillessen, Te Nijenhuis, & Segers, 2010; Van der Linden, Figueredo, De Leeuw, Scholte, & Engels, 2012).

In the view described above, the GFP is considered to be a basic personality dimension occupying the top of the hierarchical factor structure of personality; thus it is the broadest personality trait possible. Indeed, several studies have confirmed that the GFP explains a substantial proportion of the Big Five variance (Musek, 2007; Rushton & Irwing, 2011; Van der Linden et al., 2010). We have to note, however, that currently there is an ongoing debate about the GFP. For example, it has been suggested that the GFP may not reflect much more than socially desirable response tendencies (Backström, Björklund, & Larssen, 2009) or methodological artifacts that occur due to the way personality is measured (Ashton, Lee, Goldberg, & De Vries, 2009; De Vries, 2011). Further, it has been proposed that the GFP found in different personality questionnaires may be inconsistent (De Vries, 2011; Hopwood, Wright, & Donnellan, 2011), which would make it difficult to give an interpretation of the GFP. Yet, several recent studies have shown that the GFP in different personality measures does have a large overlap (mean $r = .70$), suggesting that the GFP is consistent and may be present, independent of the personality questionnaire used (Loehlin & Martin, 2011a; Rushton et al., 2009; Van der Linden, Tsaousis, & Petrides, 2012; Van der Linden, Te Nijenhuis, Cremer, & van der Ven, 2011). Research has also proposed that the nature of the GFP depends on the method of factor analysis used or on the level of measurement (De Vries, 2011). However, GFPs extracted with different methods and from different levels often correlate between $r = .80$ to 1, thus suggesting that the presence of a GFP is independent of method used (e.g., Loehlin & Martin, 2011a, 2011b). All in all, the debate about the nature of the GFP continues and in order for it to be settled, additional empirical data on the topic is necessary.

Regarding this debate, it has been suggested that a broad measure such as the GFP may be a good and consistent predictor in many domains, including job performance (Van der Linden et al., 2010). The current controversy surrounding the GFP as a valid personality construct provides ample reason to include the GFP as a possible predictor of job performance in a field study. By taking into account the GFP as the broadest personality trait possible, we can provide valuable new insight into the ‘bandwidth-fidelity discussion’ (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996).

In contrast to researchers who focus on higher-order factors, others have suggested that lower-order facets, or so-called narrow personality traits, may increase validity regarding job performance (Ashton, 1998; Hough, 1992; Mershon & Gorsuch, 1988; Murtha et al., 1996; Stewart, 1999). Ones and Viswesvaran (1996) defined narrow personality traits as concrete traits (Allen and Ebbesen, 1981) with clear ‘behavioral connotations’. For example, the ‘Order’ sub-factor of Conscientiousness can be considered a narrow personality trait because it measures orderliness, which is a rather specific type of behavior. On the other hand, broad personality traits are defined by Ones and Viswesvaran (1996) as more inclusive, general and abstract variables. They consider each of the Big Five Personality factors to be a broad trait. Ones and Viswesvaran further suggest that personality can be described as a hierarchy of levels going from narrow (i.e., facets) to broad (i.e., Big Five). In our study we expand this hierarchy by adding the even broader personality measure of the GFP on top of the Big Five factors. Thus, our study contains three levels of personality measurement, where most, if not all, previous studies of personality bandwidth assessment contained only two (see also Table 1).

Table 1. *Bandwidth of the personality predictors and sales performance criteria*

Personality Trait	Bandwidth
GFP	Broadest bandwidth
Big Five Traits	Broad bandwidth
Specific Personality Traits	Narrow bandwidth
Job Performance Criteria	
General Job Performance	Broad bandwidth
Objective Sales Performance	Broad bandwidth
Specific Sales Performance	Narrow bandwidth

Another approach for improving the predictive validity of personality measures is conceptual *alignment*, which reflects a process in which personality constructs are linked with specific performance criteria. Campbell (1990) suggested an alignment strategy in which personality characteristics that underlie specific types of job performance are identified. For example, the narrow personality trait detail orientation, which reflects the tendency to focus on and check details thoroughly (e.g., G. L. Stewart, 1999), may underlie performance on administrative tasks in which it is important to be systematic and to work through detailed information thoroughly. Hogan and Holland (2003) found the predictive validity of personality to indeed increase when predictors and criterion measures were conceptually aligned. Similarly, Tett, Steele and Beauregard (2003) found that matching personality traits with specific criteria resulted in better predictions of performance.

Overview of the Present Study

In the present study we focus on personality as a predictor of sales success. In line with previous research (Mol et al., 2005), we investigate whether specific sales performance criteria are best predicted by narrow conceptually-related predictors and whether broad performance criteria are best predicted by the broad personality predictors (the Big Five) and the broadest personality predictor, the GFP. An asset of the present study is that we not only focus on the validities of different hierarchical levels of personality, but also take into account the alignment between personality and performance. Beyond that, our study extends previous research in this area in three ways.

First, five types of supervisor ratings were collected for *broad* sales performance and *specific* or narrow sales performance (Table 1). This enabled us to use Campbell's strategy (1990) of aligning personality predictors with job performance criteria that have a conceptually-related content. Second, we included an objective measure of productivity (Total New Customers) to measure performance, rather than relying purely on supervisor ratings that may be susceptible to bias (Salgado, 1997; Vinchur, Schippmann, Switzer, & Roth, 1998). We consider the objective productivity measure a broad measure because in order to attain new customers an employee must perform a broad range of tasks requiring numerous abilities. Third, we used two different personality measures. One personality measure (Big Five Inventory) to assess the broad personality factors (GFP and the Big Five), and another measure (Bridge Personality; Sitser, 2007) to assess the underlying narrow traits. Paunonen and Ashton (2001) suggested that using the same personality questionnaire to measure broad personality factors and their underlying traits may cloud the unique variance of narrow personality traits, as the higher-order factors are a linear combination of the underlying narrow personality traits. Using different personality tests to measure broad factors and narrow traits will prevent this mathematical effect from occurring.

In the present study, three levels of personality predictors, as well as two levels of job performance criteria, are organized from broad to specific (Table 1). By doing so, we add a job-performance dimension to the ‘bandwidth-fidelity’ discussion (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996; Hogan & Roberts, 1996). In this study we aim to align the broadest personality measure (GFP) with broad performance measures, the five broad personality measures with broad and narrow performance measures, and narrow personality traits with narrow job performance measures (Paunonen & Ashton, 2001).

Hypotheses

The hypotheses are arranged from broad to narrow personality predictors, and alignment is based on hierarchical level (all hypotheses) as well as on the content of the personality and performance measures (hypotheses 3, 4, and 5). We start with the hypothesis about the GFP and broad performance measures, followed by three hypotheses linking the broad Big Five measures and narrow personality traits to the conceptually-related sales performance criteria. The last two hypotheses compare the predictive validity of the different levels of measurement.

Recent research has shown that the predictive validity of a broad personality measure such as the GFP may benefit from predicting broad job performance constructs (Van der Linden, Te Nijenhuis et al., 2010). In addition, Ones and Viswesvaran (2005) have suggested that a general factor of performance may best be predicted with a broad personality measure. In line with the abovementioned findings, we expect the following:

Hypothesis 1: The GFP will show its highest predictive validity for broad job performance measures and will have a lower predictive validity for specific aspects of performance.

In our study, the first hierarchical level of personality lower than the GFP involves the Big Five. Numerous studies have already examined the predictive validity of the Big Five on job performance, which have resulted in several large meta-analyses (Barrick & Mount, 1991; Salgado, 1997; Hurtz & Donovan, 2000). In our study, the Big Five take an intermediate position, in the sense that they are obviously more specific than the GFP, but less specific than the narrow traits. As such, we expect that the individual Big Five dimensions may also show relationships with relatively broad performance measures. These expectations are based on previous studies that have found, for example, that Openness was an effective predictor of achieving a sales target (number of new customers; Furnham and Fudge, 2008). This finding suggests that employees describing themselves as change-oriented and as actively seeking new experiences are better equipped to attain new customers. In addition, Conscientiousness is often found to be the most important of the Big Five factors for predicting performance across many job performance criteria and occupational groups (Barrick & Mount, 1991; Salgado, 1997). We therefore hypothesize:

Hypothesis 2:

Of the Big Five factors:

a: Conscientiousness is the best predictor of General Job Performance

b: Openness is the best predictor of Total New Customers

In previous studies, the predictive validity of the Big Five was found to be dependent on the conceptual overlap with the outcome behavior. For instance, Openness, which is a propensity to search for new experiences, was found to predict turnover (Timmerman, 2006). This fits with the idea that high Openness causes a propensity to search for new experiences, which thereby increases the chance an employee will desire a new job. Another study found Conscientiousness, which reflects being organized and working hard, to predict academic performance (De Vries et al., 2010; Lievens et al., 2002). As for sales performance, Salgado (1997) and Hurtz and Donovan (2000) showed that, of the Big Five factors, Conscientiousness has the highest predictive validity. Both Barrick and Mount (1991) and Hurtz and Donovan (2000) showed that Extraversion was a predictor for sales performance. In addition, Vinchur, Schippmann, Switzer, and Roth (1998) found that Extraversion and Conscientiousness were the best predictors for both *objective* (sales figures) and *subjective* (ratings) measures of sales success. This suggests that sales employees who are talkative, energetic, assertive (Extraversion) and organized, thorough, and who plan their behavior (Conscientiousness) are more effective at achieving sales success. Agreeableness and Emotional Stability showed only minor relations or no relation at all to sales performance. However, unlike the present study, these previous studies did not predict specific aspects of sales performance.

The examples described above illustrate Campbell's (1990) alignment strategy, which links personality to conceptually-related job performance criteria. In accordance with this strategy, we used Subject Matter Experts (SMEs) to determine which of the Big Five factors could be aligned with the more specific aspects of sales performance (see Table 2 and Method section for details).

Table 2. Alignment of the broad and narrow personality traits with the specific sales performance criteria by the SMEs

Hypothesis	Criterion		Predictor	
	Job Performance	Bandwidth	Personality Trait	Bandwidth
5a	Achieving Sales Results	Narrow	Conscientiousness	Broad
5b	Administration	Narrow	Conscientiousness	Broad
5c	Customer Relationship Management	Narrow	Agreeableness	Broad
5d	Handling Customer Objections	Narrow	Emotional Stability	Broad
6a	Achieving Sales Results	Narrow	Proactivity	Narrow
6b	Administration	Narrow	Detail Orientation	Narrow
6c	Customer Relationship Management	Narrow	Consideration	Narrow
6d	Handling Customer Objections	Narrow	Consideration	Narrow

Based on the SMEs ratings we could formulate the following hypothesis:

Hypothesis 3:

Of the Big Five factors:

- a:* Conscientiousness is the best predictor of Achieving Sales Results
- b:* Conscientiousness is the best predictor of Administration
- c:* Agreeableness is the best predictor of Customer Relationship Management
- d:* Emotional Stability is the best predictor of Handling Customer Objections

The Subject Matter Experts (SMEs) also aligned the narrow personality traits to the specific sales performance criterion to which they have the most conceptual alignment (Table 2), leading to the following hypothesis:

Hypothesis 4:

Of the narrow personality traits:

- a:* Achievement Motivation is the best predictor of Achieving Sales Results
- b:* Detail Orientation is the best predictor of Administration
- c:* Consideration is the best predictor of Customer Relationship Management
- d:* Consideration is the best predictor of Handling Customer Objections

The hypotheses above mainly refer to the predictive validity *within* each personality level. However, a different approach is to compare the different levels of measurement regarding their predictive validity. From our reasoning above, it follows that, compared to narrow traits, we expect broad personality traits to be better predictors of broad performance measures and narrow personality traits to be better predictors of specific job performance criteria. Therefore, we can also formulate the following hypotheses:

Hypothesis 5a: The conceptually-aligned broad personality traits show higher predictive validity for broad job performance criteria than for the specific job performance criteria.

Hypothesis 5b: The conceptually-aligned narrow personality traits show higher predictive validity for specific job performance criteria than for the broad job performance criteria.

METHOD

Participants and Procedure

A total of 434 employees (61% male, 39% female, $M_{\text{age}} = 37.2, SD = 1.56$) of a large multinational insurance company were asked to participate. The employees were based in offices around the world. For privacy reasons, the participating company chose not to provide the office locations. The response rate was high (92%, $N = 403$), which was mostly due to obligatory participation for the respondents as part of a company-wide development program. Participants were rewarded with an automatically generated personality report. All participants were responsible for selling financial services to wealthy individuals, families and big businesses. Participants filled out an online survey consisting of two personality questionnaires, The Big Five Inventory (John & Srivastava, 1999) and the Bridge Personality (Sitser, 2007). As the corporate language of the participants' firm is English, the participants and managers completed all questionnaires in English. Completing the survey took approximately one hour.

The managers of the sales employees filled out an online survey measuring the different sales performance criteria. Managers were also asked to provide information on the objective sales result (Total New Customers in 2009). The managers spent about ten minutes completing a survey for each sales employee. The average manager provided ratings on 12 employees ($SD = 2.6$). The data was gathered over a period of three months in 2010.

Measures: Independent variables

Personality. In order to assess the participants' personality, two personality questionnaires were used. One questionnaire measured the Big Five factors (BFI: John & Srivastava, 1999) at the factor level only and the other questionnaire measured the Big Five factors based on thirteen

underlying narrow personality traits (The Bridge Personality; Sitser, 2007).

BFI. The Big Five Inventory (BFI; John & Srivastava, 1999) is a 44-item inventory designed to give a quick (10 minutes), reliable and valid overview of the candidates' scores on the Big Five factors. Each factor is measured with 10 to 12 items, answered on a five-point Likert scale (1 'strongly disagree', 5 'strongly agree'). Reliabilities of the five factors ranged from $\alpha = .72$ (Agreeableness) to $\alpha = .83$ (Emotional Stability, see Table 3).

Bridge Personality. Since the BFI does not measure narrow personality traits, we used a second personality questionnaire: The Bridge Personality (BP; Sitser, 2007) questionnaire contains 246 items in a 9-point Likert scales format (1 = very strongly disagree, 9 = very strongly agree) that make up 34 scales measuring the Big Five as well as additional occupational personality aspects. In the present study we only used the personality scales that underlie the Big Five factors. In the BP, the Big Five are measured with 13 scales. To confirm the construct validity of the Bridge Personality in the present sample, the thirteen traits were factor analyzed (PCA) to verify the underlying Big Five factor structure (see Table 3).

Table 3. Factor loading of the 13 Bridge Personality traits on the Big Five factors

	Narrow personality trait	O	C	E	A	ES
1.	Creativity	.63	.08	.55	.09	.09
2.	Entrepreneurial Focus	.68	.18	.54	-.07	.09
3.	Proactivity	.81	.16	.11	.22	.19
4.	Achievement Motivation	.38	.60	.24	.12	.26
5.	Detail Orientation	.21	.69	-.08	.25	.27
6.	Planfulness	.11	.86	.28	.05	.03
7.	Focus on Networking	.22	.12	.81	.22	.17
8.	Social Boldness	.19	.11	.79	.15	.26
9.	Social Focus	.21	.13	.58	.56	-.05
10.	Consideration	-.09	.07	.25	.81	.22
11.	Helpfulness	.29	.17	.04	.80	.11
12.	Stress Resistance	.41	.25	.17	.11	.75
13.	Positivity	.05	.15	.40	.44	.66

Note. O: Openness to Experience, C: Conscientiousness, E: Extraversion, A: Agreeableness, ES: Emotional Stability

Each personality factor contains two to three narrow traits. The Bridge Personality has convergent validity with the Big Five as measured with the BFI. The results in Table 4 indicate adequate convergent relations for the Bridge Personality Big Five scales with the corresponding personality scales from the BFI.

Table 4. Intercorrelations of the five BFI Factors (Big Five Inventory) and the Big Five as measured with the Bridge Personality (BP) questionnaire

	BFI				
	O (BFI)	C (BFI)	E (BFI)	A (BFI)	N (BFI)
BP					
Openness	.62**	.30**	.42**	.03	-.29**
Conscientiousness	.26**	.54**	.12	.13*	-.25**
Extraversion	.38**	.23**	.62**	.23**	-.32**
Agreeableness	.19**	.27**	.20**	.50**	-.30**
Emotional Stability	.35**	.43**	.40**	.31**	-.62**

Note. *Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

The Alpha reliabilities were adequate, ranging from $\alpha = .82$ for Agreeableness to $\alpha = .91$ for Extraversion and Openness (Table 5).

General Factor of Personality (GFP). The viability of the GFP in this sample was examined by extracting the first unrotated factor of the BFI (see also Van der Linden, Te Nijenhuis, et al., 2010; Van der Linden, Te Nijenhuis et al., 2011). We report the values of the Principal Factoring (PF) extraction method but also tested other extraction methods (Maximum Likelihood and Principal Component Analysis). However, this did not lead to different conclusions. The factor analyses showed that the first factor explained 48.4% of the Big Five variance. The eigenvalue was 2.24. The level of explained variance and eigenvalue of the first factor were more than twice as large as those of the second factor (21.2% and 1.1% respectively). Importantly, all Big Five factors loaded highly on the GFP, with loadings of .57, .74, .65, .67, and .83 for O, C, E, A, and ES respectively. Thus, a reliable GFP could be identified in the current sample. Although in the present study we used the GFP that is calculated from the BFI, for validation purposes we also calculated a GFP from the thirteen narrow Bridge Personality traits, as well as from the Bridge Personality Big Five factors. The correlation between the different GFPs was .60 ($p < .01$), indicating that these constructs are consistent and highly alike. The GFP score of the participants was obtained based on the product of the Big Five factor scores and their GFP factor loadings.

Measures: Dependent variables

Research literature suggests that job performance can be described as a hierarchy of multiple dimensions (Campbell, Gasser & Oswald, 1996). Ones et al. (2005) have suggested that on the top of this hierarchy, a general factor of Job Performance exists. In our study we use a performance measure from two different hierarchical levels. That is, we have four specific performance measures that involve a relatively limited set of behaviors, e.g., administrative tasks (*Specific Sales Performance*), and two broad performance measures that involve a broader range of tasks. The broad job performance measures are *General Job Performance* (similar to the one used in Ones et al. (2005)) and a broad objective measure of job performance.

General Job Performance. Supervisor-rated performance was measured with 9 items in a 5-point Likert scale ranging from *strongly disagree* to *strongly agree* (Ones, Viswesvaran, & Schmidt, 2005). These items measure Interpersonal competence, Administrative competence, Quality, Productivity, Effort, Job knowledge, Leadership, Communication competence, and Compliance/acceptance of authority and can be recalculated into a single score of general Job Performance. Ones et al. (2005) referred to this scale as a 'general factor of Job Performance'. The internal consistency of this scale in the present study is $\alpha = .86$ (see Table 3).

Specific Sales Performance. Supervisor-rated specific sales performance was measured with the sales job criteria as defined by the O*NET (O*NET, 2007) code 41-, Sales and Related. O*NET provides a broad, widely-used system for defining jobs. As the sales scope of the participants' job is broad and there is no specific O*NET code available for selling trust services and corporate financial planning services, the broader (41-, sales related) code was chosen. The specific O*NET criteria were transferred into a 12 item questionnaire, rated using a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. which measures Integrity, Dependability, Initiative, Stress Tolerance, Persistence, Attention to Detail, Self-control, Cooperation, Analytical Thinking, Independence, Achievement/Effort, Concern for Others, Adaptability/Flexibility, Innovation, Social Orientation, and Leadership. A principal components analysis (PCA) was performed on the scores of the items of the O*NET questionnaire with as criterion for factor extraction eigenvalue > 1 , and varimax rotation. This analysis revealed four factors that accounted for 65% of the variance. The first factor subsumed the questions about Initiative, Persistence, Independence, Achievement/Effort, and Leadership. All these questions related to the vigor in striving to achieve results, therefore we labeled this factor *Achieving Sales Results*. The second factor consists mainly of Cooperation, Concern for others and Social Orientation, which relate to the interpersonal aspects of sales. We labeled this factor *Customer Relationship Management*. The third factor comprised Integrity and Dependability, which relate to the operational aspects of sales, we labeled this factor *Administration*. The fourth factor subsumed Stress Tolerance and Self-control dealing with challenges and resistance from customers during sales situations. We labeled this factor *Handling Customer Objections*. Internal consistencies in this sample ranged from $\alpha = .87$ (Achieving Sales Results) to $\alpha = .75$ (Customer Relationship Management).

Table 5. Means, Standard Deviations and observed correlations of the Predictors and the job performance criteria

	Number of items		Dependent and Independent Variables											
	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	
1. Age	4.31	1.56	-	-	-	-	-	-	-	-	-	-	-	-
2. Gender	0.46	0.50	-	.08	-	-	-	-	-	-	-	-	-	-
3. GFP (BFI)	0.00	0.87	-	.28*	-	-	-	-	-	-	-	-	-	-
4. Openness (BFI)	3.61	0.51	2.20-4.90	10	.11	.20*	.54*	.73	-	-	-	-	-	-
5. Conscientiousness (BFI)	37.56	4.79	2.44-5.00	9	.31**	-.04	.68**	.27**	.79	-	-	-	-	-
6. Extraversion (BFI)	3.58	0.62	2.00-5.00	8	.10	.08	.65**	.44*	.25**	.74	-	-	-	-
7. Agreeableness (BFI)	4.07	0.51	2.67-5.00	9	.20**	-.08	.60**	.11	.46**	.20*	.72	-	-	-
8. Emotional Stability (BFI)	2.33	0.73	1.00-4.38	8	.26**	.13*	.90**	.31**	.51**	.44*	.50**	.83	-	-
9. Consideration	51.63	5.93	6.97-7.69	7	-.05	-.07	.34**	.13*	.17**	.19**	.45**	.29**	.74	-
10. Helpfulness	49.80	5.80	6.22-7.53	7	.19**	.03	.35**	.21**	.30**	.17**	.43**	.25**	.54**	.74
11. Creativity	43.50	8.63	5.93-6.56	7	.06	.11	.32**	.57**	.15*	.33**	-.01	.19**	.25**	.29**
12. Detail Orientation	45.97	7.48	5.16-7.13	7	.09	-.03	.24**	.13*	.44**	.01	.11	.18**	.25**	.32**
13. Focus on Networking	44.97	8.38	5.64-7.59	7	.04	.02	.44**	.37**	.22**	.53**	.23**	.29**	.38**	.34**
14. Stress Resistance	46.54	8.09	6.65-7.00	7	.21**	.13*	.56**	.33**	.43**	.30**	.22**	.56**	.27**	.37**
15. Entrepreneurial Focus	43.36	8.10	5.59-7.24	7	.20	.19**	.39**	.55**	.24**	.38**	-.04	.25**	.09	.24**
16. Planfulness	47.14	6.90	6.01-7.50	7	.08	-.16**	.22**	.13*	.40**	.05	.08	.14*	.20**	.27**
17. Positivity	49.75	6.50	6.53-7.67	7	.12	-.20	.56**	.28**	.32**	.43**	.33**	.52**	.54**	.47**
18. Achievement Motivation	49.11	5.65	6.22-7.47	7	.12*	.01	.42**	.40**	.44**	.26**	.13*	.29**	.20**	.36**
19. Social Focus	46.80	7.44	6.13-7.03	7	.06	.02	.37**	.25**	.17**	.51**	.24**	.21**	.47**	.44**
20. Social Boldness	45.06	7.81	5.91-6.96	7	.04	.02	.46**	.37**	.20**	.58**	.14*	.33**	.34**	.31**
21. Proactivity	47.89	7.83	6.60-7.16	7	.20**	.14*	.46**	.46**	.39**	.36**	.14*	.30**	.21**	.35**
22. Rating: General Job Performance	35.36	4.68	3.00-5.00	9	.18**	.02	.20**	.10	.22**	.13*	.14*	.13*	.01	.13*
23. Rating: Achieving Sales Results	3.71	0.58	3.53-3.96	7	.20**	.07	.14*	.12	.14*	.12	.01	.10	-.12	.03
24. Rating: Customer Relationship Management	3.88	0.55	3.63-4.13	5	-.01	-.03	.11	.00	.02	.05	.18**	.13*	.10	-.00
25. Rating: Administration	4.11	0.56	3.88-4.28	3	.20**	-.05	.17**	.08	.25**	.05	.17**	.11	-.01	.12
26. Rating: Handling Client Objections	3.75	0.71	3.71-3.79	2	.01	.05	.04	-.05	-.01	-.10	.15*	.20	.10	-.01
27. Objective Sales Result (Total New Clients 2009)	1.40	0.75	-	-	.05	.15**	.20**	.28**	.12	.19**	-.02	.16*	.02	-.01

Note. Reliabilities are reported in the diagonal

*Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

Table 5 (Continued). Means and Standard Deviations of the Predictors and the Job performance criteria

		Dependent and Independent Variables															
		12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.
1.	Age																
2.	Gender																
3.	GFP (BFI)																
4.	Openness (BFI)																
5.	Conscientiousness (BFI)																
6.	Extraversion (BFI)																
7.	Agreeableness (BFI)																
8.	Emotional Stability (BFI)																
9.	Consideration																
10.	Helpfulness																
11.	Creativity																
12.	Detail Orientation	.83															
13.	Focus on Networking	.24**	.85														
14.	Stress Resistance	.42**	.40**	.85													
15.	Entrepreneurial Focus	.26**	.61**	.47**	.81												
16.	Planfulness	.41**	.31**	.38**	.37**	.77											
17.	Positivity	.33**	.52**	.55**	.34**	.31**	.76										
18.	Achievement Motivation	.43**	.44**	.52**	.57**	.48**	.46**	.69									
19.	Social Focus	.25**	.59**	.31**	.40**	.27**	.49**	.38**	.82								
20.	Social Boldness	.21**	.71**	.44**	.53**	.33**	.50**	.41**	.54**	.75							
21.	Proactivity	.36**	.38**	.52**	.55**	.32**	.35**	.55**	.39**	.40**	.82						
22.	Job Performance Rating (General)	.16*	.02	.18**	.09	.09	.06	.16**	.09	-.02	.25**	.86					
23.	Achieving Sales Results	.20	.01	.17**	.15*	.08	-.01	.16**	.01	-.03	.25**	.78**	.87				
24.	Customer Relationship Management	.03	.02	.09	-.00	-.00	.10	-.01	.06	-.09	-.02	.56**	.45**	.75			
25.	Administration	.27**	-.11	.17**	.01	.12*	.05	.15*	.03	-.09	.21**	.76**	.58**	.39**	.75		
26.	Handling Customer Objections	.03	-.03	-.01	-.02	.00	.01	-.04	-.04	-.16*	-.04	.41**	.30**	.49**	.31**	.76	
27.	Objective Sales Result (Total New Customers 2009)	.02	.15*	.14*	.26**	.00	-.02	.12	.09	.04	.17**	.21**	.22**	.09	.17**	.13*	-

Note. Reliabilities are reported in the diagonal

*Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

Determining conceptual predictor-criterion alignment

Ten Subject Matter Experts (SMEs) were asked to align both a Big Five trait and a narrow personality trait to a narrow sales performance criterion. The SMEs ($n = 10$) had received either their doctorate ($n = 5$) or Master of Science degree ($n = 5$) and all were industrial–organizational psychologists experienced in personality questionnaire validation research. The SMEs were given definitions for the sales performance criteria and the personality constructs and were asked to choose only one personality construct for a sales performance criterion (Campbell, 1990). Table 2 shows the outcome of this alignment strategy; criterion classification was based on the absolute level of rater agreement, i.e., 70%.

Objective sales performance. From the supervisors we obtained data regarding the number of Total New Customers that the sales employees attained in 2009. We considered this to be a broad performance measure because in order to attain new customers an employee must perform a broad range of tasks that require numerous abilities.

Statistical Analyses

We used four different methods to test the hypotheses: correlations, standard regression, hierarchical regression analyses and relative weight analysis (RWA; Johnson, 2000). Regression analyses were conducted for each of the personality levels separately to examine which of the levels leads to the highest amount of explained variance in predicting the different performance criteria. Hierarchical regression was used to determine the incremental validity of the 13 Bridge Personality traits above and beyond the Big Five factors of the BFI for each of the six performance criteria. To study the relative contribution of the personality variables within each hierarchical level (i.e., Big Five, narrow traits) we performed relative weight analyses. Unlike hierarchical regression analysis, RWA determines the relative importance of each predictor to the criterion by considering the unique contribution of each predictor plus the contribution of each predictor in combination with the other predictors (Johnson, 2000; LeBreton & Tonidandel, 2008).

RESULTS

Observed correlations and descriptive statistics for the background variables, the personality predictors and the job performance criteria are reported in Table 5.

Hypothesis 1 stated that the broad measure of the GFP will show its highest predictive validity for broad job performance measures and lower predictive validities for specific aspects of performance. Table 5 shows that the GFP had significant and positive correlations with the two broad performance measures, General Job Performance ($r = .20, p < .01$) and Total New Customers ($r = .20, p < .05$). The correlations between the GFP and the specific performance measures were lower, ranging from $r = .17 (p < .01)$ for Administration to $r = .04, (n.s.)$ for Handling Customer Objections. To test whether the correlations between the GFP and the

broad criterion measures were indeed different from the correlations with the narrow criterion measures we conducted a series of Hotelling's t-tests. These tests showed that the correlation between the GFP and the broad measure General Job Performance was indeed significantly higher than the correlation between the GFP and three of the four specific sales criteria. Only the GFP-Administration correlation did not significantly differ from the GFP-general job performance correlation ($t = .56$, n.s.). These results partly support our first hypothesis that the GFP has the highest predictive validity for broad performance measures.

Hypothesis 2a stated that, at the Big Five level, General Job Performance is most optimally predicted by Conscientiousness, which was confirmed: Of the Big Five factors, Conscientiousness had the highest β value ($\beta = .18$, $p < .05$) for General Job Performance, which was a significantly stronger relation ($t = 3.45$, $p < .05$) than the highest correlating non-aligned Big Five factor, Agreeableness ($\beta = .08$, n.s.). Hypothesis 2b was also confirmed: Of the Big Five factors, Openness was a significantly stronger predictor ($t = 4.18$, $p < .05$) of Total New Customers ($\beta = .22$, $p < .01$) than the highest correlating non-aligned Big Five factor, Emotional Stability ($\beta = .10$, n.s.).

Hypothesis 3 stated that, based on the predictor-criterion alignment of the SMEs, each of the specific sales performance criteria is most optimally predicted by the Big Five factor to which it is conceptually aligned. Hypothesis 3a stated that Achieving Sales Results is most optimally predicted by Conscientiousness. Table 6 displays the Big Five and performance relationships. Conscientiousness indeed had the highest β value for Achieving Sales Results, however, this relation was only marginally significant ($\beta = .13$, $p < .08$). A Hotelling's t-test showed that the Achieving Sales Results-Conscientiousness correlation indeed was significantly higher than the highest non-aligned Big Five-performance correlation (i.e., Achieving Sales Results-Openness $t = 3.85$, $p < .05$), (see Table 8). Hypothesis 3b stated that Administration is most optimally predicted by Conscientiousness, which was confirmed ($\beta = .23$, $p < .01$). The Administration-Conscientiousness correlation differed significantly from the highest correlating non-aligned Big Five factor, Agreeableness ($t = 3.26$, $p < .05$).

Hypothesis 3c stated that Customer Relationship Management is most optimally predicted by Agreeableness. This is confirmed by the results ($\beta = .18$, $p < .05$). The Customer Relationship Management-Agreeableness correlation was significantly higher than the highest correlating non-aligned Big Five factor, Emotional Stability ($t = 2.16$, $p < .05$). Hypothesis 3d stated that Handling Customer Objections is most optimally predicted by Emotional Stability. This was partly confirmed by the results, as Emotional Stability had the highest β value (.16, $p < .05$). However, this was not significantly stronger ($t = .22$, n.s.) than the highest correlating non-aligned Big Five factor, Agreeableness ($\beta = .15$, $p < .05$). Hypothesis 4a stated that, of the narrow traits, Achieving Sales Results is most optimally predicted by Proactivity, which was confirmed ($\beta = .25$, $p < .01$). This correlation was significantly higher than any of the other correlations between Achieving Sales Results and the narrow personality traits ($t = 4.66$, $p < .05$, see Table 8).

Hypothesis 4b stated that Administration is most optimally predicted by Detail Orientation. This was also confirmed by the results. Of the narrow personality traits, Detail Orientation had the strongest correlation with Administration ($\beta = .25, p < .01$), but this was only marginally significantly stronger than the correlation with the highest non-aligned narrow trait, Proactivity ($t = 4.66, p < .10$). Hypothesis 4c stated that Customer Relationship Management is most optimally predicted by Consideration. This was not confirmed by the results, as Stress Resistance had a higher, marginally significant relationship with Customer Relationship Management ($\beta = .11, n.s.$). Hypothesis 4d stated that Handling Customer Objections is most optimally predicted by Consideration. This result was confirmed by the results ($\beta = .20, p < .05$). The Handling Customer Objections-Consideration relation was significantly different from the highest correlating non-aligned narrow personality trait, Networking ($t = 2.48, p < .05$).

Hypothesis 5a stated that the conceptually-aligned broad personality traits showed higher predictive validity for their conceptually-aligned broad job performance criteria than for their specific performance criteria. This hypothesis was rejected because the predictive validity of Conscientiousness was significantly higher ($t = 4.45, p < .05$) for Administration ($\beta = .23, p < .01, rw = 57.9\%$) than for General Job Performance ($\beta = .18, p < .05, rw = 43.3\%$). On the other hand, hypothesis 5a was confirmed for Openness, which showed its only predictive validity for the broad performance measure Total New Customers ($\beta = .22, p < .05, rw = 47, 6\%$). This validity was significantly higher ($t = 5.66, p < .05$) than the validity of the second strongest relationship with a specific sales performance criterion, Achieving Sales Results ($\beta = .06, n.s.$).

Hypothesis 6 stated that the conceptually aligned narrow personality traits show higher predictive validity for their conceptually aligned specific job performance criteria than for the broad performance criteria. Proactivity was a significant predictor for Achieving Sales Results ($\beta = .25, p < .01$), which was in line with expectations. Contrary to our expectations, however, Proactivity displayed about the same predictive value for General Job Performance ($\beta = .24, p < .01$). Thus, Proactivity turned out to be a predictor of different levels of performance measures. Detail Orientation was a significant predictor for the aligned specific sales performance criterion Administration ($\beta = .19, p < .01, rw = 29.1\%$), but not for any of the other broader performance indicators. Consideration was a significant predictor for Handling Customer Objections, but not for any of the broad performance criteria. Thus, two of the four narrow personality traits particularly showed predictive validity for conceptually aligned specific job performance criteria but not for other criteria. Therefore, hypothesis 6 was only partly confirmed.

We also considered it informative to examine the incremental validities of the aligned narrow personality traits above and beyond the Big Five factors (Table 7) and the partial correlations between the Big Five factors and the performance criteria while controlling for the GFP (Table 9). These tests are based on the assumption that the scores on lower-order measures of personality, by definition, are partly due to the influence of higher-order factors. After controlling for the Big Five factors, we found that Proactivity remained a significant predictor for Achieving Sales Results

Table 6. Results of the regression (for each personality level) and relative weight analyses (for the Big Five and the narrow facets)

Variables	GJP			ASR			CRM			ADMIN			HCO			TNC		
	β	rw	R ²	β	rw	R ²	β	rw	R ²	β	rw	R ²	β	rw	R ²	β	rw	R ²
GFP	.20**		.04**	.14*		.02	.11		.01	.17**		.03	.04		.00	.20**		.04
Big Five Factors			.07*	.06*		.06*			.05			.07*			.06*			.10**
Openness	.03	4.9%		.06	9.6%		-.02	3.5%		.05	7.3%		-.01	8.9%		.22**	47.6%	
Conscientiousness	.18*	43.3%		.13	41.7%		-.10	7.3%		.23**	57.9%		-.11	7.7%		.06	7.0%	
Extraversion	.08	19.7%		.06	36.2%		.01	5.2%		-.02	0.6%		-.17*	25.2%		.07	15.5%	
Agreeableness	.06	19.3%		-.08	3.8%		.18*	58.7%		.09	30.4%		.16*	37.9%		-.14	19.5%	
Emotional Stability	.04	12.0%		.03	4.3%		.09	25.8%		-.05	3.9%		.15	20.3%		.10	10.4%	
Narrow facets			.11**				.13**		.07			.16**		.08*				.14**
Creativity	.03	3.2%		-.02	2.8%		.02	4.0%		.03	4.4%		-.05	4.2%		.12	16.8%	
Entrepreneurial Focus	-.09	2.4%		.04	14.8%		.03	2.3%		-.09	10.1%		.11	3.2%		.20	22.6%	
Proactivity	.24**	27.7%		.25**	27.3%		-.06	3.7%		.18*	12.8%		.00	1.8%		.08	6.5%	
Achievement Motivation	.03	6.4%		.04	17.0%		-.09	3.4%		.05	5.0%		-.06	2.2%		.00	3.8%	
Detail Orientation	.04	7.7%		-.01	2.4%		-.03	1.9%		.19**	23.6%		.01	4.4%		.03	0.8%	
Planfulness	.01	10.2%		.02	1.5%		-.00	1.4%		.04	2.9%		.04	1.5%		.08	2.7%	
Focus on Networking	-.02	10.7%		.03	9.7%		.09	5.6%		-.19*	10.4%		.13	6.4%		.14	8.8%	
Social Boldness	-.21*	8.0%		-.19*	5.8%		-.31**	30.1%		-.14	7.2%		-.35**	40.2%		-.23*	8.1%	
Social Focus	.09	4.3%		.03	1.4%		.08	6.2%		.08	2.2%		-.03	4.1%		.09	6.9%	
Consideration	-.10	1.9%		-.17*	9.8%		.04	6.7%		-.09	1.6%		.20*	21.8%		.06	6.2%	
Helpfulness	.07	4.9%		.02	1.6%		.08	11.6%		.07	3.0%		-.08	3.1%		.15	3.1%	
Stress Resistance	.12	10.8%		.14	9.9%		.15	14.3%		.11	7.9%		.07	2.4%		.12	7.5%	
Positivity	-.02	1.7%		-.04	3.2%		.08	9.0%		.04	9.1%		.02	3.6%		.14	6.4%	

Note. GJP = General Job Performance; ASR = Achieving Sales Results; CRM = Customer Relationship Management; ADMIN = Administration; HCO = Handling Customer Objections; TNC = Total New Customers; GFP = General Factor of Personality. * Correlation is significant at the .05 level (one-tailed). ** Correlation is significant at the .01 level (one-tailed).

($\beta = .28, p < .01$) and Detail Orientation remained a significant predictor for Administration ($\beta = .24, p < .01$). However, beyond the Big Five, Consideration no longer emerged as a significant predictor of Handling Customer Objections. After controlling for the GFP, the partial correlation between Conscientiousness and General Job Performance ($r = .12, p < .ns.$) was no longer significant. Conscientiousness remained significantly correlated with Administration ($r = .20, p < .05$), and Agreeableness remained correlated with Handling Client Objections ($r = .18, p < .05$), and Openness with Total New Clients ($r = .21, p < .05$).

Table 7. Alignment of the broad and narrow personality traits with the specific sales performance criteria by the SMEs, the β values and the Hotelling's t values

Hypothesis	Criterion		Predictor			
	Job Performance	Bandwidth	Personality Trait	Bandwidth	β	Hotelling's t
5a	Achieving Sales Results	Narrow	Conscientiousness	Broad	.13	3.85*
5b	Administration	Narrow	Conscientiousness	Broad	.23*	3.26*
5c	Customer Relationship Management	Narrow	Agreeableness	Broad	.18*	2.16*
5d	Handling Customer Objections	Narrow	Emotional Stability	Broad	.15	ns.
6a	Achieving Sales Results	Narrow	Proactivity	Narrow	.25**	4.66*
6b	Administration	Narrow	Detail Orientation	Narrow	.19**	ns.
6c	Customer Relationship Management	Narrow	Consideration	Narrow	.04	ns.
6d	Handling Customer Objections	Narrow	Stress Resistance	Narrow	.20*	2.48*

Note: Hotelling's t values are calculated by testing the significant difference between the relation of the sales performance criteria with the aligned personality traits and the highest correlation nonaligned personality trait. *Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

Table 8. Incremental predictive validity of the 13 Bridge Personality facets above and beyond the Big Five scales from the BFI for General Job Performance (GJP), Achieving Sales Results (ASR), Customer Relationship Management (CRM), Administration (ADMIN), Handling Customer Objections (HCO) and Total New Customers (TNC)

		GJP	ASR	CRM	ADMIN	HCO	TNC
		BFI	BFI	BFI	BFI	BFI	BFI
Big Five Factor							
1.	Openness	.02	.07	-.05	.04	-.03	.20*
2.	Conscientiousness	.16*	.13	-.13	.21**	-.10	.07
3.	Extraversion	.09	.08	-.01	-.04	-.17*	.05
4.	Agreeableness	.09	-.05	.19*	.10	.15*	-.11
5.	Emotional Stability	.01	-.03	-.10	.01	.16*	.12
Bridge Personality Trait							
1.	Creativity	.12	.04	.07	.15	-.04	.19
2.	Entrepreneurial Focus	-.06	.07	.07	-.08	.13	.17
3.	Proactivity	.22*	.28**	-.04	.17*	.04	.03
4.	Achievement Motivation	.06	.08	-.01	.05	-.03	-.04
5.	Detail Orientation	.07	.05		.24**	.10	-.02
6.	Planfulness	.06	.11	.11	.07	.17*	-.10
7.	Focus on Networking	-.03	.01	.07	-.27**	.16	.14
8.	Social Boldness	-.34**	-.35**	-.43**	-.24*	-.39**	-.34**
9.	Social Focus	-.01	-.09	.04	.04	-.04	.11
10.	Consideration	-.09	-.15	.00	-.15	.13	.07
11.	Helpfulness	.07	.02	.07	.04	-.13	-.12
12.	Stress Resistance	.04	.06	.04	.09	-.01	.03
13.	Positivity	-0.1	-.15	.05	-.07	-.09	-.24*

* Correlation is significant at the .05 level (one-tailed). ** Correlation is significant at the .01 level (one-tailed).

Thus, it appears that several specific Big Five factors remain significant predictors beyond the GFP mainly when their overlap with the behavior in the criterion is large, as, for example, in Conscientiousness and administrative behavior, which both imply working carefully.

Table 9. Partial correlations between the Big Five Personality scales and the performance criteria (corrected for the GFP)

		GJP	ASR	CRM	ADMIN	HCO	TNC
Big Five Factor							
1.	Openness	-.03	.06	-.03	-.01	-.07	.21**
2.	Conscientiousness	.12	.04	-.09	.20**	-.06	-.02
3.	Extraversion	.07	.06	-.03	.11	-.19	.09
4.	Agreeableness	.05	-.10	.14	.10	.18**	-.18
5.	Emotional Stability	.13	.08	-.06	.10	-.14	.05

Note. *Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

DISCUSSION

This study examined the predictive validities of three levels of personality measures on two levels of job performance criteria. *Both* the personality predictors and the job performance criteria were organized from broad to specific. In doing so, we extended previous research on personality bandwidth by examining predictors as well as criterion measures on different levels of specificity and broadness (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996). This approach yielded significant results for both the broadest personality factor (GFP), the Big Five factors, and the narrow personality traits.

The use of the GFP as a predictor of performance in sales jobs

In the literature there is a debate about the theoretical and practical value of the GFP. Some researchers have suggested that this construct is a substantive one (Musek, 2007; Rushton & Irwing, 2011; Van der Linden et al., 2010a; 2010b), whereas others have argued that it mainly reflects methodological or statistical artifact (Anusic et al., 2009; Ashton, Lee, Goldberg, & De Vries, 2009; De Vries, 2011). Many issues regarding this construct still have to be resolved. Nevertheless, while the debate is ongoing we found it useful to examine whether a GFP was present in our dataset and whether it was related to the outcome variables. The results showed that there indeed was a relatively large general factor explaining almost half of the variance in the Big Five and on which each of the Big Five dimensions showed considerable factor loadings that were in line with theory. Moreover, the GFP in this study was rather effective at predicting the two broadest performance measures, namely General Job Performance and Total New Customers. In fact, for predicting Total New Customers, an objective job performance measure, the GFP, outperformed most of the Big Five factors and all of the narrow personality traits. This would indicate that sales employees who are 'altruistic, emotionally stable, agreeable, conscientious, extraverted, and intellectually open, with high levels of well-being, satisfaction with life, self-esteem and emotional intelligence' (Musek, 2007, p. 125) are better able to attain

new customers. This is in line with previous claims that individuals who score high on the GFP have a social advantage. For example, van der Linden et al. (2010) found that high GFP adolescents were perceived to be more likeable and more popular by peers. A similar social advantage may have also helped the sales employees to bring in more new customers.

Van der Linden et al. (2010) have already shown that the GFP may be an effective predictor of performance in a range of jobs, yet the current study shows that the GFP is also a useful predictor of sales results. This finding may have implications for the use of personality questionnaires in selecting sales employees, as sales results are often considered to be an important part of sales performance. As Ones and Viswesvaran (1996) have suggested, the complexity or dimensionality of a predictor should match the dimensionality of the criterion to optimize accuracy in prediction. If the goal is to focus on overall performance and to select sales employees who attain more customers and perform well on other important job aspects (e.g., supervisor ratings), using only the Big Five factors may not generate the optimal result; calculating a GFP score in a personality report might be considered.

Overall, the GFP was a good and significant predictor of General Job Performance. However, when predicting narrow performance measures its predictive validity was somewhat lower than that of narrow traits like Proactivity and Social Boldness. The benefit of using the GFP to predict sales performance, however, becomes visible in its consistency as the only valid predictor of *both* the sales performance ratings by supervisors and the sales results obtained from objective data. Those involved in sales employee selection may therefore benefit from using a GFP score if their goal is to predict ratings *and* results.

The use of Big Five factors as predictors of performance in sales jobs

Of the Big five factors, supervisor-rated General Job Performance was most effectively predicted by Conscientiousness, which is in line with many previous studies (e.g., Barrick & Mount, 1991). However, in the present study the number of new customers attained was best predicted by Openness. This latter finding fits with earlier results from Furnham and Fudge (2008). They found that Openness predicted sales target achievement (consisting of the number of new customers) for sales employees in the fitness industry. However, our finding was not fully in line with an earlier meta-analytic finding by Vinchur et al. (1998), who found Conscientiousness to be the best predictor of performance ratings and an objective sales criterion, while Openness was not a significant predictor. A possible reason for this may be that in a meta-analysis data from different studies are cumulated. Such studies use different questionnaires to measure the Big Five factors and use different criteria measures to tap into the same construct (i.e., sales performance). Hogan (2005) suggested that this technique of averaging personality and performance scores may hide meaningful true relations between personality factors and performance criteria in a specific job. In our study, which used one personality questionnaire to measure Conscientiousness and Openness and measured one objective sales criterion (Total New

Customers), Openness clearly outperformed Conscientiousness as a predictor of objective sales results. Two of the Big Five factors showed their highest criterion-related validity for the sales performance criteria to which they were conceptually aligned according to the Subject Matter Experts. Conscientiousness was an effective predictor of Administration and Agreeableness was an effective predictor of Customer Relationship Management.

The use of narrow traits as predictors of performance in sales jobs

We found clear indications that narrow traits indeed best predict those narrow performance measures with which they were conceptually aligned. More specifically, we found that Achieving Sales Results is most optimally predicted by Proactivity, which measures behaviors such as 'action initiation' and 'self-starting'. A link between these types of behaviors and sales results is in line with earlier findings by Vinchur et al. (1998) and Warr (2005). As expected, Administration was most optimally predicted by Detail Orientation. Finally, Handling Customer Objections was best predicted by Consideration, which seems plausible as considerate employees can be expected to be better able to perceive and deal with customers' feelings during complaints.

Regarding the comparison between the different measurement levels, we expected an increase in the predictive validity of the narrow personality traits when the narrowness of the job performance criterion increased. This expectation was partly confirmed by the results. The only exception was that Proactivity turned out to be not only a significant predictor of Achieving Sales Results but also of General Job Performance, one of the broader job performance constructs.

An interesting ad-hoc finding in our study was that the narrow personality trait with the single highest *negative* predictive validity for several job performance criteria was Social Boldness. This narrow trait measures courage and bravery in social situations. This bravery, however, could be perceived by others as arrogance. In their study of 'dark traits' and the derailing or negative effect these traits may have on leadership performance, Hogan and Hogan (2001) found that 'Boldness', a trait that has a strong overlap with Social Boldness in our study, was a strong predictor for 'derailment' or counterproductive behavior in leadership. Thus, those with high scores on Boldness may be perceived by others as 'ego-centered', thereby making it a 'dark trait'. In our study we found that Social Boldness has the same negative effect on the job performance criteria. This indicates that sales employees who are perceived as arrogant may be less effective in handling customer relationships and less able to deal with their customers' objections. Employees who scored higher on Social Boldness also attained fewer new customers ($\beta = -.23, p < .01$). This would suggest that a high score on Social Boldness may have a direct negative effect on both sales ratings and sales results.

As to the predictive value of narrow personality traits above and beyond the Big Five personality factors, both Proactivity and Administration were effective predictors of Achieving Sales Results and Administration respectively, after controlling for the Big Five. This suggests that practitioners of personnel selection should consider using these narrow traits for selecting sales employees, as they clearly take variance into account that is not explained by the broader Big Five factors.

Although the present results may contribute to the debate about personality bandwidth and conceptual alignment, two limitations should be pointed out. First, although the GFP turned out to be a good predictor of job performance, we acknowledge that there may be other combinations of Big Five or facet scales that predict a higher percentage of variance across job performance measures. However, such a sample-based mix of personality traits would not necessarily reflect the same construct as the theoretical higher-order construct of the GFP. Thus, while tailor-made combinations of traits or facets may sometimes be useful in selection from a practical point of view, they may not have the benefit of being backed up by substantive personality theories and may therefore be less consistent and interpretable over different studies. Second, the present results were based on an international sample of employees responsible for selling trust services and corporate financial planning. As this is a specific type of sales work, one should be cautious about generalizing these results to other, more typical sales jobs.

Practical Implications for personnel selection

Overall, our study provides insights that can be put into practice in four different ways. First, scoring the GFP in a personality questionnaire may be useful for selecting sales employees, as this construct predicted attaining new customers as well as supervisor-rated overall performance. Second, although Conscientiousness is often considered to be the best Big Five predictor of job performance, practitioners who have to select sales employees might also want to take Openness into account. Openness predicted objectively measured sales success, whereas Conscientiousness did not. Third, when selecting employees for relatively narrow sales tasks, one might want to carefully align personality traits to the designated task. Fourth, although an ad hoc finding, Social Boldness appears to be negatively related to supervisor-rated sales performance and sales results, indicating that selection practitioners should use caution when sales employees score high on this narrow trait.

CONCLUSION

The present results show that using a GFP score may be useful for selecting sales employees when the goal is to predict overall sales performance ratings as well as objective results. If one wants to select personnel for rather specific and more restricted tasks, such as dealing with customers or doing administrative work, then the use of more narrow measures may be better. Depending on the nature of these specific tasks, either using Big Five dimensions or narrow traits should depend on careful alignment between the content of the trait (either Big Five or narrower) and the content of the job to be done. Finally, being too socially bold may actually be a disadvantage for some sales jobs.

Chapter 3

The incremental predictive validity of emotion regulation in high emotional labor sales jobs¹

3



¹ This chapter was submitted for publication as:

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The study in this chapter was also presented at the 16th congress of the European Association of Work and Organizational Psychology, Münster, Germany, May 2013.

ABSTRACT

The present study investigates the predictive validity of four facets of emotional intelligence on sales ratings and sales results in high- and low emotional labor sales work. The facet emotion regulation was expected to be incrementally valid for predicting sales performance, but only in high emotional labor sales work. None of the EI facets were expected to effectively predict sales performance in low emotional labor jobs. Big Five personality, cognitive ability, emotional intelligence, sales ratings and sales results were measured in a sample of low ($N = 403$) and a sample of high ($N = 105$) emotional labor sales employees. The results suggest that emotion regulation effectively predicts objective sales results but not sales ratings and only in high emotional labor sales work.

INTRODUCTION

During the past two decades, emotional intelligence has been studied thoroughly. According to Mayer, Salovey and Caruso (2002, p.139), emotional intelligence (EI) is “a type of social intelligence that involves the ability to monitor one’s own and others’ emotions, to discriminate among them, and to use this information to guide one’s thinking and actions”. Goleman (1998, p. 34) even suggests that, “for star performance in all jobs, in every field, emotional competence is twice as important as purely cognitive abilities”. Some researchers have questioned such statements because the predictive validity of EI could not be established easily (Joseph & Newman, 2010; Newsome & Day, 2000). Other researchers however found substantial predictive validity for EI (O’Boyle, Humphrey, Pollack, Haver & Story, 2010).

In the EI model, as defined by Mayer and Salovey (1997), EI is broken down into emotion perception, emotion facilitation, emotion understanding, and emotion regulation (Mayer and Salovey, 1997). Emotion perception refers to “the ability to identify emotions in oneself and others, as well as in other stimuli, including voices, stories, music, and works of art” (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006, p. 781). Emotion facilitation is defined as the ability to use emotion in a variety of contexts to facilitate the attainment of goals (Mayer & Salovey, 1997). Emotion understanding is defined as the ability to understand how emotions evolve over time, how emotions differ from each other and which emotion is most appropriate for a given context (Mayer & Salovey, 2000) and emotion regulation is “the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (Gross, 1998, p. 275).

In a recent meta-analysis, Joseph and Newman (2010) have attempted to improve the predictive validity of EI by developing and testing a so-called cascading model in which these EI facets are put in a cascading order and where only the EI facet of emotion regulation should have a direct relation with job performance. Thus, it is assumed by Joseph and Newman (2010) that this regulating facet of EI in particular plays a role in the adaptive behavior that is characteristic of emotionally intelligent individuals. Consequently, it would also be this facet of EI that has the strongest link with outcomes such as job performance. The cascade model implies a progressive (cascading) pattern among EI facets, in which emotion perception causally precedes emotion understanding, which in turn precedes emotion regulation.

Moderating effect of high and low emotional labor

Although the meta-analytic data of Joseph and Newman (2010) provided support for the idea that emotion regulation was preceded by the other EI facets, they also found that the criterion-related validity of emotion regulation for job performance initially was low ($r = .08$). In an attempt to improve this validity, the authors conducted a post-hoc analysis of the relationship between emotion regulation and job performance by splitting their data into two theoretically distinct subpopulations based on the level of emotional labor requirements of the job. They distinguished between samples consisting of employees in high emotional labor jobs and low emotional labor jobs. They made the distinction between high and low emotional labor in terms of the frequency of interpersonal interaction, with high-emotional labor defined by frequent interaction and low emotional behavior by infrequent interaction. In doing so, they found that, compared to the low emotional labor sample, emotion regulation was more predictive of job performance in the high emotional labor sample. The presumed reason for this effect was that occupations in which there is frequent interpersonal interaction (i.e., high emotional labor) require more emotion regulation (Grandey, 2000; Wong & Law, 2002). However, the effects of emotion regulation in high emotional labor jobs still turned out to be moderate (max, $r = .17$). One possible explanation for the modest size of this effect is that the high emotional labor sample used in the study consisted of a group of employees with many different jobs instead of a group of employees with the same type of job who consistently engage in the same type of high emotional labor on a daily basis. Therefore, the authors ended their article by emphasizing the preliminary nature of their evidence in favor of both the cascading model of EI and of emotional labor as a moderator of the EI-performance relationship. They also stressed that their results have yet to be replicated in a field study that takes all of these EI-variables into account in one design. Similarly, in a more recent meta-analysis on the relationship between EI and job performance, O'Boyle et al. (2011, p. 807) stressed that "researchers may want to focus on the contribution that EI plays in jobs requiring emotional labor and interactions with customers". Joseph and Newman (2010) already provided some preliminary evidence on this issue, but they also concluded that "more research needs to be done on this topic" (p. 807).

In the present study we do so. More specifically, we have conducted a field study comparing a sample of sales employees who engage in high emotional labor and a group of sales employees who engage in low emotional labor. To our knowledge, such a study has not been conducted before and it may thus provide a useful contribution to current EI research.

Incremental validity of EI above and beyond personality and cognitive ability

Another issue regarding EI involves the incremental criterion-related validity of EI in relationship to other well-known predictors such as personality and general intelligence. Some researchers questioned whether, in organizational contexts EI has any incremental validity

beyond personality traits (Landy, 2005; Locke, 2005; Murphy, 2006; cf. Van Rooy & Viswesvaran, 2004). This has led to a debate regarding the potential for EI measures to incrementally predict job performance above and beyond personality. This debate has been labeled as the 'fadification' of EI (Murphy & Sideman, 2006). Joseph and Newman (2010) support critics' claims that models of EI exhibit significant overlap with Big Five personality traits. Although they found that EI has some incremental validity over personality, the amount is so small that the practical use of EI measures in predicting job performance may not outweigh the time and costs involved in using the required questionnaires. Further, although some researchers have argued that EI explains variance in job performance that is not explained by cognitive intelligence (Mayer & Salovey, 1997; Goleman, 1998; Mayer, Salovey, & Caruso, 2000), other researchers have suggested that EI is related to overall cognitive ability or *g*. Therefore, it has also been questioned whether EI has incremental validity beyond cognitive ability (Landy, 2005; Locke, 2005; Murphy, 2006; cf. Van Rooy & Viswesvaran, 2004). Joseph and Newman (2010) did not test the incremental predictive validity of the four separate EI facets above and beyond Big Five personality and cognitive ability. Therefore, in this study, we will also investigate the predictive validity of emotion regulation above and beyond Big Five personality and cognitive ability.

EI as a predictor of Sales Performance

Based on the notion that EI for a large part involves the interaction with others, this construct may be particularly predictive for performance in sales jobs (Weitz, Castleberry, & Tanner 2001) as sales employees need to cope effectively with the diverse needs of customers during interaction with customers. Furthermore, because sales employees must acquire skills that will allow them to secure and maintain buyer-seller relationships profitably (Churchill et al., 1985; Weitz, Sujan, & Sujan, 1986), it has been suggested that EI is critical to effective selling (Goleman, 1998; Weitz, Castleberry, & Tanner, 2001). Based on the notion that emotion regulation is the facet of EI that predicts job performance in high emotional labor (Joseph & Newman, 2010), we expect that sales employees in high emotional labor jobs should particularly benefit from this EI facet. Currently, however, there is only a limited amount of EI research that focuses on the sales context and, to our knowledge, the predictive validity of emotion regulation for sales performance in high emotional labor has not been studied before. Thus, it is still unclear whether emotion regulation is a valid predictor of sales performance at all.

The present study will test whether emotion regulation predicts sales performance in high emotional labor sales jobs but not in low emotional labor sales jobs. In the original EI model by Mayer and Salovey (1997), four sub-dimensions were distinguished. The facet emotion facilitation however, was excluded from the cascading model by Joseph and Newman (2010) due to its redundancy with the other EI facets and its lack of empirical support. Nevertheless, as the original EI model (Mayer & Salovey, 1997) has four facets, we decided to maintain all four facets in our study.

It is also relevant to note that in their meta-analysis, Joseph and Newman (2010) only included studies using supervisor-rated job performance as a criterion. Regarding this, a particular asset of the present study is that we expand this criterion domain by including an objective job performance criterion. In the past, in an attempt to increase the predictive value of personality measures, researchers have successfully used objective job performance indicators (Vinchur & Schippmann, 1998). One of the reasons for using objective job performance indicators is that correlations among subjectively rated dimensions of job performance may potentially be inflated by effects, such as the halo effect (Ones, Schmidt, & Viswesvaran, 2005). By using objective measures of job performance, this problem may be overcome. In sales jobs the use of objective outcome measures is considered very useful and feasible (Churchill, Ford, Hartley, & Walker, 1985; Crant, 1995; Conte & Gintoff, 2005; Furnham & Fudge, 2008).

Overview of the present study

Overall, our study extends previous research in three ways. First, we test the predictive validity of the four facets of EI using high and low emotional labor sales employees. Second, rather than relying solely on supervisor ratings, this study also includes an objective measure of sales results to measure sales performance. Third, we test the incremental predictive validity of emotion regulation, above and beyond Big Five personality and cognitive ability for sales performance in high and low emotional labor sales jobs. To our knowledge, this has not been done before.

HYPOTHESES

In line with previous work of Joseph and Newman's (2010) as described above, we expected that, of the four EI facets, only emotion regulation has an effect on sales performance. However, this effect may be moderated by the level emotional labor (Grandey, 2000; Wong & Law, 2002). We therefore expect that the relationship between emotion regulation and performance in low-emotional labor jobs is non-significant or otherwise significantly lower than in the high-emotional labor condition. Following this line of reasoning, we hypothesize:

Hypothesis 1a: In high emotional sales jobs, of the four facets of EI, only emotion regulation has a significant effect on sales performance.

Hypothesis 1b: In low emotional sales jobs, none of the four EI facets has significant predictive validity for sales performance.

Previous research suggested that the overall EI construct overlaps with personality traits (Conte, 2005; Daus & Ashkanasy, 2003; Van Rooy, Dilchert, Viswesvaran, & Ones, 2006) as well

as with cognitive ability (Mayer, 2000). However, such research did not test the incremental validity of the separate EI facets. As emotion regulation is hypothesized to be the only significant predictor of sales performance, and only in high emotional labor jobs, it may be that mainly this EI facet will add predictive value to cognitive ability and personality. We therefore hypothesize:

Hypothesis 2: Of the four EI facets, only emotion regulation has incremental validity when controlling for personality traits and cognitive ability in high emotional sales jobs.

METHOD

Participants and Procedure

High and Low emotional labor in the present study: customer interaction frequency

In the present study 508 sales employees participated. These sales employees were engaged in either relatively low emotional labor (financial sales agent; $N = 403$) or high emotional labor (direct sales employees; $N = 105$). The sample of low emotional sales labor consisted of sales employees (61% male, $M_{\text{age}} = 37.2$, $SD = 1.56$) from a large insurance company. Note that this sample of 403 sales employees is the same sample as reported in Sitser, Van der Linden, and Born (2013) and as described in chapter 2 of this dissertation. However, the Sitser et al. (2013) article addressed different research questions which were unrelated to EI. Moreover, in the present study we used the outcomes of two measures that were not reported in Sitser et al. (2013), namely the Bridge Ability Suite (Testgroup, 2007) and the Wong and Law Emotional Intelligence Scale (Wong & Law, 2002; see the measure section below). The response rate was 92% ($N = 403$), which was probably due to the fact that participation was obligatory for the respondents as part of a company-wide development program. Participants had the same sales job and were responsible for selling trust services and corporate financial planning services. In this sample, sales employees served a limited number of clients and this type of sales work consists of low frequency client contact.

The sample of high emotional labor sales employees consisted of a total of 105 employees (41% male, $M_{\text{age}} = 24.2$, $SD = 2.61$) from different organizations. The response rate was 52%. The participants were working in sales jobs where they were responsible for selling consumer products to many different clients on a daily basis.

The distinction between high and low emotional labor was based on two methods. First, we used the theory of Hochschild (1983) and Morris and Feldman (1996), who suggested that jobs differ in the frequency in which employees interact with customers and that this frequency determines the amount of emotional labor needed in a job. A sales employee at a call center may interact with many customers per hour, which is assumed to require more emotional labor than a lawyer at a legal firm who only interacts with one client per day. This separation in high and low emotional labor jobs is in line with Joseph and Newman's (2010) definition, who

defined high emotional labor as ‘occupations in which there is frequent customer/ interpersonal interaction’ and low emotional labor as ‘occupations in which there is infrequent interpersonal interaction’. Second, ten Subject Matter Experts (SMEs) were asked to rate the two samples (job profiles) on the amount of emotional labor needed for the job. The SMEs rated the job profiles on 5 items designed by Wong and Law (2002) and based on the Hochschild (1983) characteristics of jobs with a high degree of emotional labor. The items were rated on a ‘Likert’ scale, ranging from 1 (unimportant) to 5 (very important). The SMEs ($n = 8$) had a doctorate ($n = 6$) or Master of Science degree ($n = 2$) and all were industrial-organizational psychologists experienced in personality questionnaire validation research. The average rated emotional labor score was 3.4 for the high emotional labor job profile and 2.5 for the low emotional labor profile, thus confirming the higher emotional demands on in the high emotional labor sample.

Participants filled out an online survey consisting of three measures: The Big Five Inventory (John & Srivastava, 1999), the Wong and Law Emotional Intelligence Scale (Wong & Law, 2002), and the Bridge Ability Suite (TestGroup, 2007), which assesses general intelligence. It took each participant approximately two hours to complete the survey. All participants completed the cognitive ability test first, followed by the personality questionnaire and the WLEIS.

The managers of the sales employees filled out an online survey that measured the employees’ sales performance. The participating organizations were also asked to provide information on the objective sales results (total new customers in 2009) of the participants. For each sales employee, it took the managers about ten minutes to complete a survey. The data were gathered over a period of three months in 2010.

Measures: Independent variables

BAS. The Bridge Ability Suite (BAS: TestGroup, 2007) is a cognitive ability measure consisting of three separate tests that measure abstract ability, numerical ability and verbal ability. The BAS has 75 items in total ($\alpha = .70$ for low emotional labor employees and $\alpha = .72$ for high emotional labor employees). The BAS has construct validity with the APM (Raven, Raven, & Court, 2003) and predictive validity for level of education (Sitser, 2010).

BFI. The Big Five Inventory (BFI: John & Srivastava, 1999) is a 44-item inventory designed to give a quick (10 minutes), reliable and valid overview of the candidates’ scores on the Big Five factors. Each factor is measured with 10 to 12 items. Items can be answered on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The reliabilities for the five factors range from $\alpha = .71$ (Agreeableness and Openness) to $\alpha = .83$ (Emotional Stability) for low emotional labor employees and from $\alpha = .66$ (Agreeableness) to $\alpha = .80$ (Extraversion) for high emotional labor employees.

WLEIS. The Wong and Law Emotional Intelligence Scale (WLEIS: Wong & Law, 2002) is a self-report measure of EI. Specifically, the WLEIS is a measure of beliefs concerning self-emotional appraisal (SEA) (e.g., “I have a good sense of why I have certain feelings most of the time”), others’

emotional appraisal (OEA)(e.g., “I always know my friends’ emotions from their behavior”), regulation of emotion (ROE) (e.g., “I always set goals for myself and then try my best to achieve them”), and use of emotion (UOE) (e.g., “I am able to control my temper and handle difficulties rationally”). The WLEIS consists of 16 items divided into four subscales with four items for each scale. Reliabilities range from $\alpha = .78$ (utilization of emotion) to $\alpha = .89$ (emotion regulation) for low emotional labor employees and from $\alpha = .64$ (utilization of emotion) to $\alpha = .77$ (all other subscales) for high emotional labor employees. The four dimensions of the WLEIS (self-emotion appraisal, others-emotion appraisal, emotion regulation, and utilization of emotion) are comparable with the four EI facets that were originally labeled by Mayer et al. (1999) as emotion perception, emotion facilitation, emotion understanding and emotion regulation. The WLEIS items consist of 5-point Likert-type scales, ranging from 1 (totally disagree) to 5 (totally agree). Previous research has found support for the underlying four-factor structure, as well as for the reliability and convergent and discriminant validity of the WLEIS scores (Law et al., 2004; Law, Wong, Huang, & Li, 2008; Shi & Wang, 2007; Wong & Law, 2002). The WLEIS scores have also been shown to be valid for predicting life satisfaction, academic performance, job performance, and job satisfaction (Song et al., 2010; Law et al., 2008; Wong & Law, 2002).

Measures: dependent variables

General Job Performance. Supervisor-rated performance was measured with a 9-item questionnaire from Ones, Viswesvaran, and Schmidt (2005). The specific items on this measure assess interpersonal competence, administrative competence, quality, productivity, effort, job knowledge, leadership, communication competence and compliance/acceptance of authority. The scores on these items were rated on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree*. The scores on the 9 items have been shown to represent a general factor of job performance (Ones et al., 2005).

Objective sales performance. From the participating organizations we obtained data regarding the sales results of the sales employees during 2009. The sales results are the revenue numbers per sales employee. To be able to compare the objective sales results per company, the different objective sales results were transformed into z-scores per company.

Statistical Analyses

In this study, we used three statistical methods to test the hypotheses: standard regression, hierarchical regression analysis, and relative weight analysis (RWA: Johnson, 2000; LeBreton & Tonidandel, 2008). Analyses of the EI facets were conducted in the low and high emotional labor samples in order to examine which of these facets explains the largest amount of variance when predicting performance. The use of RWA may be particularly useful in this study because, unlike regression analysis, RWA determines the relative importance of each predictor by considering its

Table 1. Means, standard deviations, minima – maxima and number of items of the predictors and the job performance criteria

	Mean	SD	Min-Max	Number of items	Dependent and Independent Variables														
					1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1 Age	31.55	1.56	20.0-55.0	1	-	-.08	-.15	.38**	.08	-.03	-.10	-.25**	.06	-.02	.19*	.00	.07	-.27**	-.18
2 Gender	-	-	-	1	.09	-	.00	.13	.03	.15	.24**	-.16*	.17*	.23**	-.06	-.22**	.00	.04	-.07
3 Openness (BFI)	3.61	.51	2.20 - 4.90	10	.11	.21**	-	-.12	.20*	.01	-.07	.02	.26**	.32**	.12	.14	.33**	.04	.15
4 Conscientiousness (BFI)	4.17	.53	2.44 - 5.00	9	.31**	-.04	.25**	-	-.02	.04	.08	-.10	.12	-.16*	.48**	.00	.22**	-.03	.14
5 Extraversion (BFI)	3.58	.62	2.00 - 5.00	8	.10	.09	.44**	.22**	-	.11	-.37**	-.01	.17*	.07	.29**	.00	.26**	-.13	.12
6 Agreeableness (BFI)	4.58	.57	2.67 - 5.00	9	.20**	-.09	.10*	.47**	.19**	-	-.19*	.00	.10	.21**	.13	.14	.25**	.07	-.03
7 Emotional Stability (BFI)	2.33	.73	1.00 - 4.38	8	-.26**	-.14*	-.31**	-.50**	-.43**	-.50**	-	-.20*	.00	.29**	-.20*	-.41**	-.24**	.15	-.03
8 Bridge Ability Suite	10.04	3.01	2.67 - 17.67	75	-.16**	.08	.03	-.01	.06	.01	.01	-	-.12	-.24**	.00	.05	-.10	.07	.05
9 Emotion perception	4.38	.58	2.00 - 5.00	4	.23**	-.06	.35**	.44**	.34**	.35**	-.38**	.06	-	.23**	.15	-.08	.49**	.02	.05
10 Emotion understanding	4.11	.65	2.00 - 5.00	4	.08	-.08	.27**	.21**	.25**	.24**	-.17**	.00	.42**	-	-.05	.11	.44**	.08	.00
11 Emotion facilitation	4.31	.59	2.50 - 5.00	4	.26**	-.07	.41**	.52**	.26**	.26**	-.38**	-.01	.53**	.33**	-	.16*	.63**	.02	.13
12 Emotion regulation	4.13	.78	1.75 - 5.00	4	.20**	.07	.26**	.38**	.22**	.49	-.68**	-.01	.41**	.27**	.41**	-	.62**	-.07	.24**
13 Emotional Intelligence Total	4.23	.55	0.00 - 5.00	16	.25**	.00	.39**	.48**	.32**	.41**	-.52**	-.04	.68**	.54**	.70**	.67**	-	.02	.22**
14 Job Performance Rating (General)	3.93	.52	2.56 - 5.00	9	.17**	.06	.09	.17**	.11*	.11*	-.10**	.09	.08	.06	.10*	.09	.10*	-	.27**
15 Objective Sales Result	0.00	1.00	-1.88 - 4.82	1	.04	.17**	.22**	.10	.14**	-.01	-.12*	.02	.07	.05	.15**	.07	.12*	.19**	-

Note. High emotional labor sample; above the diagonal, low emotional labor sample; below the diagonal

Reliabilities are reported in the diagonal. *Correlation is significant at the .05 level (1-tailed). **Correlation is significant at the .01 level (1-tailed)

unique contribution plus its contribution in combination with the other predictors. Thus, it compares each of the possible combinations of overlap between predictors and, based on these combinations, empirically determines how much a specific predictor contributes to the total explained variance. With this relatively new method (Johnson, 2000) it is possible to further explore the contribution of the EI facets in the prediction of sales performance. The incremental predictive validity of emotion regulation and the other three EI facets for sales performance is analyzed by controlling for cognitive ability and personality in hierarchical regression analysis and relative weight analysis.

RESULTS

Correlations and descriptive statistics for the study variables are reported in Table 1 for the low and high emotional labor samples separately. This table shows that, in sample 1, older participants received higher management ratings ($r = .17, p < .01$) and that male participants achieved higher sales results ($r = .16, p < .01$). In sample 2, young participants received higher management ratings ($r = .27, p < .01$) and achieved higher sales results ($r = .18, p < .01$).

Because of these relationships between gender and age and the main variables in our study, we decided to control for gender and age. Hypothesis 1a stated that in the high emotional sales jobs, of the four facets of EI, only emotion regulation has a significant effect on sales performance. In support of this hypothesis, we found that in the high emotional labor sample emotion regulation was the only significant predictor, but only for the objectively measured sales results ($B = .24, p < .01$) and not for supervisor-rated sales performance ($B = -.11, n.s.$). In this sample, the total amount of explained variance in objective sales performance (R^2) was 11.3%, of which 45.6% could be accounted for by emotion regulation ($rw = 45.6\%$). Therefore, hypothesis 1a was partly confirmed.

Hypothesis 1b stated that in low emotional labor none of the four EI facets is significantly related to sales performance. In the low emotional labor sample, however, we found emotion facilitation to be a significant predictor of objective sales results ($B = .20, p < .01, rw = 37.1\%$). The other EI facets were not significant. It has to be emphasized however that the total amount of explained variance for objective sales results in the low emotional labor sample was relatively small 2.3%. From this amount of explained variance, emotion facilitation accounted for 37.1%. The findings were not in accordance with hypothesis 1b, as one of the EI facets (emotion facilitation) turned out to be a significant predictor in the low emotional labor sample.

Table 2. *Low emotional labor and high emotional labor*

Variables	GJP	RW	Sales: Results	RW
Low Emotional Labor		R = .037		R=.023
Step 1				
Age	.17**	62.60%	.03	0.90%
Gender	.04	8.50%	.16**	52.60%
R2				
Step 2				
Emotion perception	.01	4.80%	.16	4.10%
Emotion understanding	.03	4.30%	.02	2.40%
Emotion facilitation	.05	11.30%	.20**	37.10%
Emotion regulation	.04	8.60%	.02	2.90%
High Emotional Labor		R = .037		R = .113
Step 1				
Age	-.27**	81.20%	-.18*	33.40%
Gender	.04	0.40%	-.07	3.10%
R2				
Step 2				
Emotion perception	-.01	0.30%	.08	3.60%
Emotion understanding	.10	7.40%	-.04	0.50%
Emotion facilitation	.10	3.80%	.12	13.80%
Emotion regulation	-.11	6.90%	.24**	45.60%

Note. GJP: General Job Performance, RW: Relative Weights. Predictive validity of total EI construct for sales ratings and objective sales results: low emotional labor sample ($\beta = .09$, n.s.), high emotional labor sample ($\beta = .03$, n.s.).

Table 3. β and rw values for age, cognitive ability, Big Five personality factors and the four EI facets on general job performance and sales results in the low emotional labor sample

	General Job	General Job	Sales:	Sales:
	Performance	Performance	Results	Results
	β	RW	β	RW
R2		.07		.08
Step 1				
Age	.17**	32.10%	.03	0.40%
Gender	.04	3.50%	.16**	25.10%
ΔR^2	.03		.28*	
Step 2				
BAS	.14*	14.60%	.13	0.20%
ΔR^2	.02		.00	
Step 3				
Openness (BFI)	.01	3.20%	.18**	32.30%
Conscientiousness (BFI)	.15*	21.20%	.06	5.10%
Extraversion (BFI)	.07	8.40%	.06	9.40%
Agreeableness (BFI)	.06	6.20%	-.09	3.20%
Emotional Stability (BFI)	.06	2.30%	-.05	5.70%
ΔR^2	.03		.06**	
Step 4				
Emotion perception	-.05	1.40%	-.06	1.80%
Emotion understanding	.01	1.30%	.00	1.10%
Emotion facilitation	-.01	3.20%	.12	14.20%
Emotion regulation	.04	2.60%	-.04	1.60%
ΔR^2	.00		.01	

Note: Predictive validity of total EI construct objective sales results ($\beta = .14^*$, $p < .05$)

Table 4. β and rw values for age, cognitive ability, Big Five personality factors and the four EI facets on general job performance and sales results in the high emotional labor sample

	General Job Performance	General Job Performance	Sales: Results	Sales: Results
	β	RW	B	RW
R2		.12		.19
Step 1				
Age	-.27**	53.40%	-.18*	24.40%
Gender	.04	0.40%	-.07	3.00%
ΔR^2	.07**		.04	
Step 2				
BAS	.08	3.60%	.02	0.80%
ΔR^2	.01		.00	
Step 3				
Openness (BFI)	.04	1.00%	.11	6.60%
Conscientiousness (BFI)	.06	2.40%	.28**	17.10%
Extraversion (BFI)	-.09	12.30%	.11	9.20%
Agreeableness (BFI)	.11	4.50%	-.04	1.50%
Emotional Stability(BFI)	.16	9.50%	-.00	2.90%
ΔR^2	.04		.10**	
Step 4				
Emotion perception	.02	0.50%	.05	1.20%
Emotion understanding	.10	4.20%	-.06	0.80%
Emotion facilitation	.13	4.00%	-.03	3.20%
Emotion regulation	-.09	4.40%	.30**	29.30%
ΔR^2	.02		.06	

Note: Predictive validity of total EI construct for objective sales results ($\beta = .24^{**}$, $p < .01$).

The second hypothesis stated that in high emotional sales jobs, emotion regulation has incremental predictive validity above and beyond personality traits and cognitive ability. In the regression analysis in which we controlled for personality and cognitive ability, emotion regulation was not a significant predictor of any of the sales criteria in the low emotional labor sample in both the standard regression analysis (Table 2) and the hierarchical regression analysis (Table 3). However, even after controlling for cognitive ability and personality, emotion regulation remained a significant predictor of sales results ($\beta = .30^{**}$, $p < .01$, $rw = 29.4\%$) in the high emotion labor sample. The total amount of explained variance (R^2) by age, gender

cognitive ability, Big Five personality and the four EI facets was 19% in the high emotional labor sample. Emotion regulation accounted for 5% of the total variance in predicting objective sales performance. As emotion regulation did have incremental validity over cognitive ability and personality in predicting objectively measured sales performance but not for supervisor-rated sales performance, hypothesis 2 was partly confirmed.

DISCUSSION

The current study sought to clarify the effectiveness of emotion regulation in predicting supervisor-rated sales performance and objective sales results both in a high and in a low emotional labor sample. To increase the predictive validity of EI for sales performance, three assets were used in this study. First, we tested the hypothesis that only the facet emotion regulation predicts job performance (Joseph & Newman, 2011), in this case, sales performance. Second, two samples of sales employees were used, a sample with low emotional labor sales jobs and a sample with high emotional labor sales jobs. Third, we obtained supervisor-rated sales performance as well as objectively measured sales results.

The theory of the cascading model of EI suggests that any predictive validity of EI is mainly due to emotion regulation (Joseph & Newman, 2010). Therefore, we expected that particularly emotion regulation would have predictive validity for sales performance, but only in the high emotional labor sample. The results confirmed this expectation; emotion regulation was indeed the only facet that showed predictive validity for sales performance and only in the high emotional labor sample. Not in line with our expectations, however, was the finding that emotion facilitation also showed predictive validity for sales results in the low emotional sample. This effect was not very robust though because it did not show incremental validity above and beyond personality and cognitive ability. The fact that emotion facilitation did have a direct, but not incremental effect in the present study may be less puzzling, however, when one considers the nature of the scales and items of this facet. For example, one of the 16 items on the WLEIS (Wong & Law, 2002; emotion facilitation facet) is, "I always set goals for myself and then try my best to achieve them". Thus, candidates who describe themselves as trying to achieve goals, and therefore score higher on emotion facilitation, get higher ratings on sales performance in this sample.

The finding that emotion regulation only showed predictive validity for objective sales results, and not for supervisor-rated sales performance, is in line with previous research by Vinchur and Schippman (1998), who reported that an objective measure of sales performance increased the explained variance between personality and sales performance (Salgado, 1997; Vinchur, Schippmann, Switzer, & Roth, 1998). On the other hand, this result was not in accordance with research by Joseph and Newman (2010), who found that emotion regulation *did* predict supervisor-rated job performance in high emotional labor jobs. Previous research suggests

that the extent to which certain emotion regulation processes are effective in predicting job performance may differ, depending on the job. Thus, some jobs may require more emotion regulation than other jobs (Brotheridge & Grandey, 2002; Brotheridge & Lee, 2002; Côté, 2005; Diefendorff & Gosserand, 2003; Goldberg & Grandey, 2007; Grandey, 2003; Grandey et al., 2005). In our study, which uses a sample of high emotional labor sales employees, emotion regulation effectively predicted objective sales results but not supervisor-rated sales performance. A possible explanation for this effect may be that sales employees working in high emotional labor sales jobs have many different clients for which the emotion regulation process would need to be adapted many times in order to achieve actual sales results. Thus, if the goal is to get better sales results, the ability to adapt one's emotion regulation may be especially effective.

The predictive validity of emotion regulation above and beyond cognitive ability and personality

Although research has suggested that EI (Law, Wong, & Song, 2004; Mayer, Roberts, & Barsade, 2008) or its four facets (Mayer & Salovey, 1997) predict job performance, research also suggests that EI overlaps with personality traits (Conte, 2005; Van Rooy, Dilchert, Viswesvaran, & Ones, 2006) and with cognitive ability (Mayer, 2000).

However, to our knowledge, the incremental predictive validity of emotion regulation above and beyond cognitive ability and Big Five personality has not been tested before. The present study was therefore the first to test the incremental validity of this facet. It was expected that in high emotional sales jobs the EI facet of emotion regulation would continue to have predictive validity after controlling for Big Five personality and cognitive ability. This expectation was confirmed; the predictive validity of emotion regulation on objective sales performance even slightly increased after controlling for cognitive ability and personality in the hierarchical regression, thus suggesting a unique portion of variance that predicts sales results and does not overlap with personality or cognitive ability. Emotion regulation showed no incremental predictive validity for supervisor-rated sales performance but this was of course due to the fact that emotion regulation did not predict this measure of performance in the first place.

Overall, the findings regarding incremental validity do not fully support the findings of Joseph and Newman (2010), who suggested that "measures of ability EI show only a modicum of incremental validity over cognitive ability and personality" (p.69). In the present study, emotion regulation accounted for 6.5% of the total variance in predicting objective sales performance, which would make it a robust predictor of job performance (Schmidt & Hunter, 1991). A possible reason for these contradictive findings may be that in the Joseph and Newman (2010) study different samples were used. While they used a meta-analytic sample consisting of many different jobs, the present study uses a sample of sales employees. Thus, one possibility is that emotion regulation is more important in sales work compared to other jobs, and it may be specifically

important for achieving actual sales results and less important for getting a positive rating from a supervisor.

Besides the main outcomes regarding emotional intelligence, another interesting finding in this study is that cognitive ability is a significant predictor of supervisor-rated sales performance, but not for objectively measured sales performance, in both independent samples of employees. Apparently, sales employees who score higher on cognitive ability get higher ratings from their supervisors, even though they do not actually sell more.

This finding is interesting because one would expect that objective sales results are a large component of a supervisor's rating of a sales employee. Yet, previous research supports the idea that this is not necessarily the case. For example, Verbeke, Belschak, Bakker, and Dietz (2008) found that cognitive ability does not predict objectively measured sales results. In addition, a meta-analysis of sales jobs by Vinchur and Schipmann (1998) showed that cognitive ability predicts supervisor-rated sales performance but does not predict objective sales results. Therefore, if the purpose is to select employees who will achieve high sales results, emotion regulation may a good additional or maybe even an alternative measure to cognitive ability.

Limitations and Future Research Directions

The present study has some limitations. First, the low and high emotional labor samples may have differences, which may have affected the results and implications of the study. Although the differences between the samples were partly addressed by controlling for age in this study, the nature of the samples prohibited us from controlling for other sample differences (e.g., number of organizations and jobs included).

Second, this study only used one EI measure. Recent meta-analyses (O'Boyle et al., 2011; Joseph & Newman, 2010) show that self-rated measures of EI, like the WLEIS, may measure a different EI construct compared to performance ability measures of EI. In performance ability measures of EI, participants perform EI tasks and thus do not provide self-ratings of their EI. Performance ability measures of EI are suggested to have more overlap with measures of cognitive ability (Joseph & Newman, 2010) compared to self-rated measures. Thus, we recommend that future research regarding the relationship between emotion regulation and sales performance also test if performance ability EI measures have a smaller incremental validity above and beyond cognitive ability. Further, the high emotional sales labor sample used in this study consisted of employees from companies in the Netherlands. We would caution against extrapolating our findings to other countries, as sales employees in other countries may rely on other skills or EI facets to achieve sales results.

Practical Implications for personnel selection

Our results may have implications for organizations using measures of EI to select sales employees. The present results indicate that the only part of the EI construct that incrementally predicts any form of sales performance is emotion regulation. Only when sales results were predicted did emotion regulation show a unique portion of variance. Our results suggest that using EI measures during sales assessments in low emotional sales jobs would not add much variance to a personality and cognitive ability measure. Only in high emotional labor sales work would EI add predictive validity to personality and cognitive ability and only when the goal is to predict sales results.

CONCLUSION

Overall, the results of our study assert the importance of emotion regulation for high emotional labor sales jobs. Individuals may be able to recognize emotions very well, and may even be able to interpret these emotions, yet to improve performance this may not be sufficient. It seems that what is vital for successful sales performance is the ability to actually control one's emotions in order to achieve one's goals. For example, successful sales employees may be those who can induce positive mood states in others in order to better connect with customers, or to overcome annoyance when encountering difficult customers. The present study seems to indicate that such abilities are not just dependent on personality (Big Five) or cognitive ability, but go beyond these traits. The present study also suggests that looking at a specific facet of emotional intelligence, i.e., emotion regulation, may be a way for organizations to assess this ability in their current or future employees. Moreover, specifically learning to control their own emotions may be a good way for sales employees to improve their performance.



Chapter 4

Predicting performance with other ratings of personality at trait and facet level, while controlling for other ratings of performance¹

4



¹ This chapter was submitted for publication as:

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The study in this chapter was also presented at the congress of the Dutch Work and Organizational Psychology Conference (WAOP), Eindhoven, Netherland, November 2013.

ABSTRACT

It has been suggested that other-ratings of personality may have advantages to self-ratings of personality in terms of predictive validity. The present study contributes to research in this area by studying whether this claim can be extended to the level of other-rated facets and by studying the potential overlap of other-ratings of personality with other-ratings of performance. Self-rated personality, other-rated personality, other-rated performance and supervisor-rated performance, were measured in a sample of 67 sales employees. Results suggest that beyond self-reports, other-rated personality facets were better predictors of other-rated job performance than other-rated personality traits. Controlling for other-ratings of performance did significantly lower the predictive validity of peer-ratings of personality traits, but not of the personality facets.

INTRODUCTION

It has been proposed that one of the reasons for the relatively low validity of personality in predicting job performance may be the overly reliance on self-reports (Morgeson, Campion et al. 2007). Although self-report measures have the advantage of being suitable for selection procedures, they may also contain several biases that reduce their predictive validity (Morgeson, Campion et al. 2007). Recent research has suggested that other-ratings of personality partly deal with these biases and can improve the predictive validity of personality for job performance (Connelly & Ones, 2010; Oh, Wang et al. 2011). Yet, previous studies on this topic have two limitations. First, most of these studies focused on the trait (factor) level only. For example, with regard to the well-known Five Factor model (FFM) of personality, these studies mainly examined the five traits but did not examine the underlying facets (Connelly & Ones 2010; Oh, Wang et al. 2011). Nevertheless, it has been suggested that under some circumstances these narrow facets may be more predictive than the score on the broad FFM traits to which they belong (Dudley, Orvis et al. 2006; Tett, Steele et al. 2003). This debate about the value of narrow versus broad measures is mostly referred to as the 'bandwidth-fidelity discussion' (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996) or the 'fidelity-bandwidth trade-off' (Hogan & Roberts, 1996).

Second, previous studies did not take into account the potential overlap of other-ratings of personality with other-ratings of performance. Socioanalytic theory (Hogan, 1991) suggests that other-ratings of personality in a work context mainly measure the reputation (performance) of an individual. This reputation may not necessarily truly reflect someone's personality but instead would be a rating that is strongly colored by how a person performs at his or her job. To disentangle other-ratings of personality with other-ratings of performance, it may be useful to examine the predictive validity of other-ratings of personality by controlling for other-ratings of performance. In research using other-ratings of personality, these others can be friends, family member, colleagues or even complete strangers (Connelly & Ones, 2010). In the present study peers at work provide the other-ratings.

To deal with limitations described above, the present study follows the suggestions by Oh and Mount (2011) to extend research on other-ratings of personality by going beyond the FFM traits to the level of narrow facets. We will compare which level of other-ratings of personality, i.e. trait or facet level, shows the highest validity for job performance, while controlling for other-ratings of performance.

Our study also extends previous research by introducing the 'bandwidth-fidelity' discussion (Ones & Viswesvaran, 1996) into the research field of other-ratings of personality. That is, the debate about which level of personality provides the best prediction of performance.

HYPOTHESES

In several studies using self-reports of personality it has been shown that personality facets (Dudley, Orvis et al. 2006; Tett, Steele et al. 2003) sometimes display better predictive validity than the FMM traits. As far as we know, it has not been tested whether this is also the case for other-rated personality facets. Yet, insofar other-ratings of personality resembles self-reported personality, we expect that:

Hypothesis 1: Compared to other-rated personality traits, other-rated personality facets will have more incremental predictive validity (above and beyond self ratings of personality) for supervisor-rated job performance.

Hogan (1991) suggested that other-ratings of personality may have a large performance component and that the observers' opinion of a persons' performance will influence the rating of personality of that person (see also Martinko & Gardner, 1987). If this is the case, then other-ratings of personality will show considerable overlap with other-ratings of performance. Subsequently, we expect that:

Hypothesis 2: Part of the predictive validity of other rated personality traits (a) and facets (b) can be explained by other-ratings of performance.

METHOD

Participants and Procedure

126 employees were asked to participate. The response rate was rate was 53% ($N = 67$, 56% male, 55 % female, $M_{\text{age}} = 28, 2$, $SD = 2, 1$). All participants were sales employees without managerial positions and working in different companies in the Netherlands. The participants filled out an online survey consisting of a Big Five personality survey (Sitser, 2007). Other- and supervisor ratings of personality and job performance were measured with a 360-feedback questionnaire.

Measures

Self-ratings of personality. Self-ratings of the personality traits and facets were measured with The Bridge Personality (BP; Sitser, 2007), a 246-item personality questionnaire. The intercorrelations of the Big Five Personality scales and 13 underlying personality facets, means, standard deviations, and alpha's are shown in Table 1. Sitser, Van der Linden and Born (2012) have confirmed the construct validity of the Bridge Personality with the Big Five Inventory (BFI, John & Srivastava, 1999) and criterion validity for job performance. The present study indicated adequate alpha reliabilities ranging from $\alpha = .82$ for Agreeableness and $\alpha = .91$ for Extraversion and Openness (Table 1).

Other (Peer)-ratings of personality. Participants' other-ratings of Personality traits and narrow personality facets were measured with a 13-item 360-degree feedback questionnaire that measures personality at the trait and the facet level. Thus, each facet was assessed by one item. To establish construct validity the 13 items were factor analyzed to test the FFM structure (Table 3). These analyses showed that in most cases, the narrow traits have the highest factor loadings on the FFM factor they are presumed to measure. Exceptions are Positivity and Stress Resistance that did not have the highest factor loading for Emotional Stability. This finding is coherent with meta-analytic findings by Oh and Mount (2011), who found that the Big Five factor Emotional Stability represents a construct that is less observable by others.

Table 1. Means, Standard Deviations and observed correlations of the Predictors and the job performance criteria
 Dependent and Independent Variables

	Mean	SD	Min-Max	Number of Items	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	
1. Gender	1.27	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Age	39.00	11.02	-	-	-.31*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Openness (self)	6.76	0.79	4.90-8.38	21	.05	-.12	.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Conscientiousness (self)	6.67	0.99	4.05-8.62	21	.23	-.24	.39**	.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Extraversion (self)	6.99	0.93	4.24-8.48	21	-.01	-.11	.53**	.15	.87	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Agreeableness (self)	7.19	0.75	4.86-8.57	14	.08	-.09	.14	.17	.62**	.91	-	-	-	-	-	-	-	-	-	-	-	-
7. Emotional Stability (self)	7.08	0.86	4.36-8.64	14	-.09	-.11	.38**	.23	.53**	.38**	.85	-	-	-	-	-	-	-	-	-	-	-
8. Creativity (self)	6.56	1.10	3.86-8.71	7	.04	-.08	.80**	.30*	.37**	.01	.07	.91	-	-	-	-	-	-	-	-	-	-
9. Entrepreneurial Focus (self)	6.68	1.02	4.29-8.71	7	.02	-.12	.89**	.29	.61**	.16	.43**	.53**	.86	-	-	-	-	-	-	-	-	-
10. Proactivity (self)	7.03	0.77	4.43-8.43	7	.06	-.09	.77**	.41**	.38**	.19	.52**	.35**	.67**	.76	-	-	-	-	-	-	-	-
11. Achievement Motivation (self)	7.29	0.96	3.71-8.86	7	.12	-.14	.64**	.76**	.35**	.15	.45**	.44**	.57**	.61**	.81	-	-	-	-	-	-	-
12. Detail Orientation (self)	6.50	1.42	1.57-8.57	7	.18	-.22	.12	.88**	-.01	.14	.03	.14	.04	.12	.47**	.85	-	-	-	-	-	-
13. Planfulness (self)	6.20	1.15	3.43-9.00	7	.26*	-.23	.33**	.87**	.10	.12	.19	.22	.25*	.37**	.53**	.64**	.76	-	-	-	-	-
14. Focus on Networking (self)	6.66	1.28	2.00-8.86	7	.06	-.11	.54**	.20	.87**	.59**	.33**	.43**	.57**	.29**	.33**	.07	.16	.83	-	-	-	-
15. Social Boldness (self)	7.05	0.98	3.57-8.71	7	-.06	-.02	.44**	.12	.86**	.38**	.49**	.22	.51**	.37**	.35**	-.05	.08	.60**	.81	-	-	-
16. Social Focus (self)	7.26	0.97	4.57-8.57	7	-.06	-.16	.37**	.02	.84**	.59**	.57**	.14	.47**	.33**	.21	-.08	-.01	.56**	.50**	.73	-	-
17. Consideration (self)	7.32	0.87	3.57-8.57	7	.18	-.17	.18	.17	.68**	.91**	.41**	.04	.22	.21	.15	.12	.17	.64**	.44**	.64**	.81	-
18. Helpfulness (self)	7.06	0.79	5.00-8.71	7	-.05	.01	.06	.12	.42**	.89**	.26*	-.02	.07	.13	.11	.14	.05	.41**	.23	.42**	.61**	-
19. Stress Resistance (self)	6.94	1.10	3.57-8.86	7	-.14	-.05	.34**	.26*	.28**	.09	.89**	.01	.39**	.49**	.47**	.03	.24	.09	.34**	.33**	.16	-
20. Positivity (self)	7.22	0.89	4.71-8.86	7	.00	-.16	.33**	.13	.68**	.63**	.83**	.12	.33**	.39**	.29**	.01	.07	.53**	.55**	.69**	.61**	-
21. Openness (other)	15.03	3.07	7.00-21.00	3	-.23	.11	.34**	.10	.05	-.14	.09	.24	.28**	.35**	.21	-.05	.16	.10	.03	-.01	-.10	-
22. Conscientiousness (other)	14.72	3.22	7.00-21.00	3	.03	.12	-.05	.20	-.29*	-.18	-.15	-.01	-.13	.05	.06	.16	.27*	-.25*	.31*	-.19	-.16	-
23. Extraversion (other)	16.50	2.54	7.00-21.00	3	-.24	.06	.12	-.27*	.22	-.06	.09	.07	.15	.05	-.14	-.34**	-.20	.18	.19	.22	.03	-
24. Agreeableness (other)	11.39	1.71	6.00-14.00	2	-.07	.13	-.08	-.1	-.01	-.06	.03	.07	-.11	-.01	-.13	-.09	-.03	-.01	-.01	-.01	-.02	-
25. Emotional Stability (other)	10.86	1.99	7.00-14.00	2	-.11	-.10	-.05	-.22	.02	-.04	.20	-.11	-.05	.07	-.14	-.25*	-.15	-.04	-.03	.15	.01	-
26. Creativity (other)	4.91	1.14	2.00-7.00	1	-.21	-.11	.42**	.21	.12	-.06	.12	.42**	.27*	.35**	.31*	.06	.19	.20	.10	-.03	-.06	-
27. Entrepreneurial Focus (other)	5.00	1.14	2.00-7.00	1	-.27*	.08	.21	.02	-.08	-.29*	.04	.07	.23	.24*	.13	-.14	.13	-.09	-.06	-.04	-.26*	-
28. Proactivity (other)	5.12	1.28	2.00-7.00	1	-.11	.10	.26*	.04	.09	-.01	.08	.13	.24	.31*	.10	-.05	.09	.15	.03	.04	.04	-
29. Achievement Motivation (other)	5.15	1.20	2.00-7.00	1	.13	.17	-.07	.22	-.25*	-.13	-.14	-.06	-.11	.01	.12	.15	.28**	-.24*	-.25*	-.15	-.12	-
30. Detail Orientation (other)	4.91	1.42	1.00-7.00	1	.00	.09	.02	.17	-.21	-.12	-.19	.13	-.09	-.01	.00	.18	.20	.15	-.25*	-.15	-.12	-
31. Planfulness (other)	4.66	1.30	2.00-7.00	1	-.07	.05	-.07	.12	-.26*	-.03	-.11	.12	.12	.05	.06	.18	.23	-.27	-.16	-.15	-.15	-
32. Focus on Networking (other)	5.29	1.03	2.00-7.00	1	-.20	.14	.09	-.11	.12	-.12	.04	.07	.06	.12	.02	-.01	-.19	-.03	.12	.08	.09	-.04
33. Social Boldness (other)	5.53	1.10	2.00-7.00	1	-.30*	.01	.11	.38**	.15	-.13	.09	.07	.17	.01	-.17	-.40**	-.34**	.11	.15	.13	-.07	-
34. Social Focus (other)	5.68	0.89	2.00-7.00	1	-.08	-.01	.09	-.23	.32**	.12	.10	.05	.16	.00	-.18	-.25*	-.13	.23	.26*	.36**	.20	-
35. Consideration (other)	5.72	0.89	3.00-7.00	1	-.12	.05	-.12	-.01	-.04	-.07	.03	-.09	-.18	.00	-.07	-.03	.06	-.07	-.02	-.02	-.06	-
36. Helpfulness (other)	5.66	1.01	3.00-7.00	1	-.02	.17	-.03	-.15	.03	.05	.01	-.04	-.03	-.01	-.16	-.13	.10	.04	.02	.00	.01	-
37. Stress Resistance (other)	5.37	1.12	2.00-7.00	1	-.18	.08	-.12	-.20	-.07	-.08	.13	-.19	-.08	.01	-.11	-.21	-.16	-.18	-.02	.06	-.02	-
38. Positivity (other)	5.49	1.20	3.00-7.00	1	-.01	-.25*	.03	-.18	.10	.00	.20	-.01	-.01	.11	-.12	-.22	-.10	.10	-.03	.20	.04	-
39. Job Performance (manager)	5.21	0.82	3.22-6.89	3	-.17	.07	.31**	.28**	.06	.05	.17	.25*	.25*	.27*	.40**	.19	.15	.13	.00	-.01	.05	-
40. Job Performance (other)	5.24	0.41	2.78-6.67	3	-.19	-.05	.28**	.08	-.06	-.16	.04	.16	.23	.31*	.12	-.04	.16	-.06	-.09	-.01	-.14	-

Note. Reliabilities are reported in the diagonal. *Correlation is significant at the .05 level (1-tailed). **Correlation is significant at the .01 level (1-tailed)

Table 1. Means, Standard Deviations and observed correlations of the Predictors and the job performance criteria
 Dependent and Independent Variables

	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	
1. Gender																								
2. Age																								
3. Openness (self)																								
4. Conscientiousness (self)																								
5. Extraversion (self)																								
6. Agreeableness (self)																								
7. Emotional Stability (self)																								
8. Creativity (self)																								
9. Entrepreneurial Focus (self)																								
10. Proactivity (self)																								
11. Achievement Motivation (self)																								
12. Detail Orientation (self)																								
13. Planfulness (self)																								
14. Focus on Networking (self)																								
15. Social Boldness (self)																								
16. Social Focus (self)																								
17. Consideration (self)																								
18. Helpfulness (self)																								
19. Stress Resistance (self)																								
20. Positivity (self)																								
21. Openness (other)																								
22. Conscientiousness (other)																								
23. Extraversion (other)																								
24. Agreeableness (other)																								
25. Emotional Stability (other)																								
26. Creativity (other)																								
27. Entrepreneurial Focus (other)																								
28. Proactivity (other)																								
29. Achievement Motivation (other)																								
30. Detail Orientation (other)																								
31. Planfulness (other)																								
32. Focus on Networking (other)																								
33. Social Boldness (other)																								
34. Social Focus (other)																								
35. Consideration (other)																								
36. Helpfulness (other)																								
37. Stress Resistance (other)																								
38. Positivity (other)																								
39. Job Performance (manager)																								
40. Job Performance (other)																								

Note. Reliabilities are reported in the diagonal. *Correlation is significant at the .05 level (1-tailed). ** Correlation is significant the .01 level (1-tailed)

Other-, and Supervisor rated Job Performance. Other-, and supervisor rated sales performance was measured with a 3-item questionnaire. These items were rated using a 7-point Likert scale ranging from *Not effective* to *Very Effective*. The specific items on this measure rate achieving goals, showing professional skills and showing potential. The internal consistency of this scale is $\alpha = .76$ for the other-rating and $\alpha = .81$ for the manager rating (see Table 1).

Table 2. *Other- Personality ratings: Factor loadings of the 13 Bridge Personality traits on the Big Five factors*

	Narrow personality trait	O	C	E	A	ES
1.	Creativity	.69	.07	.14	.14	.16
2.	Entrepreneurial Focus	.69	.31	.39	-.02	.14
3.	Proactivity	.78	.19	.22	.18	-.07
4.	Achievement Motivation	.10	.52	-.05	.24	.37
5.	Detail Orientation	.12	.27	.04	.12	.83
6.	Planfulness	.35	.91	.02	.02	.20
7.	Focus on Networking	.41	.08	.58	.10	.14
8.	Social Boldness	.27	-.02	.79	.19	-.13
9.	Social Focus	.14	-.09	.72	.30	.11
10.	Consideration	.09	.24	.13	.83	.16
11.	Helpfulness	.12	-.06	.29	.69	.10
12.	Stress Resistance	.12	.40	.50	.42	.00
13.	Positivity	.18	.10	.49	.53	-.05

RESULTS

Correlations and descriptive statistics for the background variables, the personality predictors and the job performance criteria are provided in Table 1. We used hierarchical regression analysis and relative weight analysis (RWA: Johnson, 2000) to test the hypothesis. Unlike regression analysis, RWA determines the relative importance of each predictor by considering its unique contribution plus its contribution in combination with the other predictors. Hypothesis 1 stated that compared to other-rated personality traits, other-rated personality facets will have more incremental predictive validity (above and beyond self-ratings) for supervisor-rated job performance. As shown in Table 3 this hypothesis was confirmed, the incremental predictive validity was $\Delta R = .22$ ($p < .01$, $rw = 68.6\%$) for the personality traits and $\Delta R = .36$ ($p < .01$, $rw = 65.2\%$) for the personality facets. Hypothesis 2 proposed that part of the predictive validity of other-rated personality traits (a) and facets (b) can be partly explained by other-ratings of performance. As shown in Table 3, this hypothesis was confirmed for personality traits; $\Delta R = .22$ ($p < .01$, $rw = 68.6\%$) vs. $\Delta R = .14$ (ns , $rw = 49.9\%$) but not for personality facets; $\Delta R = .36$ ($p < .01$, $rw = 65.2\%$) vs. $\Delta R = .34$ ($p < .01$, $rw = 56.4\%$). Thus it seems that controlling for peer ratings of performance does indeed lower the incremental predictive validity of other-rated personality traits, which implies that part of the predictive validity of other rated personality traits can be explained by other-ratings of performance. However, controlling for other rated

performance does not lower the incremental predictive validity of other rated personality facets. An interesting ad hoc finding is that of the other-rated facets, the facet Proactivity (part of the FMM trait Openness) had the single highest predictive validity for manager rated performance, after controlling for other rated performance ($\beta = .49, p < .01, rw = 24.7\%$).

Table 3. Results of the hierarchal regression and the relative weight analysis for other rated traits, facets and performance

Variables	MRP			Variables	MRP		
	β	rw	R ²		β	rw	R ²
							.21**
Step 1			.15	Step 1			.08
Big Five Factors Self				Big Five Factors Self			
Openness	.34*	10,8%		Openness	.25	7,7%	
Conscientiousness	.14	13,0%		Conscientiousness	.11	11,2%	
Extraversion	-.26	2,1%		Extraversion	-.19	1,4%	
Agreeableness	.10	2,1%		Agreeableness	.06	2,0%	
Emotional Stability	.11	3,4%		Emotional Stability	.10	3,2%	
Step 2			.22**	Step 2			.14
Big Five Factors Other				Big Five Factors Other			
Openness	.51*	51,0%		Openness	.50**	35,4%	
Conscientiousness	-.07	3,9%		Conscientiousness	.03	3,0%	
Extraversion	.08	7,3%		Extraversion	.07	5,2%	
Agreeableness	-.16	3,0%		Agreeableness	-.11	3,5%	
Emotional Stability	.03	3,4%		Emotional Stability	.03	2,8%	
Step 1			.23	Step 1			.21**
Narrow Personality traits Self				Other performance rating	.41	13,7%	
Creativity	.11	4,1%		Step 2			.18
Entrepreneurial Focus	.06	2,3%		Narrow Personality traits Self			
Proactivity	.06	2,3%		Creativity	.10	3,4%	
Achievement Motivation	.35	10,8%		Entrepreneurial Focus	.04	1,90%	
Detail Orientation	.08	3,9%		Proactivity	-.08	1,80%	
Planfulness	-.20	1,3%		Achievement Motivation	.38	9,40%	
Focus on Networking	.10	1,1%		Detail Orientation	.08	3,4%	
Social Boldness	-.22	2,3%		Planfulness	-.26	1,3%	
Social Focus	-.12	0,9%		Focus on Networking	.05	1,2%	
Consideration	.12	0,5%		Social Boldness	-.11	1,7%	
Helpfulness	.03	0,9%		Social Focus	-.24	0,8%	
Stress Resistance	.18	3,9%		Consideration	.16	0,5%	
Positivity	-.10	0,7%		Helpfulness	.04	0,7%	
Step 2			.36**	Stress Resistance	.10	2,9%	
Narrow Personality traits Other				Positivity	.04	0,9%	
Creativity	.05	8,1%		Step 3			.34**
Entrepreneurial Focus	-.32	3,7%		Narrow Personality traits Other			
Proactivity	.59**	26,0%		Creativity	.10	6,0%	
Achievement Motivation	-.07	1,4%		Entrepreneurial Focus	-.38	3,7%	
Detail Orientation	-.17	1,9%		Proactivity	.49**	19,2%	
Planfulness	.19	5,3%		Achievement Motivation	.09	1,4%	
Focus on Networking	.05	2,3%		Detail Orientation	-.21	2,4%	
Social Boldness	.25	4,8%		Planfulness	.26	5,2%	
Social Focus	.20	1,7%		Focus on Networking	.13	2,1%	
Consideration	.20	1,2%		Social Boldness	.17	4,0%	
Helpfulness	-.23	3,20%		Social Focus	.17	1,6%	
Stress Resistance	.05	2,5%		Consideration	.20	1,2%	
Positivity	-.35	3,1%		Helpfulness	-.16	3,3%	
				Stress Resistance	.06	2,2%	
				Positivity	-.46*	4,1%	

Results of the hierarchal regression and the relative weight analysis for other rated traits, facets and performance.



DISCUSSION

In the present study we found that, beyond self-reports, other-rated personality facets were better predictors of other rated job performance than other-rated personality traits. This is in line with suggestions that FFM facets may be more predictive of job performance than overlying FFM traits (e.g., Dudley et al, 2006). Whereas the predictive validity of self-rated personality facets had already received scientific support in the literature (e.g. Tett, Steele, & Beauregard, 2003), the present study adds to the literature on 'bandwidth-fidelity' discussion by providing support for the predictive validity of other-rated FMM facets.

Controlling for other-ratings of performance did significantly lower the predictive validity of peer-ratings of personality traits, but not of the personality facets. Thus the support for Hogan's Socioanalytic theory (1991) was somewhat mixed in this study as other-rated personality facets seem to indeed measure personality and not necessarily the reputation (performance) of an individual. In contrast to the facets, peer-rated FMM traits did not seem to be free of a reputation (performance) element, as controlling for peer rated performance did lower the predictive validity of the other rated FFM traits. It is important to note that in this study openness turned out to be the strongest predictor of job performance. Initially, this may seem remarkable as prior meta-analysis using self-reported personality measures reported that openness has relatively low validity in predicting performance (Barick & Mount, 2001) and mainly conscientiousness drives the predictive validity of personality. On the other hand, the finding on openness is less remarkable when one considers that prior meta-analytic finding confirmed that, when using other-ratings of personality openness is a strong predictor of performance (Connelly & Ones, 2010). An explanation for this may be that when measured by self-ratings, Openness reflects internal experience, such as fantasy and feelings. However, when measured by other-ratings, openness reflects to observable behavior such as open-minded actions and presenting ideas. Because these are visible behaviors and these are more highly correlated with *g*, other-ratings of openness may be more valid predictors of job performance (Oh & Mount, 2011).

A limitation of the present study is the use of single items in the other-ratings. Although Wanous, Reichers, and Hudy (1997) argued that one-item measures might be as reliable and valid as multiple-item measures, it may be valuable to replicate these findings in studies using other-rated personality facets based on multiple items. Another limitation is the use of single observer personality ratings. Although researchers have suggested that using multiple raters will improve the predictive validity of other-ratings of personality even more (Connelly & Ones, 2011), in organizational practice it is difficult to obtain personality ratings from multiple raters, especially during selection procedures. Also, recent meta analytic findings (Oh & Mount, 2011) suggest that the most operational validities of FFM traits, with the exception of emotional stability, based on a single observer rating are higher than those obtained in meta-analyses based on self-report measures (Hurtz and Donovan, 2000).

The current study contributes to earlier research into other-ratings of personality by extending this research to the facet level of personality. Also, this study confirms that, at the facet level, other-ratings of personality are not ratings of performance. Overall, other-ratings of personality may indeed be an alternative to self-ratings and the predictive validity lowering biases that these measures suffer from (Morgeson, 2007).

Chapter 5

Moderating effects on the predictive validity of contextualized personality measures for work-related criteria: A theoretical model¹



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ABSTRACT

While applying a Frame of Reference (FOR) to generic personality measures seems to improve predictive validity for job performance, there are still theoretical and empirical research advances to be made on this topic. Based on a critical assessment of the research into contextualized personality measures as a form of applying a FOR, this theoretical paper offers two propositions that may benefit the research field. First, it is proposed that too much contextualization of personality items may transform a generic personality questionnaire into a measure of self-rated behavior without reference to personality. This not only therefore a) lowers the potential of the items to measure personality but also, when these items are contextualized for a specific job, b) limits the generalizability of a personality measure. Second, the strength of a work-situation may act as a moderator in the relationship between contextualized personality measures and work-related performance criteria. Specifically, it is proposed that contextualized personality questionnaires may not predict job performance in strong contextual situations, unless test takers experience trait activation by a FOR that is trait-relevant for a job task.

INTRODUCTION

Researchers in the domain of personnel psychology have given much attention to the predictive validity of personality for job performance. Research in this area has often centered on the well-known Big Five personality factors (e.g., Dudley, Orvis, Lebiecki, & Cortina, 2006; Murphy & Dzieweczynski, 2005; Ones, Dilchert, Viswesvaran, & Judge, 2007; Smith, Hanges, & Dickson, 2001). Despite this attention, personality does not always have a positive reputation as a predictor of work-related criteria. Morgeson, Campion, Dipboye, Hollenbeck, Murphy, and Schmitt (2007), and Murphy and Dzieweczynski (2005) even suggested that the use of personality questionnaires in selection contexts should be reconsidered, as the predictive validity of these questionnaires remains low. Others, however, confirmed that personality is relevant because it can predict job performance (Judge & Erez, 2007; Barrick, Mount, & Judge, 2001; Ones et al., 2007; Tett & Christiansen, 2007). Even if personality does predict performance, the reported magnitude of personality effects on work-related criteria varies from low to moderate at best, with observed effect sizes ranging from $r = .07$ (Barrick et al., 2001) to $r = .37$ (Judge et al., 2002). Given the large amount of empirical research on personality and the debate about its usefulness as a predictor of job performance (see Ones et al., 2007, for an overview), there is a need for theory development on the possibility of improving the predictive validity of these questionnaires.

Researchers have suggested that the common use of generic (non-contextualized) personality items (e.g., 'I pay attention to details') may be one of the reasons for the low to moderate criterion-related validities of personality questionnaires (Bing, Whanger, Davison, & VanHook, 2004; Schmit, Ryan, Stierwalt, & Powell, 1995). For example, one individual filling out a generic personality questionnaire may have in mind how he or she behaves at home or among friends but not so much at work, whereas another individual may mainly have behavior at work in mind. To address this issue, contextualized personality questionnaires have been developed that use a specific frame of reference (e.g., 'I pay attention to details at work'). Schmit et al. (1995) labeled this aspect of personality questionnaires as the frame-of-reference (FOR) effect. Their idea was that imposing a common context, that is a Frame of Reference (FOR), on test takers may help to clarify the meaning of personality test items, which would subsequently reduce measurement error (Bing, Whanger, Davison, & VanHook, 2004; Holtz, Ployhart, & Dominguez, 2005; Lievens, De Corte, & Schollaert, 2008). Currently, there is empirical support for the use of a FOR as a way of improving the criterion-related validity of personality tests (Bing et al., 2004; Holtz, Ployhart, & Dominguez, 2005; Hunthausen, Truxillo, Bauer, & Hammer, 2003; Robie, Schmit, Ryan, & Zickar, 2000; Schmit et al., 1995). For example, Bing et al. (2004) found the observed correlation of conscientiousness with grade point average (GPA) to improve from $r = .39$ to $r = .46$, after adding a 'school-specific' FOR to a personality survey. However, as there are also studies that found lower increments in predictive validity by contextualizing personality measures (e.g., Shaffer &

Postlethwaite, 2012), evidence is mixed and there seems to be a need for further research into the predictive validity of these contextualized measures.

The aim of this theoretical paper is twofold. First, we will integrate two research topics into the field of contextualized personality questionnaires. These are i) 'the bandwidth discussion' (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996), which refers to the discussion about the extent to which broad or narrow measures of personality offer predictive validity for job performance, and ii) the topic of 'conceptual alignment' (Campbell, 1990; Sitser, Van der Linden, & Born, 2013), which is a process in which personality constructs are linked with conceptually aligned job performance criteria (e.g., Neuroticism with stress resistance in work situations).

Second, we will formulate two propositions. The first proposition states that there is a limit to the amount of contextualization that should be applied to personality items. When personality item contextualization becomes too specific the predictive validity of the questionnaire may become nothing else than measuring self-rated behavior (predictor) to predict other-rated behavior (criterion). Consequently, the items would no longer necessarily assess personality but instead assess behavior within a very specific context.

The second proposition states that the strength of a situation may act as a moderator in the relation between contextualized personality measures and job criteria. The strength of a situation refers to the extent to which regulations and norms at the workplace guide behavior, so that there is less freedom for individual expression of behavior. In strong situations there is less space for individual differences in behavior; in weak situations individuals can largely choose their own course of actions. Based on earlier research by Beaty, Cleveland, and Murphy (2001), we will differentiate between situations that have clear guidelines on helping colleagues as well as having a willingness to volunteer for extra assignments and showing support for organizational policies and procedures (a strong *contextual* situation) and situations that have clear guidelines on the primary tasks in a specific job (a strong *task* situation).

When talking about situational strength, we also will take into account the concept of *trait activation*. Trait activation refers to situational cues that may elicit the expression of individual differences in personality. We will argue that in some cases the FOR that is added to a personality survey may actually serve as a trait-activation cue. We will contend that due to this trait activation this FOR personality measure may still predict job performance in a strong *contextual* situation.

Besides elaborating on the assets and limitations of contextualized personality measures, we will also briefly discuss issues in the development of such measures. Specifically, it is a rather timely and costly venture to develop and validate a FOR personality measure. In addition, the predictive validity of such measures may be limited to the job or situation for which they were contextualized. Currently this is one of the issues that compromise the use of contextualized personality measures in practice. However, we will make the point that in some cases it may not be necessary to develop a personality survey with a specific FOR in each separate job. Instead, we will argue, it may be possible to develop FOR-based personality surveys that can be applied within a specific *job domain*. In the present paper the focus is on the job domain of sales as these

types of jobs are found in many organizations.

We will summarize these proposed effects on the predictive validity of contextualized personality measures in a model. This model may serve as guide for future research into the effects of personality and situations on behavior. We will now first turn to the topic of the FOR effect in personality questionnaires.

The Frame of Reference effect

The use of a frame of reference in personality questionnaires has a theoretical link (Hunthausen et al., 2003; Lievens et al., 2008) with the cognitive-affective system theory of Personality (CAPS; Mischel & Shoda, 1995). The CAPS theory states that behavior is only consistent throughout situations when these situations contain similar demands or 'signals to act'. Thus, a work environment may have different cues than a home environment because they trigger different types of behavior. These cues are comparable with a cue that a frame of reference (FOR) or context provides in a personality questionnaire. Thus, when a 'work FOR' is added to the personality questionnaire, such as when an item reads 'I pay attention to details at work', this would lead to consistent answering behavior because the test taker is clearly cued to hold work-related situations in mind when filling out the questionnaire. Subsequently, the idea is that the answers that are provided in this contextualized personality measure are a better predictor of work behavior than of behavior in other domains (e.g., at home). Using either a FOR in the general instructions or in the individual items of a personality questionnaire, or both, should therefore reduce irrelevant between-person variability because all respondents are asked to answer all items from the same conceptualized frame of reference (e.g., school or work; Holtz et al., 2005; Schmit et al., 1995). This effect is expected to then lead to increased reliability and to increased predictive validity of personality questionnaires (Lievens, 2008).

In contrast to the research described above, there are also studies suggesting that, even with a FOR, the validities of personality measures remain low. For instance, in strong situations (Mischel, 1995) personality may have relatively little effect on behavior. As an example, consider a financial job in which the situation is strong, that is, there are many rules and regulations. In such a situation, employees may find limited opportunities for freely chosen, personality-driven initiatives. Indeed, it has been found that bureaucracies are strong situations that limit freedom of behavior (Kärreman & Alvesson, 2004). If there is no freedom in behavior, and everybody acts in more or less the same way, then there is only a small amount of variation in behavior. It is a statistical fact that reduced variation in any measurement, including personality measures, will lower the relationships between variables. Consequently, the predictive validity of personality will remain low despite the use of a specific FOR.

Overall, there seems to be a need for theory development regarding FOR personality measures and their ability to predict work-related criteria. In the next section we will describe the current methods of contextualizing personality measures.

FOR Methods

Currently, four commonly applied methods of adding context to a personality questionnaire can be distinguished, each of which differs in the amount and type of applied contextualization. These methods are the following: tagged contextualization, instructional contextualization, a combination of tagged and instructional contextualization, and comprehensive contextualization. Table 1 presents a comparison of the effect sizes from example studies for each of these methods and for their noncontextualized versions. As can be seen, the number of studies displayed in this table that predict job outcomes is limited. This is because studies into the predictive validity of contextualized personality for work-related criteria are still scarce. In the next section these four methods of adding context to personality questionnaires will be discussed.

The first method of applying a FOR to generic personality measures is ‘tagged contextualization’ (Morgeson et al., 2007). This method simply adds a tag to personality items, and thus it was referred to as ‘tagged contextualization’. The FOR is applied by adding, for instance, a school- or work-related tag at the end of each item (see Reddock et al., 2010). The second method is ‘instructional contextualization’, which is achieved by instructing test takers before or during the completion of a personality questionnaire to think about how they behave at work, at school, or in another context when responding to each statement (e.g., Hunthausen et al., 2003; Schmit, 1995). The third method was first used by Bing et al. (2004), who combined tagged and instructional contextualization simultaneously. The fourth method of applying a FOR is comprehensive contextualization, which implies that one completely rewrites items so that they can be applied to very specific situations. One of the reasons this method was developed by Pace and Brannick (2010, p. 234) was that “‘simply adding ‘at work’ to existing NEO Openness items did not make sense for many of the items”. Thus, they wrote new, comprehensively contextualized, items for the Openness scale of the Big Five that were contextualized for creative work situations. An example of a generic NEO PI-R Openness item is ‘I often enjoy playing with theories or abstract ideas’ (Costa & McCrae, 1992). A comprehensively contextualized personality item of this scale is ‘I am curious about competitors’ ideas’ (Pace, 2005). In the second item, a specific behavior description is added (being curious about ideas of competitors). Although these researchers were the first to label this method comprehensive contextualization, similar approaches have been reported by Murtha, Kanfer, and Ackerman (1996), who added very specific situations to agreeableness and conscientiousness items in a study into the interaction of situations and personality in specific situations. Moreover, this method was also used by Butter and Born (2012) who comprehensively contextualized Conscientiousness items to predict the performance of PhD candidates.

In general, the four different contextualization methods described above had a positive effect on predictive validity. However, in the present study we will introduce some conditions that may influence the extent to which contextualized questionnaires improve validity. One such condition is the amount of conceptual alignment. Conceptual alignment is the method of

Table 1. Criterion related validities of generic- and contextualized Big Five scales form example studies of four methods of contextualizing personality questionnaires.

Study	Contextualization Method	Conceptual Alignment	n	O	C	C	A	ES	Criterion
Reddock et al.,(2011)	Non Contextualized		329	.07	.20	-.05	.11	-.04	GPA
	Tagged Contextualization	No		.10	.27	-.04	.06	.03	GPA
Hunthausen et al. (2003)	Non Contextualized		241	-.17	-.17	-.25	-.24	-.05	Test Taking Motivation
	Instructional Contextualization	No		-.14	-.21	-.23	.21	-.18	Test Taking Motivation
Bing et al. (2004)	Non Contextualized		342			.39			GPA
	Tagged & Instructional Contextualization	No				.46			GPA
Pace & Brannick (2010)	Non Contextualized		254	-.01					Overall Job Performance
	Comprehensive Contextualization	No		.17					Overall Job Performance
Pace & Brannick (2010)	Non Contextualized		254	.09					Creative Job Performance
	Comprehensive Contextualization	Yes		.32**					Creative Job Performance

Note. CA: Conceptual Alignment, O: Openness to Experience, C: Conscientiousness, E: Extraversion, A: Agreeableness, ES: Emotional Stability.
 ** Correlation is significant at the .01 level (2-tailed).

matching personality predictors with job criteria that contain elements similar to the personality predictors. For example, the personality facet orderliness can be conceptually matched with the job-related criterion of having a clean desk. It has been proposed that using conceptual alignment can enhance the predictive validity of personality measures. For example, Pace and Brannick (2010) found that comprehensive contextualization did not increase the criterion-related validity compared to tagged or instructional contextualized measures (see Table 1). However, their comprehensively contextualized measure led to incremental predictive validity when the contextualization they used conceptually matched the criterion (supervisor-rated creative performance). Further, in a study using GPA as a criterion, Lievens et al. (2008) suggested that only imposing a shared FOR is not enough, as the FOR needs to match the predicted criterion for conceptually relevant traits. However, this study used 'broad' contextualization (work or school) and used a criterion that was not work-related (GPA). This illustrates a gap in research and stresses the need for further theory development regarding this topic. Below we attempt to further elaborate on such a theoretical framework.

Using a FOR to match the predictor-criterion bandwidth

Apart from De Vries (2011) and Lievens et al.'s (2008) research into the predictive validity of contextualized personality questionnaires, studies mainly focused on 'broad' Big Five scales (Bing, Whanger, Davison, & VanHook, 2004; Hunthausen et al., 2003; Reddock, Biderman, & Nguyen, 2011). Some studies have shown, however, that gains in predictive validity of personality measures can be achieved by using the narrow personality facets underlying the Big Five (Ashton, 1998; Ashton, Jackson, Paunonen, Helmes, & Rothstein, 1995; Paunonen, Rothstein, & Jackson, 1999; De Vries, De Vries, & Born, 2011). Others studies suggested that using broader personality constructs, which overlie the Big Five, such as the General Factor of Personality (GFP, Musek, 2007; Rushton et al., 2008; Van der Linden, Te Nijenhuis, & Bakker, 2010) leads to better validity of personality than using the Big Five. The discussion as to what extent broad or narrow measures of personality offer predictive validity for job performance is often referred to as the 'bandwidth discussion' (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996). This discussion focuses on the question if it is better to use specific measures of personality or if more general measures of personality have more predictive power. There are researchers who state that lower-order facets or so-called narrow traits that are more specific than the Big Five increase validity regarding job performance (e.g., Ashton, 1998; Hough, 1992; Mershon & Gorsuch, 1988; Stewart, 1999). Indeed, Tett, Steele and Beauregard (2003) found that linking personality traits with specific criteria resulted in improved predictions of job performance.

We will now focus on how a FOR can improve the matching of the bandwidth of the predictor and the criterion. We will first describe the theory and then move on to addressing the benefit of a FOR for determining a bandwidth match between a personality predictor and a work-related criterion.

Ones and Viswesvaran (1996) labeled narrow personality traits as concrete traits or facets (Allen & Ebbesen, 1981) with specific 'behavioral connotations'. For example, the facet 'detail orientation' is a narrow personality facet because it measures the tendency to focus on and check details thoroughly, which is a specific type of behavior. In contrast, broad personality traits like the Big Five were defined by Ones and Viswesvaran (1996) as more inclusive, general and abstract variables that contain no clear behavioral connotations. Basically, a FOR is either a behavioral connotation or a description of a specific situation that is added to a personality measure. Personality facets that are already narrow by nature might have even more behavioral connotations after a FOR has been added. Generic broad personality scales such as the Big Five or the GPF tend to be abstract. Nevertheless, after a FOR has been added, these scales would become more concrete. Therefore it should be easier to match the bandwidth of the personality construct with the bandwidth of the predicted job criterion. In turn, this should lead to increased predictive validity.

In the following example we illustrate how using a FOR personality measure may facilitate choosing the optimal bandwidth of the *criterion*. As mentioned earlier, a generic personality measure uses less concrete (abstract) personality items that do not describe exactly which behavior is measured. For instance, consider the following item of the Conscientiousness facet Tidiness (IPIP, Goldberg et al., 2006): 'I like to organize things'. This item attempts to measure organized behavior or tidiness. After adding a behavior descriptor (FOR) to this item it reads as follows: 'I like to organize my administration at work'. This item now exactly describes which 'narrow' behavior is being measured, namely organizing administration at work, which implies more specific behavior, and thus narrower bandwidth, than the generic item. A job criterion that would match this facet in terms of bandwidth could be 'keeping a tidy administration'. The following example illustrates how using such a contextualized facet should facilitate a bandwidth-matching process.

In a recent paper that examined the 'bandwidth discussion', Salgado, Moscoso, and Berges (2013) presented evidence that broad Big Five personality scales are better than narrow facets at predicting narrow performance criteria. The authors used the criterion 'orderliness', which was labeled as a *narrow* performance criterion. However, it can be argued that being orderly is not a *narrow* performance criterion, but a *broad* criterion because being orderly (i.e. orderliness) entails many different behaviors. This criterion was predicted with the broad trait Conscientiousness and its three underlying narrow facets, namely order (e.g., tidiness), industriousness, and self-control. The broad trait Conscientiousness turned out to be the best predictor. However, had these authors used a narrower *contextualized* tidiness facet instead of a generic tidiness facet, such as the one described above, they may have chosen a narrower criterion in their study. For example, a criterion such as 'keeping a tidy administration' is a narrower criterion than the criterion 'orderliness' and would better fit the bandwidth of a contextualized Order (Tidiness) facet. Thus, it can be argued that the bandwidth of the criterion

'orderliness', as used in Salgado et al. (2013), may be broader than a narrow contextualized personality facet. This may have been the reason why this criterion was better predicted by a broad personality construct (Conscientiousness) than any of the generic narrow facets. By using contextualized facets in such a study, it might have been possible to make a better bandwidth match with a potentially narrower work-related criterion. In such a research design, it would be interesting to see if Conscientiousness would still be the better predictor.

Now that applying a FOR to optimize the bandwidth match of personality predictors and work-related criteria has been discussed, we move to yet another topic that may influence the predictive validity of contextualized personality measures, namely conceptual alignment (Campbell, 1990). Conceptual alignment is the process of using specific traits to predict conceptually matching criteria. To be able to further study the effect of conceptual alignment on a FOR, we first explain a possible theoretical basis for this, which is, for contextualized personality measures, the CAPS theory.

Using a FOR to optimize conceptual alignment

The CAPS theory model suggests that each specific situation causes a different (personality-) guided reaction (Mischel & Shoda, 1995). The theory suggests that people are characterized not only by stable individual differences in their overall levels of behavior, but also by distinctive and stable patterns of situation-behavior relations (e.g., she does X when A but Y when B). For instance, a person may display extravert behavior at home (e.g., talking to friends, etc.), but may show more introvert behavior at work (e.g., hardly talking to clients, etc.). The method of linking personality traits with specific situations or job performance criteria, as used in the CAPS theory, is also found in the process of conceptual alignment. This is the process of conceptually matching personality predictors and performance criteria; in this process personality constructs are linked with conceptually aligned job performance criteria (Campbell, 1990; Sitser, Van der Linden & Born, 2013).

It has been suggested that the validity of personality questionnaires for predicting job-related criteria is lower than expected because personality measures are often designed to measure global differences between people, not behavior in specific situations such as specific job-related criteria (Robie, Schmit, Ryan, & Zickar, 2000). Conceptual alignment by using a FOR measure may solve this issue. Because FORs have behavior descriptors that specify the situation (e.g., school or work), FORs can easily be matched with a conceptually aligned criterion. We will now address how a FOR can optimize conceptual alignment, compared to conceptual alignment using a generic personality measure.

Campbell (1990) introduced the idea of conceptual alignment. He suggested a strategy in which personality traits are conceptually matched with job performance criteria. For example, the facet 'detail orientation', which reflects the tendency to focus on and check details thoroughly (e.g., G. L. Stewart, 1999), may underlie performance on administrative tasks in which it is

important to be systematic and to work through detailed information thoroughly. Hogan and Holland (2003) found the predictive validity of personality to increase when predictors and criterion measures were conceptually aligned. Basically, the idea of conceptual alignment is based on the assumption that test validity is related to conceptually matching the predictor and the criterion (Binning & Barrett, 1989; Goldstein, Zedeck, & Goldstein, 2002; Warr, 2000). A well-known example is that cognitive criteria, such as 'calculating tasks', are best predicted by cognitively oriented selection methods such as a numerical ability test. However, non-cognitive criteria (e.g., management behavior, working with others) are best predicted by selection procedures that use non-cognitive measures such as a personality questionnaire (Campbell, McCloy, Oppler, & Sager, 1993; Lievens, Buyse, & Sackett, 2005).

In the field of FOR research, Pace and Brannick (2010) and Lievens (2008) have made the first steps in combining FOR with conceptual alignment. For instance, Pace and Brannick (2010) reported that contextualized Openness predicted (conceptually matching) creative performance, but not overall performance. However, these studies either did not use all of the Big Five (Pace & Brannick, 2010) or did not predict work-related criteria (Lievens, 2008). De Vries et al. (2011) have already reported some preliminary evidence for improved validities of conceptually aligned facets, although this study used self-reported work criteria only. Thus, advances in research into aligning specific contextualized personality facets with conceptually matching job performance criteria have yet to be made.

In a recent meta-analysis, Shaffer and Postlethwaite (2012) stressed the importance of determining the criteria for which contextualized personality traits or facets are most valid. For example, when predicting work-related criteria, a personality measure that is comprehensively contextualized for management positions should facilitate conceptual alignment with leadership effectiveness and thus improve predictive validity.

In summary, we have discussed how two existing research topics, the bandwidth discussion and conceptual alignment, can be used in the field of FOR related to personality research. Figure 1 illustrates the moderating effects of matching predictor-criterion bandwidth and conceptual alignment on the predictive validity of contextualized personality measures.

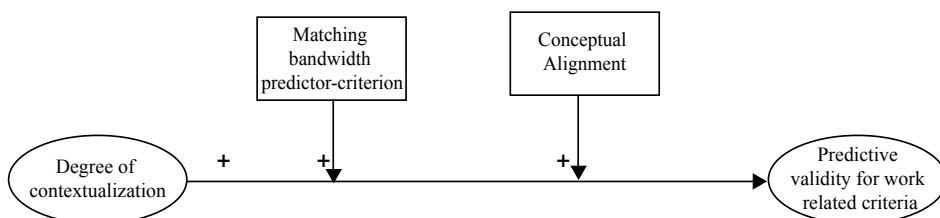


Figure 1. Model of the moderating effects of 'bandwidth' and 'conceptual alignment' on the predictive validity of contextualized personality measures.

Whereas the topics of the bandwidth-discussion and conceptual alignment are also relevant for generic personality measures, we now move to two propositions that are specifically relevant for personality measures that have a FOR. Two additional moderators of the predictive validity of FOR personality measures will be suggested. We will start with the issue that FOR personality measures can only be used for the job they were intended for, which we label the generalizability-contextualization dilemma. Further, we suggest that item contextualization may limit the potential of the personality questionnaire to measure personality. Subsequently, we will address how trait activation, caused by the FOR, may ensure that FOR measures remain valid in strong situations. These two moderators are then summarized and added, along with the earlier described moderators, into Figure 4.

The Generalizability-Contextualization dilemma and the potential of a FOR to measure personality

This generalizability-contextualization dilemma implies that adding a FOR to generic personality measures may result in a measure that will only predict behavior in the job domain for which it was developed. This dilemma is caused by the specific behavior descriptors in a FOR. For example, using comprehensive contextualization for a financial job, an item may be 'I focus on the details of financial data in my work'. This item may indeed predict how much an employee will focus on details of financial data. The problem, however, is that this specific item is not necessarily usable in any other situation or for other jobs that do not involve working with financial data. Thus, the item is not very generalizable. Another question one may raise in this context is whether such a comprehensively contextualized personality item is still measuring personality. An example from a previous study can illustrate this dilemma. Specifically, Lievens et al. (2008) provided Conscientiousness facets with a work-FOR and a school-FOR. The average observed correlation between the same personality facets with a *different* FOR (e.g., Self Discipline at work with Self Discipline at school) was $r = .35$ (ranging from $r = .22$ to $r = .46$). The average observed correlation between different personality facets with the *same* FOR (e.g., Achievement at school with Self Discipline at school) was $r = .73$ (ranging from $r = .72$ to $r = .74$). Thus, these findings indicate that correlations between contextualized personality scales may be caused more by the shared FOR and less by the underlying personality construct.

Overall, contextualization of personality items seems to improve the predictive validity of a personality questionnaire but not necessarily a) its potential to measure personality-related information and b) or its generalizability to other jobs. Therefore, from this line of reasoning, contextualized personality questionnaires may no longer be seen as 'signs' that will predict behavior in any job, but instead become 'samples' of the typical behavior of people that will predict behavior in one job (Wernimont & Campbell, 1968). Figure 3 presents three graphs which show the idea that as the number of behavior descriptors in the item increases, 1) the predictive validity increases, 2) the generalizability of the personality measure decreases, and

3) the personality describing content of the item decreases. Thus, the limit of contextualization is the completely contextualized personality measure. It will perhaps have optimal predictive validity for the job for which it was contextualized, but at that point its potential to measure personality and its generalizability for other jobs will be minimized.

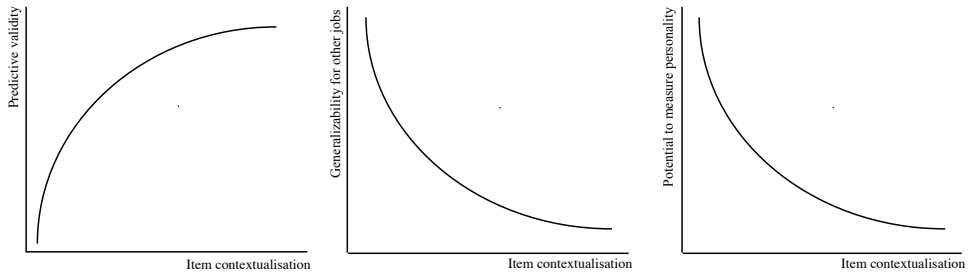


Figure 2. The hypothesized empirical dilemma between the amount of item contextualization of a personality measure and that measure's predictive validity, its generalizability for other jobs, and its potential to measure personality.

Proposition 1: Extensive contextualization of personality items may transform a generic personality questionnaire into a measure that predicts work behavior a) with self-rated behavior with limited potential to measure personality and b) with limited generalizability to other jobs.

Situation strength

There is a third way in which situations may influence the relation between contextualized personality measures and work-related criteria. In the 1970s, an important debate among personality- and social psychologists arose regarding the importance of both personality and situation in predicting behavior (Bowers, 1973). Mischel (1977) suggested that situations have more influence on behavior when situations are strong, and in contrast, personality has more influence on behavior when situations are weak. The rationale behind his reasoning is that strong situations constrain options and provide clear signals about what is expected. Consistent expectancies restrict the degree of behavioral variability across individuals, which in turn limit the strength of personality-behavior relations. In contrast, behaviors are more likely to reflect relevant personality traits when signals and situational constraints are weak. In other words, the predictive power of generic personality measures should be *lower* in a strong situation and *higher* in a weaker (less strictly defined) situation. Indeed, evidence supporting this idea was found in a study by Barrick and Mount (1993), who showed that job autonomy had a moderating effect on the relation between Big Five personality and supervisor-rated job performance. In this study, extraversion and conscientiousness only had associations with job performance when

participants had autonomy in their work, which implies a weak situation.

Although researchers have discussed the importance of the effect of situational strength on behavior, they did not provide clear definitions of what determines the strength of a situation. Among the researchers who did offer initial attempts to provide definitions were Beaty, Cleveland and Murphy (2001). They differentiated two types of strong situations, namely task situations and contextual situations. In strong *task* situations, performance guidelines are based on the ability of employees to complete their assigned tasks. In strong *contextual* situations, performance guidelines are based on the ability to work with and help coworkers, as well as showing a willingness to volunteer for extra assignments and showing support for organizational policies and procedures. We will use these definitions in the remainder of this manuscript. It is important to note that *contextualization* in a personality measure refers to a FOR, and that strong *contextual* situations refer to performance guidelines.

The effect of situation strength on contextualized personality measures

Much attention has been given to the effect of situations on the relation between generic personality measures and job performance (Barrick & Mount, 1993). However, studies on the effect of situation strength on the influence of a FOR are, to our knowledge, non-existent. We will argue that strong situations have a different effect on the predictive validity of FOR personality measures than on generic personality measures.

In the following section we will suggest that a FOR can cause trait activation. According to trait activation theory, a situation is relevant to a personality trait if it provides cues for the expression of trait-relevant behavior (Tett & Guterman, 2000). For example, a situation in which new clients can be contracted is relevant to the trait Openness (Furnham & Fudge, 2008; Sitser et al., 2013) because contracting more new clients would suggest high Openness and ignoring this opportunity would suggest low Openness. Until now, trait activation theory has mainly focused on *environmental* situations outside a questionnaire that provide these cues. However, it can be argued that the *cues in the measure itself* (e.g., personality items) or the context in a FOR can also provide such cues. As discussed earlier, a FOR can be seen as characteristic of the item within the personality questionnaire. As an example, consider the following comprehensively contextualized personality item of an Openness scale: 'I am interested in finding new business opportunities'. The trait-relevant FOR would be a situation in which there are new business opportunities to be found. This FOR would provide trait cues that may predict trait-relevant behavior (i.e., finding new business opportunities). In contrast, an example item of the generic Openness NEO PI-R scale is 'I often enjoy playing with theories or abstract ideas' (Costa & McCrae, 1992), in which clearly no situational or trait-activating cues regarding new business opportunities are present.

Below we will argue that a FOR personality measure may still predict behavior in strong situations due to the measure's trait-activating potential. However, we suggest that this potential

may depend on the *type* of strong situation. Consider the following example. A sales employee is given a job previously taken by a now retired colleague. This colleague has largely neglected helping his co-workers. A contextually strong version of this situation would include the explicit instruction to assist co-workers with their work. This *contextual* situation would probably limit individual differences on all generic Big Five traits that are related to contextual performance (strong *contextual* performance). However, in this example, there are no explicit instructions regarding sales task performance. Therefore, this situation would most probably not limit individual differences regarding task performance. For instance, if a FOR personality measure was contextualized for sales tasks, such a personality measure would contain behavioral cues (FOR) that may cause trait activation in situations that are trait relevant for *task* performance. Consider the sales FOR in the previously mentioned Openness item 'I am interested in finding new business opportunities'. Clearly this FOR has trait-relevant potential for a sales task, namely finding business opportunities. It has no trait relevance for performance in strong contextual situations (helping co-workers, volunteering for assignments or showing support for organizational policies and procedures). Thus, sales employees, while completing this measure, may see themselves starting to look for those business opportunities. They would not be limited in their answering behavior by the strong contextual situation that they work in. In this case the contextualized conscientiousness scale will still predict individual differences in a strong *contextual* situation, because traits are activated by a situational cue (FOR) that is *task* orientated. In Figure 3 we have illustrated that, in strong *contextual* situations, a FOR personality measure may still have predictive validity if it has a FOR that is trait relevant for *task* performance (path 3). Of course, this can also be reversed; a FOR personality measure may still have predictive validity in strong *task* situations if it has a FOR that is trait relevant for *contextual* performance (path 2). A FOR that is trait relevant for *task* performance (path 1) or a FOR that is trait relevant for *contextual* performance (path 2) will have a trait-activating effect in weak situations. A generic personality measure will have limited predictive validity in both strong *contextual* situations and strong *task* situations because it has no trait-activating FOR. Indeed, Beaty et al. (2001) reported lower correlations for generic Emotional Stability, Extraversion, Agreeableness and Conscientiousness in strong *contextual* situations and strong *task* situations. Because we focus on sales performance in the remainder of this manuscript and because sales performance criteria tend to be *task* oriented and less oriented towards *contextual* performance, we will focus on path 3 in the remainder of this study.

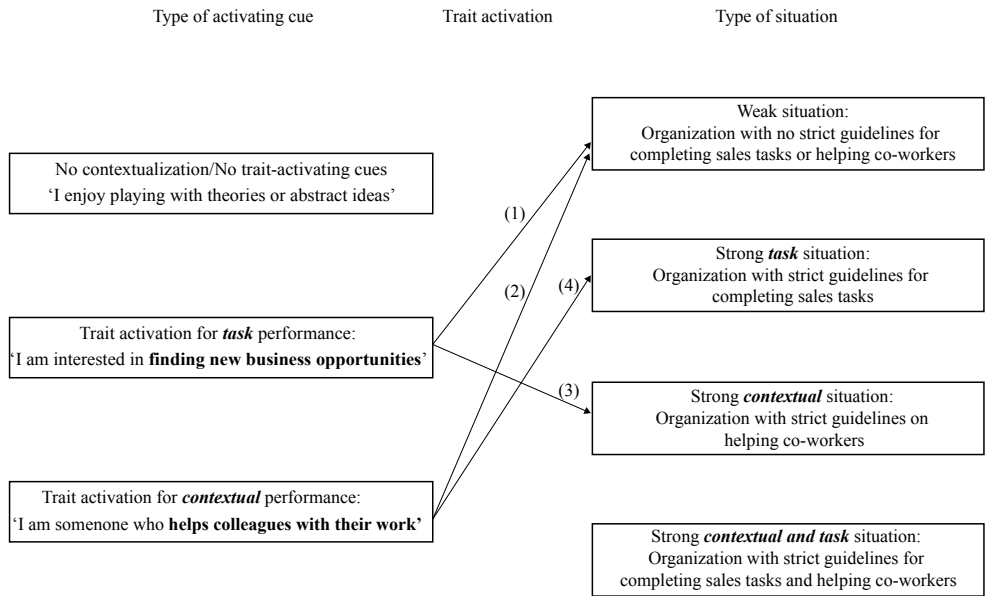


Figure 3. Examples of items with a trait-activating cue for either task or contextual performance and their trait-activating effect in weak situations (1 and 2), strong contextual situations (3) and strong task situations (4).

Figure 4 illustrates the suggestion that strong *contextual* situations and strong *task* situations limit the predictive validity of a generic personality measure (A). Strong *contextual* situations may not limit the predictive validity of a FOR personality measure if the test takers experience trait activation by the FOR in the measure (B), given that the FOR has trait relevance for – in our case – sales *tasks*.

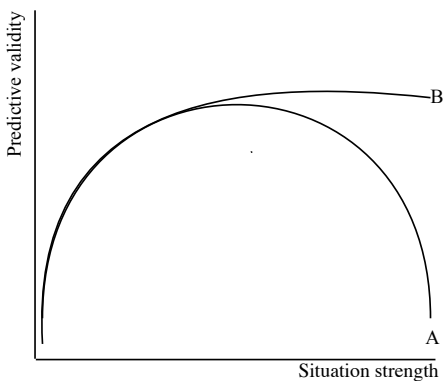


Figure 4. The hypothesized effect of trait activation (B) by a FOR, given that the FOR is trait relevant for task performance, on the predictive validity of contextualized personality measures in strong contextual situations.

Proposition 2: The negative effect of a strong *contextual* situation on the predictive validity of a personality measure will diminish if the personality measure has a FOR that ensures trait activation for *task* performance.

The model in figure 4 illustrates the moderating effect of matching predictor and criterion bandwidth, conceptual alignment, situation strength and trait activation on the relationship between contextualized personality measures and their predictive validity for work-related criteria.

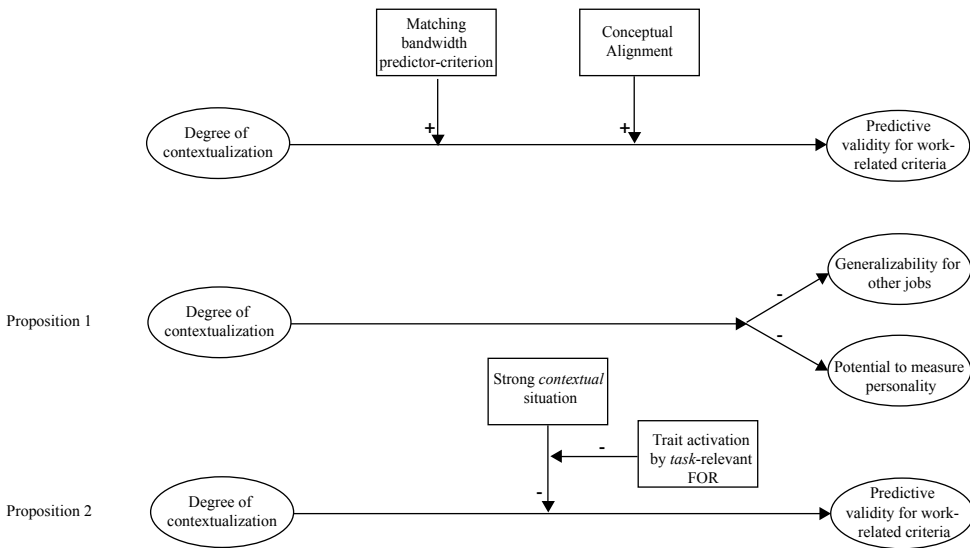


Figure 5. Model of the moderating effects of matching predictor and criterion bandwidth, conceptual alignment, situation strength and trait activation on the relationship between contextualized personality measures and their predictive validity for work-related criteria.

Now that we have described the propositions, we move on to how the proposed model can be used to optimize the prediction of the performance of sales employees in strong situations.

Using a FOR to predict sales performance in strong situations

As mentioned previously, a comprehensively contextualized personality measure may only predict work-related outcomes in the jobs for which it was developed. Due to limited generalizability such a measure may not predict performance in other jobs. Developing and validating a contextualized personality measure is a lengthy and costly venture. Thus, creating such a measure may only be worthwhile for jobs or job families that can found in many different

organizations, such as sales jobs. Sales jobs make up 10.6% of all jobs in the U.S. economy (Bureau of Labor Statistics, 2004). European percentages on this topic are not available, but it is obvious that sales jobs are prevalent in Europe as well. It should therefore be worthwhile to develop a FOR measure for sales jobs.

To ensure that such a measure would also predict performance in strong *contextual* situations, a first step would be to select a FOR for each of the Big Five traits that could evoke trait-activating behavior for sales *tasks*. Such a FOR should be trait relevant for sales tasks and should cause trait activation in strong contextual situations. These situational cues could then be used for adding a sales FOR to each of the Big Five scales. These sales FORs can be identified as sales criteria that have been reported as criteria that can be predicted with personality traits. As can be concluded from research into the personality predictors of sales performance (Barrick, Mount, & Strauss, 1993; Furnham & Fudge, 2008; Sitser et al., 2013), these predictors can be different, depending on the predicted criterion. Sales performance criteria that are reported to be effectively predicted by Big Five personality traits tend to be *task* oriented and less oriented towards *contextual* performance. For instance, conscientiousness was found to predict the achievement of goals of sales employees (Barrick, Mount, & Strauss, 1993). Barrick and Mount (1991) linked frequent contact with clients to the employees' scores on Extraversion. Research found that sales employees scoring high on Openness tend to achieve higher sales numbers (Sitser et al., 2013; Furnham & Fudge, 2008). Agreeableness was reported to be an effective predictor of Customer Relationship Management, and Emotional Stability was a predictor of Handling Customer Objections (Sitser et al., 2013). Subsequently, the different sales FORs that can be added in the items of the Big Five scales would be the following: 'achieving goals' for Conscientiousness, 'higher sales number' for Openness, 'frequent client contact' for Extraversion, 'customer relationship management' for Agreeableness, and 'handling customer objections' for Emotional Stability.

The next step would be to use items of a validated generic personality questionnaire, and add these different sales-related FORs to the items of the relevant Big Five scale. For example, consider the following Conscientiousness scale item from the BFI (John & Srivastava, 1999): 'I see myself as someone who perseveres until the task is finished'. As mentioned above, a trait-activating situational cue for this scale is goal-achieving behavior. After adding this cue, the FOR item would be 'I see myself as someone who perseveres until the sales goal is reached'.

After the trait-activating sales FORs have been added to the personality measure, it now contains different trait-activating cues that are (sales-) *task* relevant in each of the Big Five traits. In theory, this measure should predict performance in strong *contextual* situations because the personality traits of sales employees may be activated by the cue of the FOR that has trait-activating potential for sales tasks.

DISCUSSION

In this article we focused on the role that situations play in the relation between personality and the prediction of (job) performance. The first situation is an imposed situation on test takers that complete a personality questionnaire, the so-called frame of reference (FOR). A FOR seems to improve predictive validity of personality questionnaires (Shaffer, 2012). However, as the number of behavioral descriptors in the personality items grows, the generalizability for other jobs may suffer and the personality test may lose its potential to measure personality. As a consequence, the personality questionnaire may be transformed into a self-rating job performance questionnaire with limited generalizability to other jobs and job types. Although the predictive validity of such a questionnaire for job performance may still be robust, it is no longer per se personality that is the predictor but perhaps the behavioral descriptors in the FOR.

The second situation is a specific work situation that is conceptually aligned with a contextualized personality predictor. Conceptual alignment has been proven to be an effective way to improve the predictive validity of generic personality traits and facets (Sitser et al., 2013). However, using FOR personality measures should make conceptual alignment even more effective, as adding behavior descriptors (e.g., the actual behavior) in personality items should make it easier to match these with desired behavior in work-related criteria.

The third situation is (the strength of) the external situation. This can be a strong contextual situation or a strong task situation. These two types of strong situations may have a moderating effect on the relationship between FOR personality measures and job performance. For instance, the predictive validity of a FOR personality measure that has a trait-activating cue for sales tasks ('I am focused on handling my sales administration') may not be limited in a company that has clear instructions regarding helping co-workers (strong contextual situation). However, when in that organization the performance expectancies regarding tasks are strictly defined, the predictive validity of this FOR personality measure may be limited. In contrast to a generic personality measure that does not contain these situational cues for task performance, such a contextualized personality measure may thus not lose its predictive validity in a strong contextual situation. Of course this situation can also be reversed; a FOR personality measure that has trait-activating cues for contextual performance ('I focus on helping co-workers') may not be limited in a strong task situation in which there are no guidelines on helping colleagues. The proposed model can either be used in research efforts or in daily organizational practice. Strong contextual situations do not limit the predictive validity of FOR personality measure *if* this measure contains a FOR that has a trait-activating effect on task performance. Strong task situations do not limit the predictive validity of a FOR personality measure *if* this measure contains a FOR that has a trait-activating effect on contextual performance. In weak situations a FOR personality measure that has trait-activating potential for either contextual performance or task performance may not be limited in predictive validity. Situations that are strong both in

context and in tasks may limit predictive validity of all personality questionnaires, regardless of a trait-activating FOR.

Limitations of the framework

The present framework is not without its limitations. First, the method of comprehensive contextualization implies that personality items are contextualized in such a way that they become relevant for a specific job or specific organization. Developing and validating personality questionnaires for these specific circumstances may be a costly venture. However, developing these questionnaires for job families, groupings of jobs with similar characteristics that can be found in different organizations, may be efficient. For example, developing a personality questionnaire that is contextualized for sales employees should be worthwhile as these jobs can be found in many organizations. This would make it possible to study the validity of such a questionnaire across organizations.

Second, the model described in this study implies that situation strength needs to be measured. In our model we define situations as *weak* situations, strong *contextual* situations or strong *task* situations or both. In order to test our model, the strength of a situation should be measured properly. Testing the propositions of our model in a field study would thus imply developing a method to measure this strength.

Third, all studies regarding contextualized personality questionnaires and their criterion-related validity for work-related criteria have used incumbent samples. All data that were reported in this study and all propositions summarized in the model were based on findings from such studies. Although we expect the proposed model to be valid in selection settings, we recommend caution when generalizing our propositions to applicant populations. Field studies into the effects of contextualized personality measures on work-related criteria, based on applicant samples, are obviously needed.

Recommendations for future research

When looking at the current state of FOR-related research, it is clear that there is still much to be gained through future research. First, at this moment research on the effect of a FOR on the predictive validity for job performance using applicant samples is non-existent. As scores on personality questionnaires tend to differ systematically in selection settings, research is needed before drawing conclusions about improved personnel selection when using FOR techniques. Second, in the current paper, psychometrically based assumptions are made regarding the effects of contextualization on generalizability of personality questionnaires. As far as we know, these assumptions have not been tested in a field study. Third, the moderating effect of situation strength on the relationship between contextualized personality measures and work-related criteria has not been tested empirically. Fourth, the idea of trait activation by the situational

cues of a FOR is new and has not been empirically tested. Thus, empirical research on this topic is needed. A possible future research design could imply testing the predictive validity of a FOR personality measure that has trait activators for sales tasks, in four independent samples: a sample of sales employees working in a strong *contextual* situation, a sample of sales employees working in a strong *task* situation, a sample working in a *weak* situation, and a sample that is working in a situation that is strong in both *task* and *context*.

CONCLUSIONS

With this theoretical paper we propose a new model of linking FOR personality predictors with job performance criteria. In this model the strength of the job or organization and the possibility of trait activation by a FOR are of key importance in predicting work-related criteria. With this model we hope to have contributed to the existing FOR literature by introducing the moderating effects of strong situations and trait activation by a FOR. A clear gap in research exists in studying the effects of contextualized personality questionnaires in settings in which the strength of a situation can also be measured.

Chapter 6

Summary and discussion



Many organizations worldwide use personality measures to select applicants for sales jobs or to assess incumbent sales employees. More than 10% of the U.S. workforce is employed in sales jobs (Bureau of Labor Statistics, 2004). Although similar statistics are not available for Europe, it is obvious that the sales job domain is prevalent in this region as well. Much research has been done on the personality predictors of sales performance (Barrick et al., 1991; Verbeke, Dietz, & Verwaal, 2011; Vinchur et al., 1996; Warr et al., 2005). Results from meta-analytic studies suggest that either Conscientiousness or Extraversion or both are personality predictors for sales performance (Barrick et al., 1991; Hurz et al., 2000; Salgado, 1997; Vinchur et al., 1996). However, Openness has also been reported as a valid predictor of objectively measured sales performance in one field study (Furnham & Fudge, 2008). Thus, results seem to differ per study and seem to be dependent on the type of sales performance criterion used in the study (i.e. objective performance or subjective performance). Therefore, we used both objective sales criteria and performance ratings in the present dissertation.

Researchers trying to improve the predictive validity of personality measures have reported mixed results. The doubts about the potential of personality questionnaires to predict job outcomes, as raised by Morgeson et al. (2007), have been a motivation for researchers to further study this topic (Hogan, 2005; Ones et al., 2007). Morgeson et al. (2007) argued that the use of personality measures should be reconsidered because their predictive validity for job-related outcomes is low. Indeed, the reported magnitude of personality effects on work-related criteria varies from low to moderate at most, with observed effect sizes ranging from $r = .07$ (Barrick et al., 2001) to $r = .37$ (Judge et al., 2002).

The large amount of research on personality and the debate about its usefulness as a predictor of job performance stress the need for further research on this topic. Therefore, in the present dissertation, five approaches to strengthen the personality-sales performance linkage were studied.

First, we considered the level of the measured personality dimensions. The discussion about this topic focused on an important question: Which level of personality measure predicts which level of criterion measure best? This question refers to the so-called bandwidth-fidelity discussion (Ones & Viswesvaran, 1996). So far, the focus of earlier research in this area has been on two levels, namely the 'broad' Big Five factors and their more 'narrow' underlying facets. Chapter 2 of this dissertation added a broader, third level of personality measurement in the bandwidth-fidelity discussion, namely the General Factor of Personality (GFP). Moreover, because we used two levels of job performance criteria, broad and specific sales performance, we added a job performance dimension to this discussion.

Second, an asset of the present dissertation is that we not only focused on the validities of different hierarchical levels of personality, but also took into account the alignment between personality and performance. This process is labeled conceptual alignment, which reflects a process in which personality constructs are linked with specific conceptually related performance

criteria (Campbell, 1990). To our knowledge, conceptual aligning personality predictors with different levels of sales performance criteria had not been studied before. Thus, conceptually aligning predictors with sales criteria was empirically tested in chapter 2. In chapter 5, the idea of conceptual alignment was embedded in a theoretical model regarding the predictive validity of so-called contextualized personality questionnaires.

Third, emotional intelligence has been reported as a construct that predicts job performance. Further, EI has been suggested to be particularly predictive for performance in sales jobs (Weitz, Castleberry, & Tanner 2001). However, recent research suggests that of the underlying facets of the EI construct, only the facet emotion regulation predicts job performance above and beyond personality and cognitive ability, and only in high emotional labor (Joseph & Newman, 2010). As the predicted validities of the separate EI facets had not yet been tested in a field study, this was done in chapter 3, using separate samples of high emotional labor and low emotional labor.

Fourth, Morgeson et al. (2007) suggested that the reliance on self-ratings to measure the Big Five is one of the reasons for the low predictive validity of personality measures. He suggested that using other-ratings of personality might be a way to improve the predictive validity of this construct. However, the incremental predictive validity of peer-rated personality, above and beyond self-ratings of personality and peer-ratings of performance, had not yet been studied in a field study. Moreover, as the predictive validity of peer-rated personality had not yet been tested at the facet level, this was done in chapter 4.

Finally, while adding Frame of Reference (FOR) to generic personality measures seems to improve predictive validity for job performance (Shaffer & Postlethwaite, 2012), we suggested in chapter 5 that there are still theoretical and empirical research advances to be made regarding this topic. This theoretical chapter hypothesized about the limits of adding context to personality measures. This chapter specifically speculated about the trait-activating effect that sales-related frame-of-references (FORs) had on sales tasks. Trait activation refers to the idea that situational cues may elicit the expression of individual differences in personality. We stated that that the *cues in the personality measure itself* (e.g., personality items) or context in a FOR can provide trait activation. Subsequently, the negative effect of a strong *contextual* situation on the predictive validity of a personality measure will diminish if the personality measure has a FOR that ensures trait activation for *task* performance. As an example, consider the following sales FOR in this item: 'I focus on getting sales deals with clients' (goal orientation). Clearly this FOR has trait-relevant potential for a sales task, namely getting sales deals. It has no trait relevance for performance in strong contextual situations (helping co-workers, volunteering for assignments or showing support for organizational policies and procedures). Thus, sales employees, while completing this measure, may see themselves starting to look for those deals. In other words, they experience trait activation for sales *tasks*. They would not be limited in their answering behavior by a strong *contextual* situation that they work in. Although this idea could be reversed (i.e. a FOR personality measure may still have predictive validity in strong *task*

situations if it has a FOR that is trait relevant for *contextual* performance), we focused on the first scenario because we were interested in sales performance in this study and because sales performance criteria tend to be *task* oriented and less oriented towards *contextual* performance.

Summary of the main findings

Guided by the five central topics in the present dissertation (see above), in the next paragraph an overview of the main findings in this dissertation will be provided.

These findings indicate whether each of these five attempts at improving the predictive validity of personality measures in general and the prediction of sales performance in particular seem to work.

Extending the bandwidth-fidelity discussion with the GFP and other-rated facets

To address and further deepen the bandwidth-fidelity discussion, **chapter 2** studied the predictive validities of three levels of personality measures for two levels of job performance criteria. Both the personality predictors and the sales performance criteria were organized from broad to specific. In the literature there has been a debate about the General Factor of Personality (GFP). Some researchers have suggested that this construct is a substantive one (Musek, 2007; Rushton & Irwing, 2011; Van der Linden et al., 2010a; 2010b), whereas others have argued that it mainly reflects methodological or statistical artifacts (Anusic et al., 2009; Ashton, Lee, Goldberg, & De Vries, 2009; De Vries, 2011). We expected the GFP and the Big Five to be more predictive for broad sales performance criteria than for narrow performance criteria. Furthermore, we expected the narrow facets to be better predictors of narrow sales performance criteria. Data were collected with an e-survey in an international study involving 403 sales employees. The results (**chapter 2**) showed that there indeed was a relatively large general factor explaining almost half of the variance in the Big Five, which we labeled the GFP. The GFP was an effective predictor of the two broadest performance measures and outperformed most of the Big Five factors and all of the narrow personality traits in predicting objectively measured job performance. This latter finding may have implications for the use of personality questionnaires in selecting sales employees, as sales results are often considered to be an important part of sales performance. If the goal is to select sales employees who attain more customers and perform well on other important job aspects (as rated by supervisors), using only the Big Five factors may not generate the optimal result. In these cases providing a GFP score in a personality report might be considered. The benefit of using the GFP to predict sales performance became visible in its consistency as the only valid predictor of both the sales performance ratings by supervisors and the sales results obtained from objective data. Regarding the comparison between the personality levels, we expected an increase in the predictive validity of the narrow personality traits when the narrowness of the job performance criterion increased. This expectation was

partly confirmed by the results, as most of the narrow personality traits showed more predictive validity for narrow performance criteria than for broad performance criteria. The only exception was that the facet Proactivity turned out to be not only a significant predictor of achieving sales results (a narrow performance criterion) but also of general supervisor-rated job performance, a broad performance criterion.

Conceptual alignment

Matching the content of personality predictors with the content of the performance criteria, also labeled as *conceptual alignment*, reflects a process in which personality constructs are linked with conceptually aligned job performance criteria (Campbell, 1990). This process was studied in **chapter 2**. An example of conceptual alignment is to use the personality facet detail orientation to predict the handling of sales administration by a sales employee. To test this strategy, we asked Subject Matter Experts (SMEs) to determine which of the Big Five traits and narrow facets could be aligned with the more specific aspects of sales performance. The results were based on the sample used in **chapter 2**, an international study involving 403 sales employees. Indeed, **chapter 2** showed that conceptual alignment seemed to be a method that improves the predictive validity of personality measures. Two of the Big Five factors showed their highest criterion-related validity for the sales performance criteria to which they were conceptually aligned according to the SMEs. Conscientiousness was an effective predictor of Administration, and Agreeableness was an effective predictor of Customer Relationship Management. This study further found clear indications that narrow traits (facets) indeed best predicted those narrow performance measures with which they were conceptually aligned. For example, the narrow sales task achieving sales results was most optimally predicted by the facet proactivity, which measures behaviors such as ‘self-starting’ and ‘the initiation of new tasks’.

An interesting ad hoc finding in **chapter 2** was that the narrow personality trait with the single highest (negative) predictive validity for several job performance criteria was Social Boldness. This narrow trait measures courage and bravery in social situations. Yet, others may perceive this bravery as arrogance. This result, which has been reported before by Hogan and Hogan (2001) indicates that sales employees who may be perceived as arrogant may be less effective at handling customer relationships and less able to deal with their customers’ objections. Employees who scored higher on Social Boldness also attained fewer new customers. This would suggest that a high score on Social Boldness might have a direct negative effect on both sales ratings and sales results.

In the theoretical **chapter 5**, the idea of conceptual alignment is integrated with the with the so-called Cognitive-Affective System theory of Personality (CAPS, Mischel, & Shoda, 1995). This theory suggests that people are characterized not only by stable individual differences in their overall levels of behavior, but also by distinctive and stable patterns of situation-behavior

relations. An example of this would be a sales person who shows proactive behavior when talking to clients but not when talking to friends. We argued that such situations can be located in the personality measure itself (internal to the measure), by means of a Frame of Reference (FOR). A FOR is a context that is added to a personality measure (e.g., 'I pay attention to details at work' instead of the generic personality item 'I pay attention to details'). Because a FOR consists of behavior descriptors that indicate for which situation the item is contextualized (e.g., school, work), this FOR can then be easily matched with a conceptually aligned criterion. Using a specific FOR personality measure (e.g., 'I focus on achieving sales goals') should make conceptual alignment more effective. Adding behavior descriptors in personality items should make it easier to match these with desired behavior in a work-related criterion (e.g., 'achieving sales results').

Using emotion regulation to predict sales performance

In **chapter 3** we investigated the predictive validity of the four facets of emotional intelligence on performance in high- and low emotional labor sales work. It had been suggested that emotional intelligence is a construct with the potential to predict sales performance (Weitz et al., 2001). Until now, there has been a debate in research (Joseph & Newman, 2010; Newsome & Day, 2000) about the potential of EI to incrementally predict job performance above constructs such as the Big Five personality traits. Researchers went so far as to state that emotional intelligence may be more essential to success in life than cognitive ability (Goleman, 1995; Mayer & Salovey, 1999). Recently, it has been questioned whether EI has any incremental validity over personality traits and cognitive ability (Landy, 2005; Locke, 2005; Murphy, 2006).

Recent research (Joseph & Newman, 2010) suggested—but did not test—that of the four EI facets, only emotion regulation predicts job performance and only in high emotional labor. Emotion regulation is the process in which individuals influence which emotions they have, when they have them, and how they experience and express these emotions. However, the incremental predictive validity of emotion regulation, together with the other EI facets, had never been tested in separate high- and low emotional labor samples. In the study reported in chapter 3 this was empirically investigated among an international sample of 403 sales employees in low emotional labor sales work and a sample of 105 Dutch sales employees in high emotional labor sales work. Note that this low emotional labor sample is the same sample as the one reported in Sitser, Van der Linden, and Born (2013) and as described in chapter 2 of this dissertation. However, in the Sitser et al. (2013) study different research questions were addressed which were unrelated to EI. In the study in chapter 3 we included the results from a cognitive ability test and an emotional intelligence measure. Outcomes of the Big Five Inventory (BFI) and job performance measures were re-used in chapter 3. The high-emotional labor sample in chapter 3 consisted of 105 Dutch sales employees. This high-emotional labor sample was new in chapter 3 and not used in any of the other chapters in this dissertation. We collected data using an e-survey and collected both an

objective sales criterion (sales numbers) and performance ratings by supervisors.

The expectation was that particularly emotion regulation would have predictive validity for sales performance, but only in a high emotional labor sample. The results confirmed this expectation; emotion regulation was the only facet that showed predictive validity for sales performance and only in the high emotional labor sample. However, emotion facilitation also showed predictive validity for sales results in the low emotional sample, which was not in line with the expectations. This latter effect was not very robust because it did not show incremental validity above and beyond personality traits and cognitive ability. Although we did find incremental validity for emotion regulation in a high emotional labor sales sample, the findings, which are mostly in line with the findings by other researchers, indicate that in most cases the general EI construct has no incremental validity beyond personality traits and cognitive ability (Landy, 2005; Locke, 2005; Murphy, 2006). Nevertheless, the EI facet emotion regulation may have added value to personality and cognitive ability for the assessment of sales employees. We found that the EI facet emotion regulation accounted for 6.5% of the total variance in predicting objective sales performance, which would make it a valid predictor of job performance (Schmidt & Hunter, 1991). This finding is in line with findings from a study by Kluepfer, DeGroot, and Choi (2011), who found that emotion management ability, a construct that is suggested to be comparable to emotion regulation, had incremental predictive validity for task performance of incumbents in several jobs.

An interesting ad hoc finding in chapter 2 was that cognitive ability predicted supervisor-rated sales performance, but not objectively measured sales performance, in both high- and low emotional labor samples. Apparently, sales employees who scored higher on cognitive ability received higher ratings from their supervisors, even though they did not actually sell more. This finding is in line with previous studies (Verbeke, Belschak, Bakker, & Dietz, 2008; Vinchur et al., 1998), which all point in the same direction, namely that cognitive ability does not predict objective sales results. Thus, using cognitive ability tests for selecting sales employees should be reconsidered if the goal is to select the employees who will actually sell more.

Other-ratings of personality

Chapter 4 of this dissertation studied the predictive validity of peer-ratings of personality at the trait and facet level, while controlling for supervisor-ratings of performance. In doing so, we introduced the bandwidth-fidelity discussion (Ones & Viswesvaran, 1996) into the research field of other-ratings of personality. One of the reasons for the relatively low validity of personality in predicting job performance may be the overreliance on self-reports (Morgeson et al., 2007). Recent research has confirmed that other-ratings of personality can improve the predictive validity of personality for job performance (Connelly & Ones, 2010; Oh et al., 2011).

In the field study described in chapter 4 we collected data on supervisor-rated performance, self- and peer-ratings of personality on the trait- and facet level among 67 Dutch sales employees,

using a 360-degree feedback questionnaire. We expected that peer-rated personality facets would have more incremental predictive validity for supervisor-rated job performance than peer-rated traits. In addition, we expected that the predictive validity of peer-rated personality traits and peer-rated personality facets could be explained by peer-ratings of performance.

Of the peer-rated Big Five traits, Openness turned out to be the strongest predictor of supervisor-rated job performance. This may seem remarkable as a prior meta-analysis using self-reported personality measures reported that Openness has relatively low validity in predicting performance (Barrick et al., 2001) and Conscientiousness mainly has predictive validity for job performance criteria. On the other hand, prior meta-analytic findings confirmed that, when using other-ratings of personality, Openness is a strong predictor of job performance (Connelly et al., 2010). Another reason for the relatively high predictive validity of Openness may be the criterion that we used, which was objective sales performance. Openness has been found to be related to objective sales performance both in the present dissertation (chapter 2) as in previous research (Furnham & Fudge, 2008).

We found that, beyond self-reports, peer-rated personality facets were better than peer-rated personality traits at predicting supervisor-rated sales performance. This was in line with findings that self-rated Big Five facets may be more predictive of job performance than overlying Big Five traits (e.g., Dudley et al., 2006), but not in line with Salgado et al. (2013) who found that the overlying Big Five traits are the better predictors. However, these earlier studies were all based on self-ratings. Our research was the first to study the predictive validity of peer-rated facets for supervisor-rated performance, while controlling for peer-ratings of performance. More research is obviously needed to further study the predictive validity of other-rated facets. Chapter 4 added to the literature on the bandwidth-fidelity discussion by providing support for the predictive validity of other-rated Big Five facets.

In contrast to our expectations, we found that, at least at the facet level, other-ratings of personality are not highly correlated with ratings of performance. Overall, other-ratings of personality may indeed be an alternative to self-ratings, which may suffer from validity-lowering biases (Morgeson et al., 2007).

Using a Frame-of-Reference to improve the predictive validity of personality measures

In **chapter 5** we attempted to further advance theoretical understanding of the effect of about adding a Frame-of-Reference (FOR) in personality measures (e.g., 'I am focused on details *at work*' instead of the generic item 'I am focused on details'). Researchers have shown that using a FOR in personality measures can improve the predictive validity of these measures (Bing, Whanger, Davison, & VanHook, 2004; Holtz, Ployhart, & Dominguez, 2005; Lievens, De Corte, & Schollaert, 2008). Chapter 5 presents a theoretical paper on how using a FOR in a personality measure can further improve the prediction of job performance in general and the prediction of sales performance specifically.

In this chapter, we first integrated two existing topics into the field of FOR personality measures and subsequently stated two new propositions. The first topic is relating the bandwidth-fidelity discussion to FOR personality measures. This discussion refers to the extent that broad or narrow measures of personality offer predictive validity for job performance (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996). We stated that because broad traits or narrow facets are more concrete after a FOR has been added, it is easier to match the bandwidth of the personality construct with the bandwidth of the predicted work-related criterion. We illustrated how using a FOR personality measure may facilitate choosing the optimal bandwidth of the *criterion*. For instance, consider this item of the personality facet Tidiness (IPIP, Goldberg et al., 2006): 'I like to organize things'. This item attempts to measure organized behavior or tidiness. After adding a behavior descriptor (FOR) to this item it now reads: 'I like to organize my administration at work'. This item now exactly describes which 'narrow' behavior is being measured, namely organizing administration at work. A job criterion that would match this facet in terms of bandwidth could be: 'keeping a tidy administration'. In turn, this matching bandwidth should lead to increased predictive validity.

The second topic we integrated into the field of FOR personality measures is conceptual alignment. This is the idea of conceptually matching personality predictors and performance criteria, which is a process in which personality constructs are linked with conceptually aligned job performance criteria (Campbell, 1990; Sitser, Van der Linden, & Born, 2013). We described how conceptual alignment will improve the predictive validity of personality measures (see also Pace & Brannick, 2010 and Lievens et al., 2008). For instance, when predicting sales criteria, a personality item that contains a sales FOR (e.g., this item of the facet result orientation: 'I focus on achieving sales goals') should facilitate conceptual alignment with a conceptually matching sales performance criterion (achievement of sales goals) and thus improve predictive validity. The usage of a generic personality measure that does not contain a FOR with such sales-related behavior descriptors of conceptual alignment may not yield such validity-improving effects.

The first proposition concerned the potential of a FOR personality measure to predict performance in jobs other than the one it was contextualized for and the potential of a FOR personality questionnaire to measure personality. Because the items in a FOR personality questionnaire measure very specific behavior (e.g., this item of the facet detail orientation: 'I focus on the details in my sales administration'), a FOR may be relevant for a specific job (in this case sales jobs), but not for other jobs. Thus, a questionnaire with this FOR would not necessarily have any predictive validity in other jobs that a (generic) personality measure would have. Therefore, the generalizability of validity results of such a questionnaire to other jobs would be limited. Moreover, we questioned whether a personality measure with such a specific FOR is still measuring personality. We illustrated this issue by comparing the correlations between Conscientiousness facets with a *work*-FOR and a *school*-FOR from a study by Lievens et al. (2008). The average correlations between the same personality facets with a *different* FOR were much

lower than the average correlations between different personality facets with the *same* FOR. Thus, it seems that correlations between contextualized personality scales seem to be caused more by the shared FOR and less by the underlying personality construct.

The second proposition concerned the potential of a FOR personality measure to predict performance in strong situations. Strong situations are situations in which regulations and norms at the workplace guide behavior, so that there is less freedom for individual expression of behavior. Strong situations may cause the variability between people in the use of personality to be lower, because behavior is more strongly directed in a certain direction by the presence of strong situational cues, such as performance guidelines for tasks or regulations. In other words, the predictive power of personality measures should be *lower* in a strong situation and *higher* in a weaker (less strictly defined) situation (Mischel, 1968). We argued that strong situations have a different effect on the predictive validity of FOR personality measures than on generic personality measures, and that this effect depends on the *type* of strong situation. Beaty, Cleveland and Murphy (2001) have divided strong situations in two types. In strong *task* situations, performance guidelines are focused on completing assigned tasks. In strong *contextual* situations, performance guidelines are focused on helping coworkers and showing willingness to volunteer for extra assignments and showing support for policies and procedures. We addressed how trait activation, caused by the FOR, may ensure that FOR-measures remain valid in strong *contextual* situations or strong *task* situations. According to trait activation theory, a situation is relevant to a personality trait if it provides cues for the expression of trait-relevant behavior (Tett & Guterman, 2000). We stated that the *cues in the personality measure itself* (e.g., personality items) or context in a FOR can also provide such cues, that can cause trait activation. For example, consider the contextualized personality item of an Openness scale: 'I am interested in finding new business opportunities'. This FOR would provide trait cues that may predict trait-relevant behavior (finding new business opportunities). We subsequently stated that in strong *contextual* situations, in which the guidelines are limited to helping co-workers and sticking to procedures, a FOR personality measure may still have predictive validity if it has a FOR that is trait relevant for *task* performance (e.g., 'I focus on achieving my sales goals'). Of course, this can also be reversed; a FOR personality measure may still have predictive validity in strong *task* situations if it has a FOR that is trait relevant for *contextual* performance. If a situation is strong both in terms of context and in tasks, the predictive validity of FOR personality measures will be diminished, similar to a generic personality measure.

Personality and EI as predictors of sales performance

The job performance domain that was studied in the present dissertation was sales performance. As many organizations select and employ sales employees, it seems important to determine the predictors of their performance. Traditionally, the personality trait Conscientiousness has been reported as the best predictor of job performance and Openness

had consistently low correlations with job performance, regardless of the type of job (Barrick & Mount, 1991). More specifically, of the Big Five factors, Openness had the lowest true score correlations with job performance across different jobs (Barrick et al., 2001). Interestingly, in two of the studies in the present dissertation Openness turned out to be an effective predictor of sales performance. In chapter 2, Openness predicted objective sales results, and in chapter 4 peer-rated Openness predicted sales performance. Our findings are coherent with earlier findings by Furnham and Fudge (2008), who also found that Openness was the strongest Big Five predictor of sales performance. The finding that the GFP predicted both objective sales results as well as sales performance ratings by managers is new, as this personality construct had not been linked to sales performance before. Given the importance of these two performance criteria, it seems advisable to calculate a GFP score during the selection of sales employees. When predicting the performance on specific sales tasks, the approach of conceptual alignment turned out to be effective. The sales criteria 'achieving sales results' and 'handling administration' were significantly predicted by the narrow facets proactivity and detail orientation respectively.

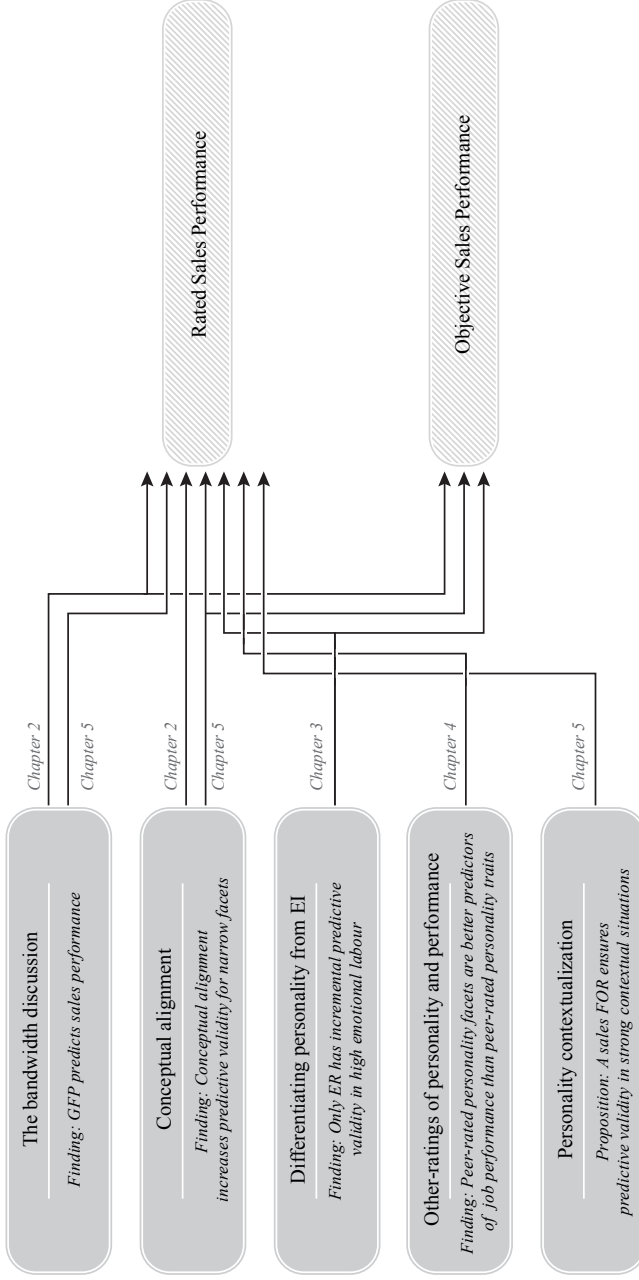
Emotional Intelligence has been suggested to be important for sales performance (Goleman, 1998; Weitz, Castleberry, & Tanner, 2001). However, EI has also been suggested to overlap with personality (Landy, 2005; Locke, 2005; Murphy, 2006). Our results show that the only facet of the EI construct that predicted any sales performance was emotion regulation. It may thus be effective to include an emotion regulation scale for the selection of employees, but only if the goal is to predict sales results in high emotional labor sales work. In low emotional labor sales work, using an EI measure for selecting sales employees seems to be redundant with Big Five personality and cognitive ability.

Other-ratings of personality were suggested to improve the predictive validity of personality measures (Morgeson et al., 2007). Our findings suggest that, above and beyond peer-ratings of sales performance, peer-rated narrow personality facets are better predictors of supervisor-rated sales performance than are peer-rated personality traits. In practice, it would be difficult to use other-ratings of personality during selection of sales employees. However, other-ratings, at least on the facet level, can be used to predict the performance of incumbent sales employees.

By using a personality measure that contains a sales-related Frame of Reference (FOR) it may be possible to further improve the prediction of sales performance. A sales FOR contains descriptions of sales behaviors that have a trait-activating potential for sales tasks.

In theory, sales people that complete such a questionnaire may experience trait activation by the different sales FORs in each of the Big Five scales. For example, consider the conscientiousness scale item from the BFI (John & Srivastava, 1999): 'I see myself as someone who perseveres until the task is finished'. A trait-activating situational cue for this scale is goal-achieving behavior. After adding this cue, the FOR item would be: 'I see myself as someone who perseveres until the sales goal is reached'. This measure should also be predictive in strong contextual situations, as the personality traits of sales employees may be activated by the cues of the FOR in the trait.

Figure 1: Visualization of the findings in the present dissertation



Strengths, Limitations and Suggestions for Future Research

The studies in this dissertation contribute to research on the personality-job performance relationship in four ways. First, this dissertation is the first to extend the bandwidth-fidelity discussion by using broad and narrow performance criteria and broad and narrow measures of personality in a field study. More specifically, this dissertation is the first to introduce the GFP into this discussion. By using broad and narrow performance criteria, we added a job-performance dimension to the bandwidth-fidelity discussion.

Second, the present dissertation showed the incremental predictive validity of emotion regulation, above and beyond the Big Five personality traits and cognitive ability, for sales performance in high and low emotional labor sales jobs. To our knowledge, this has not been done before. Joseph and Newman (2010) only included studies using supervisor-rated job performance as a criterion. A particular asset of the present study is that we expand this criterion domain by including an objective sales performance criterion.

Third, this dissertation showed that on the personality trait level, peer-rated personality ratings have a high correlation with peer-rated sales performance. Previous studies did not take into account the potential overlap of peer-ratings of personality with peer-ratings of job performance; the present dissertation was the first to do so. Further, where most if not all of the studies into other-rated personality had studied the Big Five traits (Connelly & Ones, 2010; Oh et al., 2011), we extended research on other-ratings of personality by going beyond the FFM traits to the level of narrow facets. We showed that these facets have less overlap with peer-rated performance than peer-rated personality traits. Thus it seems that peer-rated personality facets explain a unique portion of variance that is not explained by peer-rated performance.

Fourth, the present dissertation sought to deepen the theory around the Frame of Reference (FOR) effect of personality measures. We argued that although adding a FOR to personality measures should improve their predictive validity for work-related criteria, it may decrease their generalizability for other jobs. However, it was also argued that using a sales-related Frame of Reference may cause trait activation for sales tasks. This may ensure that a FOR personality measure, in contrast to generic personality measures, may predict sales performance in a strong contextual situation where a generic personality measure would not.

There are some limitations of the present dissertation. First, although the GFP turned out to be a good predictor of job performance we recognize that this finding may not provide insight into what the GFP actually reflects. For instance, while some researchers see the GFP as a meaningful personality construct that predicts behavior (Musek, 2006; Van der Linden et al., 2010), others showed that the GFP in personality measures is related to social desirability (Bäckström et al., 2009). Therefore, it can be expected that consensus as to what a GFP actually reflects will not be reached easily. Second, some of the results in the present dissertation were based on very specific samples of sales employees, namely an international sample of employees responsible for selling trust services and corporate financial planning. As this is a specific type of

sales work, one should be cautious about generalizing these results to other sales jobs, such as car sales or real estate. A third limitation in the present dissertation is that the study regarding the incremental predictive validity of emotion regulation used a self-rated ability EI measure. Recent studies (O'Boyle et al., 2011; Joseph & Newman, 2010) show that the predictive validity of EI may depend on the type of EI measure that is used (ability- or trait EI measures). Thus, we suggest replicating our findings in a study that uses these other types of EI measures. A final limitation worth mentioning is that the findings in chapter 4 and 5 are based on findings from studies that used incumbent samples. In chapter 4, an incumbent sample was used to study the predictive validity of other-ratings of performance. In chapter 5 a theoretical model on contextualized personality was presented that was based on findings from studies that also used incumbent samples. There is some evidence that data from personality measures may slightly differ when applicant samples are used (e.g., Robie, Schmit, Ryan & Zickar, 2001). Therefore, we propose that our findings are replicated (chapter 4) and further studied (chapter 5) while using applicant samples in future research.

From the findings in the present dissertation, several interesting directions for future studies can be recommended. First, it would be interesting to study if the results regarding the predictive validity of the GFP, the Big Five traits and the narrow personality traits are also valid for other sales jobs, as we used a sample consisting of a specific type of sales employees. Second, it has been suggested that performance ability measures of EI have more overlap with measures of cognitive ability (Joseph & Newman, 2010) compared to self-rated measures. In future research it may be interesting to further test this suggestion in a field study. Third, other-ratings of personality facets seem to be incrementally predictive for supervisor-rated performance, above and beyond other-ratings of performance. However, we used single item rating scales in chapter 4. To test this properly we suggest future studies to test this finding while using multi-item scales with adequate alpha coefficients. Finally, the effects of contextualization on the generalizability of personality measures have not been tested in a field study. Therefore, it would be interesting to empirically examine the potential decrease in generalizability of contextualized personality measures across different jobs or different organizations.

Practical Implications

The present dissertation demonstrated that the doubts raised by Morgeson et al. (2007) about the predictive validity of personality measures might not be valid in all occasions. The empirical and theoretical topics that were discussed in this dissertation, in an attempt to improve the predictive validity of personality measures for various sales performance criteria, have provided some useful practical implications. We have summarized these implications in Figure 2. First, in chapter 2 it was demonstrated that scoring the GFP in a personality questionnaire may be useful for selecting sales employees, as this construct predicted attaining new customers as well as supervisor-rated sales performance. Further, this chapter has shown

that although Conscientiousness and Extraversion are often considered to be the best of Big Five at predicting job performance, practitioners who have to select sales employees might also want to take Openness into account. Openness predicted objectively measured sales success, whereas Conscientiousness and Extraversion did not. When selecting employees for relatively narrow sales tasks, our suggestion would be to carefully align personality traits to the designated task as this process seems to improve the prediction of future performance of sales employees.

The personality facet Social Boldness appeared to be negatively related to supervisor-rated sales performance and sales results, indicating that selection practitioners should use caution when sales employees score high on this narrow trait. Second, in chapter 3 the findings suggested that the only part of the EI construct that incrementally predicts any form of sales performance was emotion regulation. However, only when sales results were predicted did emotion regulation account for a unique portion of variance. Thus, the results in the present dissertation suggest that using EI measures during sales assessments in low emotional sales jobs would not add much variance to a personality and cognitive ability measure. Only the facet emotion regulation incrementally predicted sales performance, and only in high emotional labor sales work. Third, chapter 4 has shown that peer-rated personality facets were able to predict job performance, above and beyond peer-rated performance. Using other-rated personality measures (which measure facet scores) during sales assessments may thus be an alternative to self-ratings. Fourth, in chapter 5 we suggested that when using a contextualized personality measure for a specific job, this measure should be a robust predictor of job performance. However, the downside of this contextualization is that the personality measure cannot be used for other jobs due to its limited generalizability. We have shown that creating a contextualized personality measure that contains sales-related FORs may be effective, as these FORs may cause trait activation for sales tasks. Thus, for assessing sales employees in a strong contextual situation, it may be advisable to create such a personality measure. We have to note though that this measure cannot be used for jobs other than sales jobs, due to its limited generalizability.

Table 1. *Implications of the results of this dissertation for the prediction of sales performance***How to use the results of this dissertation for the prediction of sales performance**

- 1 Besides Conscientiousness and Extraversion, also focus on scores on Openness, as this Big Five trait seems to be linked with the performance of sales employees.
- 2 Focus on high scores on the GFP; this trait predicts sales performance and sales results.
- 3 Use narrow personality facets to predict conceptually aligned sales tasks.
- 4 Be cautious regarding high scores on Social Boldness, as this trait seems to be negatively related to sales performance.
- 5 Use the EI facet emotion regulation to predict sales results in high emotional labour sales jobs.
- 6 Next to a personality measure and a cognitive ability test, there is no need to use EI measures in low emotional labor sales jobs.
- 7 If the goal is to select sales employees that get better (objective) sales results, there is no need to use cognitive ability tests.
- 8 Use other-rated personality facets to predict the performance of incumbent sales employees.
- 9 Use a personality questionnaire that was contextualized for sales performance, and ensure that the FOR in the items contains trait-activating cues for sales tasks.

CONCLUSION

This dissertation shows that personality can be used to predict sales performance. Findings show that using a GFP score may be useful for selecting sales employees. If one wants to select personnel for rather specific and more restricted tasks, such as dealing with customers or doing administrative work, then the use of more narrow measures may be better. Depending on the nature of these specific tasks, using either the Big Five dimensions or narrow traits should depend on careful alignment between the content of the trait (either Big Five or narrower) and the content of the job. However, the predictive validity of personality appeared to depend on the sales criterion that was predicted. Apparently, sales tasks differ so much that they are predicted by different personality traits. Therefore, in order to ensure optimal predictive validity, both in practice and in research, it is important to clearly specify the sales performance criterion before the optimal personality predictor is selected. Although different meta-analyses in the past 20 years have reported that Conscientiousness and Extraversion are predictors of sales performance, we found in two independent samples that Openness predicted sales performance. Possibly, being open and interested in new things is related to finding new customers.

Furthermore, the results of our study assert the importance of emotion regulation for high emotional labor sales jobs. This EI facet is an incrementally valid predictor of sales performance, above and beyond personality. It seems that what is vital for successful sales performance is the ability to actually control one's emotions in order to achieve one's goals. For example, successful sales employees may be those who can induce positive mood states in others in order to better connect with customers, or those who can overcome annoyance when encountering difficult customers. The present study seems to indicate that such abilities are not just dependent on personality (Big Five) or cognitive ability, but go beyond these traits. Specifically learning to control one's own emotions may be a good way for sales employees to improve their performance.

Overall, other-ratings of personality may be an alternative to self-ratings. Performance ratings seem to have high correlations with personality ratings on the trait level. More research is needed at the facet level to determine the reason for this overlap because most, if not all, current research into other-ratings of personality is done at the trait level.

Adding a sales FOR to a personality measure may have the potential to improve the predictive validity for sales performance. However, adding extensive sales-related context to a personality measure may cause the generalizability of such a measure to decrease. However, as sales employees form a relatively large part of the total employee population, developing a personality measure with a sales FOR should be worthwhile. Our suggestion that a sales FOR may cause trait activation in strong contextual situations can then be examined.

To further optimize the prediction of sales performance with personality measures, we suggest more focus on the nature of sales performance criteria. It seems that the predictive validity of the predictors used in the present dissertation depended on the sales criterion that was predicted (broad and subjective, narrow and subjective, or objective). It could be that the tasks of a sales employee are so diverse that a wide range of personality predictors is needed to predict performance in this type of job. Personality validity research has the common practice to mainly study the personality construct when trying to improve personality as a predictor of job performance. We therefore suggest further broadening this practice into the nature of the sales performance criterion, such as the type of sales job.

Samenvatting



In de westerse wereld gebruiken veel organisaties persoonlijkheidsvragenlijsten voor de selectie van sollicitanten. Ook wanneer het gaat om verkoopfuncties of voor het testen van verkoopmedewerkers worden deze testen ingezet. Een relevant deel van de werkende bevolking is werkzaam in verkoopfuncties. Meer dan 10% van de totale beroepsbevolking in de VS bijvoorbeeld is werkzaam in een verkoopfunctie (Bureau of Labor Statistics, 2004). Hoewel dergelijke statistieken voor Europa niet voorhanden zijn, komen verkoopfuncties ook in deze regio veel voor. Inzicht in de waarde van persoonlijkheidstesten in de selectieprocedure voor verkoopfuncties is daarom van belang. Er is reeds veel onderzoek gedaan naar persoonlijkheidskenmerken als voorspellers van verkoopprestaties (Barrick et al., 1991; Verbeke, Dietz & Verwaal, 2011; Vinchur et al., 1996; Warr et al., 2005). Uit de resultaten van meta-analyses blijkt dat consciëntieusheid en extraversie significante voorspellers zijn van door leidinggevendende beoordeelde verkoopprestaties (Barrick et al., 1991; Hurz et al., 2000; Salgado, 1997; Vinchur & Schippman, 1996). Daarnaast komt uit een afzonderlijk onderzoek (Furnham en Fudge, 2008) naar voren dat naast consciëntieusheid ook openheid (voor ervaringen) een voorspeller is van objectief gemeten verkoopresultaten (omzet). De gevonden resultaten lijken dus te verschillen per type criterium (objectief of subjectief gemeten verkoopresultaten). Om deze reden zijn in dit proefschrift zowel objectief gemeten verkoopprestaties (omzet) alsook beoordelingen van verkoopprestaties door managers als prestatiecriteria gebruikt.

In studies die in bredere zin als doel hadden om de voorspellende kracht (de zogeheten criteriumvaliditeit) van persoonlijkheidsvragenlijsten te verbeteren, rapporteerden onderzoekers uiteenlopende resultaten. Morgeson et al. (2007) plaatsten vraagtekens bij het potentieel van persoonlijkheidstesten om werkgedrag te voorspellen. Dergelijke vraagtekens zijn tot op heden een motivatie voor wetenschappers om dit onderwerp verder te bestuderen (bijvoorbeeld Hogan, 2005; Ones, Dilchert, Viswesvaran, & Judge, 2007). Het belangrijkste kritiekpunt dat Morgeson et al. (2007) maakten is dat het gebruik van persoonlijkheidstesten zou moeten worden heroverwogen omdat de criteriumvaliditeit van deze testen laag is. Dit punt wordt ondersteund door verschillende onderzoeken waaruit blijkt dat de validiteit van persoonlijkheidstesten voor werkgerelateerde criteria varieert van laag tot matig. De geobserveerde effectgroottes uit deze onderzoeken variëren van $r = .07$ (Barrick et al., 2001) tot $r = .37$ (Judge et al., 2002).

De discussie over de vraag of persoonlijkheid als een voorspeller van werkgedrag te gebruiken is, onderstreept de behoefte aan verder onderzoek over dit onderwerp. Daarom worden in dit proefschrift vijf verschillende manieren van aanpak onderzocht die mogelijk het verband tussen persoonlijkheid en werkgedrag zouden kunnen verbeteren, specifiek gericht op verkoopfuncties.

Overzicht van de empirische en theoretische bevindingen

Dit proefschrift rapporteert over vijf verschillende manieren van aanpak om de criteriumvaliditeit van persoonlijkheidstesten te verbeteren, specifiek met betrekking tot verkoopprestaties. Met deze vijf manieren van aanpak als leidraad zal een overzicht gegeven worden van de empirische bevindingen uit de studies. Hierbij wordt niet noodzakelijk de hoofdstukvolgorde van het proefschrift aangehouden.

De uitbreiding van de 'bandbreedte'-discussie: De algemene factor van persoonlijkheid (GFP) en persoonlijkheidsfacetten die door collega's zijn beoordeeld

Zowel de persoonlijkheidskenmerken als de prestatiecriteria van verkopers zijn georganiseerd van breed (algemeen) tot smal (specifiek). Brede (of algemene) persoonlijkheidskenmerken zijn bijvoorbeeld Big Five schalen zoals extraversie. Smalle (of specifieke) kenmerken zijn de onderliggende persoonlijkheidsfacetten van de Big Five, zoals proactiviteit. Een breed prestatiecriterium is bijvoorbeeld het algemene werkgedrag van verkopers. Een specifiek prestatiecriterium kan een specifieke taak van verkopers zijn, zoals het bijhouden van een verkoopadministratie. Met als doel het uitbreiden en verdiepen van de bandbreedte-discussie wordt in **hoofdstuk 2** de criteriumvaliditeit van drie hiërarchische niveaus van persoonlijkheidsmeting voor twee niveaus van prestatiecriteria onderzocht.

In de wetenschappelijke literatuur is een discussie gaande over de algemene factor van persoonlijkheid (*General Factor of Personality*, GFP). De GFP wordt beschouwd als het meest brede persoonlijkheidskenmerk, dat zich aan de top van de hiërarchische structuur van persoonlijkheid bevindt, boven de Big Five schalen. Sommige onderzoekers hebben gesuggereerd dat dit persoonlijkheidsconstruct een wezenlijk en betekenisvol construct is (Musek, 2007; Rushton & Irwing, 2011; Van der Linden et al., 2010a; 2010b), terwijl anderen beargumenteren dat de GFP slechts een reflectie is van methodologische of statistische artefacten (Anusic et al., 2009; Ashton, Lee, Goldberg, & De Vries, 2009; De Vries, 2011).

In dit proefschrift werd verwacht dat het gebruik van de GFP de voorspelling van verkoopprestaties zou kunnen verbeteren. De GFP zou met name brede verkoopprestatiecriteria (denk aan algemene verkoopprestaties) kunnen voorspellen en in mindere mate specifieke verkoopprestatiecriteria (denk aan specifieke verkooptaken) kunnen voorspellen. Deze verwachting was gebaseerd op eerder onderzoek waarin werd gesuggereerd dat algemeen werkgedrag het best voorspeld zou kunnen worden door een breed persoonlijkheidskenmerk (Ones & Viswesvaran, 2005). Daarnaast werd verwacht dat specifieke persoonlijkheidsfacetten betere voorspellers zijn van specifieke verkoopprestatiecriteria. De data van de verkopers werden verzameld middels een online persoonlijkheidstest. Het werkgedrag van de verkopers werd gemeten door een online beoordeling door hun managers (beoordeling van algemeen werkgedrag) en door het verzamelen van objectieve verkoopcriteria (hoeveelheid nieuwe

klanten). De steekproef bestond uit een groep van 403 verkopers uit verschillende landen die werkzaam waren voor hetzelfde Nederlandse bedrijf. De verkopers verkochten financiële producten.

De resultaten van **hoofdstuk 2** laten zien dat de GFP inderdaad een effectieve voorspeller was van de twee breedste werkprestatiecriteria, namelijk beoordelingen (door managers) van algemeen werkgedrag en het objectief gemeten verkoopprestatie criterium (hoeveelheid nieuwe klanten), en dat de GFP een betere voorspeller van het objectief gemeten verkoopprestatie criterium was dan de meeste Big Five persoonlijkheidsfactoren en de specifieke persoonlijkheidsfacetten afzonderlijk. Deze resultaten laten zien dat wanneer het doel is om verkopers te selecteren die zowel meer klanten binnenhalen als goed presteren op andere belangrijke aspecten van het werk (gemeten middels beoordelingen door managers), alleen het gebruik van Big Five factoren als voorspellers niet het optimale resultaat op hoeven te leveren. Voor een dergelijk doel zou het genereren van een persoonlijkheidsrapport, met daarin een score op de GFP, toegevoegde waarde kunnen hebben. Het voordeel van het gebruik van de GFP om verkoopprestaties te voorspellen werd duidelijk door het vermogen van de GFP om als enige van de persoonlijkheidskenmerken zowel beoordelingen van verkoopprestaties door managers als objectief gemeten verkoopprestaties te voorspellen.

Verder werd een toename van de criteriumvaliditeit van specifieke persoonlijkheidskenmerken verwacht wanneer de specificiteit van de verkoopprestatiecriteria toenam. Deze verwachting werd bevestigd door de resultaten. De meeste specifieke persoonlijkheidsfacetten hadden meer criteriumvaliditeit voor specifieke verkoopprestatiecriteria dan voor brede prestatiecriteria. De enige uitzondering was dat het specifieke facet *zelfstartend* niet alleen criteriumvaliditeit had voor het behalen van verkoopresultaten (*achieving sales results*, een specifiek verkoopprestatie criterium) maar ook voor door managers beoordeeld algemeen werkgedrag (een breed verkoopprestatie criterium). Dit resultaat past bij eerder gepubliceerd meta-onderzoek waaruit blijkt dat proactieve persoonlijkheid toegevoegde waarde heeft boven de Big Five dimensies in het voorspellen van werkgerelateerde criteria zoals werkprestaties (Fuller & Marler, 2009).

De conceptuele relatie tussen persoonlijkheidskenmerken en verkoopprestaties

Het conceptueel 'matchen' van een persoonlijkheidskenmerk met een werkprestatie criterium, wordt vaak aangeduid met de Engelse term *conceptual alignment* (conceptueel verbinden; Campbell, 1990). Conceptueel verbinden is een proces waarin gezocht wordt naar de conceptuele overlap tussen een persoonlijkheidskenmerk en een werkprestatie criterium. Dit proces is bestudeerd in **hoofdstuk 2**, waarbij de verwachting was dat het conceptueel verbinden van een persoonlijkheidskenmerk (de predictor) met een criterium tot een verbetering van de voorspellende kracht zou moeten leiden. Deze verwachting ligt in de lijn van eerder onderzoek dat liet zien dat verkoopprestaties werden voorspeld door een conceptueel overlappend

persoonlijkheidskenmerk; extraversie bleek bijvoorbeeld een significante voorspeller van verkoopprestaties te zijn (Barrick & Mount, 1991; Hurtz & Donovan, 2000). Een voorbeeld van het conceptueel verbinden van een predictor met een criterium is het gebruik van het persoonlijkheidsfacet *detailgerichtheid* om de prestatie van een verkoper te voorspellen op het gebied van het bijhouden van de verkoopadministratie. Teneinde de predictoren conceptueel te verbinden aan verschillende criteria werd gebruikgemaakt van tien zogenaamde *Subject Matter Experts* (SME's). Deze experts waren vijf arbeids- en organisatiepsychologen met een MSc-titel en vijf met een PhD-titel. Aan de SME's werd gevraagd om te bepalen welke Big Five persoonlijkheidskenmerken en welke specifieke persoonlijkheidsfacetten inhoudelijk verwant waren aan een specifiek verkoopprestatiecriteria. De resultaten waren gebaseerd op de steekproef van **hoofdstuk 2**, te weten een groep van 403 verkopers uit verschillende landen die werkzaam waren voor hetzelfde bedrijf. De resultaten laten zien dat conceptuele overlap inderdaad de criteriumvaliditeit van persoonlijkheidstesten lijkt te vergroten. Twee van de Big Five factoren hadden de hoogste criteriumvaliditeit voor de verkoopprestatiecriteria waarmee ze gekoppeld waren door de SME's. Consciëntieusheid bleek met name een effectieve voorspeller van het bijhouden van een verkoopadministratie, en vriendelijkheid was een effectieve voorspeller van het bouwen aan relaties met klanten. Er waren tevens duidelijke aanwijzingen dat de specifieke verkoopprestatiecriteria het best voorspeld werden door de specifieke persoonlijkheidsfacetten waaraan ze conceptueel gerelateerd werden door de SME's. Bijvoorbeeld: het specifieke criterium *behalen van verkoopresultaten* werd het best voorspeld door het persoonlijkheidsfacet *zelfstartend*, dat proactief gedrag van verkopers meet.

Een interessant ad hoc resultaat in **hoofdstuk 2** was dat het facet *sociale bravoure* de hoogste negatieve criteriumvaliditeit liet zien voor een aantal prestatiecriteria. Dit persoonlijkheidsfacet meet durf en lef in sociale situaties. Echter, anderen kunnen deze durf of lef waarnemen als arrogantie. Dit resultaat bevestigt eerdere bevindingen (Hogan & Hogan, 2001) en is een indicatie dat verkopers die worden gezien als arrogant minder goed in staat zijn om klantrelaties op te bouwen en ook minder goed in staat zijn om met bezwaren van klanten om te gaan. Verkopers die een hoge score hadden op het facet *sociale bravoure* haalden ook minder nieuwe klanten binnen. Deze resultaten suggereren dus dat een hogere score op *sociale bravoure* zowel een negatief effect heeft op beoordelingen van verkoopprestaties door managers als op objectief gemeten verkoopresultaten.

In het theoretische **hoofdstuk 5** wordt het idee van conceptueel verbinden tussen predictoren en criteria geïntegreerd in de CAPS theorie van Mischel en Shoda (*Cognitive-Affective System theory of Personality*; Mischel & Shoda, 1995). Deze theorie suggereert dat mensen niet alleen worden gekenmerkt door stabiele individuele verschillen in gedrag ongeacht de situatie, maar ook door unieke en stabiele patronen van gedrag binnen specifieke situaties. Een voorbeeld van deze theorie is dat de ene verkoper proactief gedrag kan vertonen wanneer hij met klanten praat maar niet wanneer hij met vrienden praat, terwijl een andere verkoper wellicht meer proactief

gedrag bij vrienden vertoont en juist minder in de omgang met klanten. In dit hoofdstuk werd gesteld dat deze situaties ook in de persoonlijkheidstest zelf kunnen voorkomen, middels de aanwezigheid van een specifieke context (frame-of-reference, FOR; zie bijvoorbeeld Lievens, De Corte & Schollaert, 2008) in de items van de test. Een FOR is een specifieke context die is toegevoegd aan een persoonlijkheidstest (bijvoorbeeld: 'Ik heb aandacht voor details *op het werk*', in plaats van het standaard item: 'Ik heb aandacht voor details'). Omdat een FOR bestaat uit specifieke beschrijvingen van gedrag die een duidelijke indicatie vormen voor de situatie waarvoor het item is gecontextualiseerd (bijvoorbeeld voor school of werk), kan deze FOR gemakkelijk verbonden worden aan een conceptueel overlappend verkoopprestatie criterium. Het gebruiken van een persoonlijkheidstest met een specifieke FOR (bijvoorbeeld: 'Ik richt mij op het behalen van verkoopdoelen') zou het proces van conceptueel verbinden aan een criterium (bijvoorbeeld: 'het behalen van verkoopresultaten') gemakkelijker en effectiever moeten maken, is de gedachte die in dit hoofdstuk verder theoretisch is uitgewerkt.

Het voorspellen van verkoopprestaties met emotieregulatie

Hoofdstuk 3 rapporteert over een studie naar de criteriumvaliditeit van de vier facetten van emotionele intelligentie (EI). Het gaat om de volgende facetten: emotieperceptie, emotiebegrip, emotiefacilitatie en emotieregulatie (Mayer & Salovey, 1997). De criteriumvaliditeit werd afzonderlijk bestudeerd in verkoopwerk met veel emotionele eisen (verkopers met veel verschillende klanten) en in verkoopwerk met weinig emotionele eisen (verkopers met slechts enkele klanten). Weitz et al. (2001) suggereerden dat emotionele intelligentie een begrip is dat het potentieel heeft om verkoopprestaties te voorspellen. Echter, de criteriumvaliditeit van de afzonderlijke EI-facetten voor verkoopprestaties was nog niet eerder onderzocht.

Op dit moment is er een discussie gaande tussen onderzoekers over het potentieel van emotionele intelligentie om werkgedrag incrementeel te voorspellen boven Big Five persoonlijkheidskenmerken (Joseph & Newman, 2010; Newsome & Day, 2000). Sommige onderzoekers hebben zelfs gesteld dat emotionele intelligentie belangrijker is voor succes in het leven dan iemands cognitieve intelligentie (IQ; Cooper & Sawaf 1997; Goldman 1995, 1998b; Mayer & Salovey 1995, 1997; Salovey & Mayer 1990; Weisinger 1998). Echter, niet al te lang geleden is deze stelling bekritiseerd, en hebben onderzoekers zich afgevraagd of emotionele intelligentie sowieso enige incrementele criteriumvaliditeit heeft boven persoonlijkheid en intelligentie (Landy, 2005; Locke, 2005; Murphy, 2006; cf. Van Rooy & Viswesvaran, 2004). In een recente meta-analyse van Joseph en Newman (2010) werd gesuggereerd dat van de vier EI-facetten alleen emotieregulatie werkgedrag kan voorspellen en alleen in werk met veel emotionele eisen. Emotieregulatie is het proces waarin mensen hun eigen emoties kunnen beïnvloeden wanneer ze deze hebben en hoe ze deze emoties ervaren en uiten. Er is echter nog niet eerder nagegaan of emotieregulatie, samen met de andere drie facetten van emotionele intelligentie, toegevoegde voorspellende kracht heeft boven persoonlijkheid en intelligentie,

voor werk met veel emotionele eisen, en afzonderlijk voor werk met weinig emotionele eisen. In **hoofdstuk 3** werd dit nagegaan in een steekproef van 403 verkopers met werk met weinig emotionele eisen, en in een aparte steekproef van 105 verkopers met werk met veel emotionele eisen. De steekproef van 403 verkopers met werk met weinig emotionele eisen is dezelfde steekproef die ook werd gebruikt in hoofdstuk 2 van dit proefschrift (Sitsler, Van der Linden & Born, 2013). Echter, in hoofdstuk 3 gebruikten we scores op algemene intelligentie en scores op de 4 EI facetten. Deze data werd niet gebruikt in hoofdstuk 2. De persoonlijkheidsscores op de BFI (John & Srivastava, 1999), de scores op algemeen werkgedrag en de scores op het objectieve prestatie criterium zijn hergebruikt in hoofdstuk 3. De steekproef van 105 verkopers met werk met veel emotionele eisen was nieuw en nog niet eerder gebruikt in dit proefschrift. De data werden bij de verkopers verzameld middels een online vragenlijst. Daarnaast werden van de verkopers zowel objectieve verkoopgegevens (hoeveelheid nieuwe klanten) als beoordelingen van verkoopprestaties door managers verzameld.

Er werd verwacht dat met name emotieregulatie de verkoopprestaties zou voorspellen, maar alleen in werk met veel emotionele eisen. De resultaten bevestigden deze verwachting. Emotieregulatie was het enige facet dat verkoopprestaties voorspelde, en alleen in de steekproef van verkopers met werk met veel emotionele eisen. Echter, het EI facet emotiefacilitatie (de vaardigheid om emoties in verschillende situaties te gebruiken om zo het behalen van doelen te faciliteren) bleek de verkoopprestaties te voorspellen van verkopers met werk met weinig emotionele eisen. Deze bevinding was niet in lijn met de hypothese, de verwachting was dat alleen emotieregulatie verkoopgedrag zou voorspellen. Het effect van emotiefacilitatie was overigens niet incrementeel: dit facet voorspelde niet boven persoonlijkheid en intelligentie. Hoewel het *specifieke* EI-facet emotieregulatie wel incrementele validiteit had voor verkopers met werk met veel emotionele eisen, waren de resultaten van **hoofdstuk 3** over het algemeen in lijn met de algemene opvatting onder onderzoekers dat in de meeste gevallen het *algemene* EI construct geen incrementele validiteit heeft boven persoonlijkheidskenmerken en intelligentie (Landy, 2005; Locke, 2005; Murphy, 2006; Van Rooy & Viswesvaran, 2004).

Niettemin, de resultaten van **hoofdstuk 3** suggereren dat het specifieke EI-facet emotieregulatie voorspellende waarde kan hebben tijdens de selectie van verkopers in werk met veel emotionele eisen, naast een persoonlijkheidstest en een intelligentietest. Emotieregulatie verklaarde 6,5% van de totale variantie in het voorspellen van objectief gemeten verkoopresultaten. Dit maakt dit facet een valide voorspeller van de prestaties van verkopers in werk met veel emotionele eisen (Schmidt & Hunter, 1991). Deze bevinding bevestigt een recente studie van Kluemper, DeGroot en Choi (2011), die vonden dat vaardigheid in het hanteren van emoties (*emotion management ability* - een construct dat vergelijkbaar is met emotie regulatie) incrementele validiteit liet zien voor taakprestaties van werknemers in verschillende organisaties.

Een interessante ad hoc bevinding in **hoofdstuk 3** was dat intelligentie een significante voorspeller was van beoordelingen van verkoopprestaties door managers, maar niet van objectief gemeten verkoopresultaten, zowel voor verkopers met werk met veel emotionele eisen als voor

verkopers met werk met weinig emotionele eisen. Blijkbaar ontvingen intelligente verkopers betere beoordelingen van hun managers, terwijl ze niet meer verkochten. Deze bevinding ondersteunt eerdere bevindingen van Verbeke, Belschak, Bakker en Dietz (2008) en Vinchur en Schipmann (1998), die ook rapporteerden dat scores op intelligentietesten geen positieve relatie hadden met verkoopprestaties. Deze bevindingen uit onafhankelijke empirische studies wijzen alle in dezelfde richting: algemene intelligentie is geen goede voorspeller van verkoopresultaten. Deze resultaten zouden een reden kunnen zijn om het gebruik van intelligentietesten tijdens de selectie van verkopers te heroverwegen wanneer het doel is om verkopers te selecteren die ook daadwerkelijk meer verkopen.

De beoordeling van persoonlijkheid door anderen

In **hoofdstuk 4** werd de criteriumvaliditeit van door collega's beoordeelde persoonlijkheidskenmerken en specifieke persoonlijkheidsfacetten onderzocht, terwijl er werd gecontroleerd voor door collega's beoordeelde werkprestaties. Een van de mogelijke redenen waarom de criteriumvaliditeit van persoonlijkheidstesten zo laag is, is het gebruik van zelfbeoordelingen om persoonlijkheid te meten (Morgeson, et al., 2007). Recent onderzoek laat zien dat beoordelingen van persoonlijkheid door anderen de criteriumvaliditeit van persoonlijkheid voor werkprestaties zou kunnen verbeteren (Connelly & Ones, 2010; Oh et al., 2011).

Hoofdstuk 4 beschrijft een studie waarin data werden verzameld over door managers beoordeelde werkprestaties van hun medewerkers, beoordelingen door deze medewerkers van hun eigen persoonlijkheid, beoordelingen van hun persoonlijkheid door collega's, en beoordelingen van hun werkprestaties door collega's. De zelfbeoordelingen en de beoordelingen door collega's werden gemeten op Big Five niveau en ook op het niveau van de onderliggende persoonlijkheidsfacetten. De data werden verzameld onder 67 verkopers via het gebruik van een online vragenlijst. Er werd verwacht dat beoordelingen van specifieke persoonlijkheidsfacetten door collega's meer toegevoegde voorspellende kracht zouden hebben boven zelfbeoordelingen dan door collega's beoordeelde Big Five kenmerken. Dit werd verwacht omdat eerder werd gerapporteerd dat zelfbeoordelingen van specifieke facetten meer voorspellende kracht hebben dan Big Five kenmerken (Dudley et al. 2006). Op het gebied van beoordelingen van persoonlijkheid door anderen is dit idee nog niet eerder onderzocht. De studie die in **hoofdstuk 4** wordt gerapporteerd tracht in deze leemte te voorzien. Daarnaast werd verwacht dat de criteriumvaliditeit van de door collega's beoordeelde facetten en Big Five factoren overlap zou vertonen met de collega's beoordeelde werkprestatie. Ook dit was nog niet eerder onderzocht.

Van de door collega's beoordeelde Big Five factoren bleek openheid de sterkste voorspeller te zijn van door managers beoordeelde werkprestatie. Deze bevinding lijkt opvallend omdat uit de meeste meta-analyses, die gebruik maken van zelfbeoordeelde persoonlijkheid, blijkt dat openheid werkprestaties over het algemeen juist slecht voorspelt, terwijl consciëntieusheid daarentegen een goede voorspeller blijkt (Barrick & Mount, 2001). Interessant is dat de

huidige bevindingen een eerdere meta-analyse over beoordelingen van persoonlijkheid door anderen lijkt te bevestigen, waaruit ook blijkt dat openheid een significante voorspeller is van werkprestaties (Connelly & Ones, 2010). Een mogelijke verklaring voor de relatief hoge validiteit van openheid is het feit dat objectief gemeten verkoopprestatie als criterium werd gebruikt. Openheid werd namelijk al eerder gerapporteerd als voorspeller van objectief gemeten verkoopprestaties, zowel in dit proefschrift (**hoofdstuk 2**) als in een andere onafhankelijke studie (Furnham & Fudge, 2008). Blijkbaar is open zijn en geïnteresseerd zijn in nieuwe dingen (openheid) gerelateerd aan het vinden van nieuwe klanten.

In **hoofdstuk 4** wordt voorts gerapporteerd dat door anderen beoordeelde persoonlijkheidsfacetten meer incrementele criteriumvaliditeit bovenop zelfbeoordeelde persoonlijkheid hadden dan door anderen beoordeelde Big Five factoren. Deze bevinding bevestigt eerdere studies over de voorspellende kracht van zelfbeoordeelde persoonlijkheid. Deze eerdere studies rapporteerden dat specifieke persoonlijkheidsfacetten betere voorspellers van werkgedrag zijn dan de meer algemene Big Five factoren (e.g., Dudley et al., 2006). Er is ook recent onderzoek waaruit blijkt dat juist de Big Five factoren betere voorspellers zijn van werkgedrag (Salgado et al., 2013). Echter, deze studies waren alle gebaseerd op zelfbeoordeelde persoonlijkheid. Het in **hoofdstuk 4** beschreven onderzoek is het eerste dat de incrementele criteriumvaliditeit van beoordelingen van specifieke persoonlijkheidsfacetten door collega's heeft onderzocht. Al met al heeft de in **hoofdstuk 4** beschreven studie de bandbreedte-discussie uitgebreid met gegevens over de criteriumvaliditeit van door collega's beoordeelde persoonlijkheidsfacetten. In tegenstelling tot de verwachtingen, werd gevonden dat op het niveau van de persoonlijkheidsfacetten, de beoordelingen van persoonlijkheid door collega's niet hetzelfde waren als beoordelingen van werkprestatie door collega's. Over het algemeen lijken de resultaten erop te wijzen dat beoordelingen van persoonlijkheid door anderen een beter alternatief kunnen zijn voor zelfbeoordelingen van persoonlijkheid (Morgeson et al., 2007).

Het gebruik van een specifieke context voor het verbeteren van de criteriumvaliditeit van persoonlijkheidstesten: Een theoretisch model

In **hoofdstuk 5** werd het gebruik van een specifieke context (*frame-of-reference* ofwel een *FOR*; zie bijvoorbeeld Lievens, De Corte & Schollaert, 2008) in persoonlijkheidstesten onderzocht. Een voorbeeld van een *FOR* in een persoonlijkheidsitem is: 'Ik ben gericht op details op *het werk*' in plaats van het generieke item: 'Ik ben gericht op details'. Onderzoek heeft laten zien dat het gebruik van een *FOR* de criteriumvaliditeit van een persoonlijkheidstest kan verbeteren (Bing, Whanger, Davison, & VanHook, 2004; Holtz, Ployhart, & Dominguez, 2005; Lievens, De Corte, & Schollaert, 2008). **Hoofdstuk 5** is een theoretisch hoofdstuk dat uiteenzet hoe een *FOR* deze validiteit verder zou kunnen verbeteren, zowel ten aanzien van werkprestaties in het algemeen als met betrekking tot verkoopprestaties in het bijzonder. In dit hoofdstuk werden eerst twee onderwerpen met betrekking tot persoonlijkheidstesten geïntegreerd en vervolgens

werden twee nieuwe proposities beschreven. Het eerste onderwerp was het verbinden van de bandbreedte-discussie (*bandwidth-fidelity discussion*; Ones & Viswesvaran, 1996) met het gebruik van een FOR. Zoals eerder beschreven richt de bandbreedte-discussie zich vooral op de vraag of algemene, bredere persoonlijkheidskenmerken betere voorspellers zijn van bepaalde werkprestaties dan specifieke persoonlijkheidsfacetten (Cronbach & Gleser, 1965; Ones & Viswesvaran, 1996).

In **hoofdstuk 5** werd gesteld dat bredere persoonlijkheidskenmerken (de Big Five) en persoonlijkheidsfacetten bijna per definitie specifiek en/of concreter worden nadat een FOR aan de items is toegevoegd. Vervolgens werd beschreven hoe het gebruik van een FOR in een persoonlijkheidstest het kiezen van de optimale bandbreedte van het prestatie criterium kan faciliteren. Bijvoorbeeld: een item van het persoonlijkheidsfacet netheid (IPIP, Goldberg et al., 2006) is: 'Ik hou ervan om dingen te structureren'. Dit item meet een voorkeur voor het structureren van zaken of netheid. Nadat een FOR aan dit item is toegevoegd, ziet dit item er als volgt uit: 'Ik hou ervan om mijn administratie op het werk te structureren'. Het is nu duidelijke welk precieze gedrag door het item wordt gemeten: 'het structureren van administratie op het werk'. Een prestatie criterium dat exact dezelfde bandbreedte heeft als dit persoonlijkheidsfacet is: 'de administratie op het werk netjes bijhouden'. Omdat door het gebruik van een FOR een betere verbinding met het prestatie criterium mogelijk is op basis van bandbreedte, zou de criteriumvaliditeit van de persoonlijkheidstest moeten toenemen.

Het tweede onderwerp dat geïntegreerd werd in het onderzoeksveld van persoonlijkheidstesten met een FOR, is het zogeheten conceptueel verbinden (*conceptual alignment*). Er werd omschreven hoe conceptueel verbinden de criteriumvaliditeit van persoonlijkheidstesten met een FOR kan verbeteren (zie ook Pace & Brannick, 2010 en Lievens et al., 2008). Bij het voorspellen van verkoopprestatiecriteria, zou een persoonlijkheidsfacet met een FOR ('ik richt mij op het behalen van verkoopdoelen') het makkelijker moeten maken om dit facet conceptueel te verbinden aan een verkoopcriterium dat conceptueel verwant is (het behalen van verkoopdoelen). Dit zou vervolgens de criteriumvaliditeit van de persoonlijkheidstest moeten verbeteren. Wanneer een standaard persoonlijkheidstest wordt gebruikt (zonder een FOR met verkoopgerelateerde omschrijvingen van gedrag), zou het lastiger zijn om persoonlijkheidsfacetten aan verkoopprestatiecriteria te verbinden.

De eerste propositie luidde dat uitgebreide contextualisatie van de items van een persoonlijkheidstest, deze test kan veranderen in een instrument dat gedrag voorspelt a) met zelfbeoordeeld gedrag en met een beperkt potentieel voor het meten van persoonlijkheid en b) met een beperkt potentieel om gedrag te voorspellen in andere functies dan de functie waarop een FOR betrekking heeft. Een voorbeeld van een verkoopgerelateerde FOR is te vinden in het item: 'Ik zorg dat ik mijn verkoopdoelen haal'. Dit item is relevant voor verkoopprestaties, maar niet voor bijvoorbeeld boekhoudkundig werk. Omdat de items in een FOR zeer specifiek gedrag meten (bijvoorbeeld: 'Ik richt mij op de details van mijn verkoopadministratie'), zou

een verkoopgerelateerde FOR relevant zijn voor verkoopwerk, maar niet voor andere functies. Daarom werd gesteld dat een dergelijke FOR niet noodzakelijk criteriumvaliditeit zou hebben in andere functies. Een standaard persoonlijkheidstest, zonder een FOR, zou wel criteriumvaliditeit hebben in andere functies.

We stelden in deze propositie ook dat een persoonlijkheidstest met een specifieke FOR wellicht geen persoonlijkheid meer meet. Dit werd geïllustreerd middels het vergelijken van de onderlinge correlaties van consciëntieusheid facetten met een *werk* FOR en een *school* FOR uit een studie van Lievens et al. (2008). De gemiddelde correlaties tussen dezelfde facetten met een *verschillende* FOR waren veel lager dan de gemiddelde correlaties tussen verschillen facetten met *dezelfde* FOR. Blijkbaar worden de correlaties tussen gecontextualiseerde persoonlijkheidsfacetten meer bepaald door een FOR dan door het onderliggende persoonlijkheidsconstruct.

De tweede propositie luidde dat het negatieve effect van een sterke contextuele situatie op de criteriumvaliditeit van een persoonlijkheidstest zal verdwijnen als de persoonlijkheidstest een FOR heeft die zorgt voor het activeren van persoonlijkheidskenmerken die relevant zijn voor taakprestaties. Sterke situaties zijn situaties waarin gedrag in belangrijke mate wordt beïnvloed door regels en normen op de werkplek, waardoor er minder vrijheid is voor het uiten van zelfgekozen gedrag. Een voorbeeld van een sterke werksituatie is een bureaucratische organisatie, waarin veel regels zijn. Sterke situaties zouden ervoor kunnen zorgen dat de individuele verschillen tussen mensen in persoonlijkheid-gerelateerd gedrag kleiner worden, omdat gedrag sterker in dezelfde richting wordt gestuurd door de aanwezigheid van signalen in de omgeving zoals prestatierichtlijnen rondom taken en regels. Kortom: de criteriumvaliditeit van persoonlijkheidstesten zou lager moeten zijn in een sterke situatie, maar hoger in een zwakke (minder strikt gereguleerde) situatie (Mischel, 1968).

Er werd vervolgens gesteld dat sterke situaties een ander effect kunnen hebben op persoonlijkheidstesten met een FOR dan op persoonlijkheidstesten zonder een FOR. Dit zou zo zijn omdat verschillende soorten sterke situaties een verschillend effect kunnen hebben op de criteriumvaliditeit van persoonlijkheidstesten met een FOR. Beaty, Cleveland en Murphy (2001) verdeelden sterke situaties in twee soorten. In sterke *taaksituaties* zijn er prestatierichtlijnen over de uit te voeren taken. In sterke zogenaamde *contextuele* situaties zijn er prestatierichtlijnen over het helpen van collega's, het vrijwillig uitvoeren van extra taken en steun laten zien voor regels en procedures.

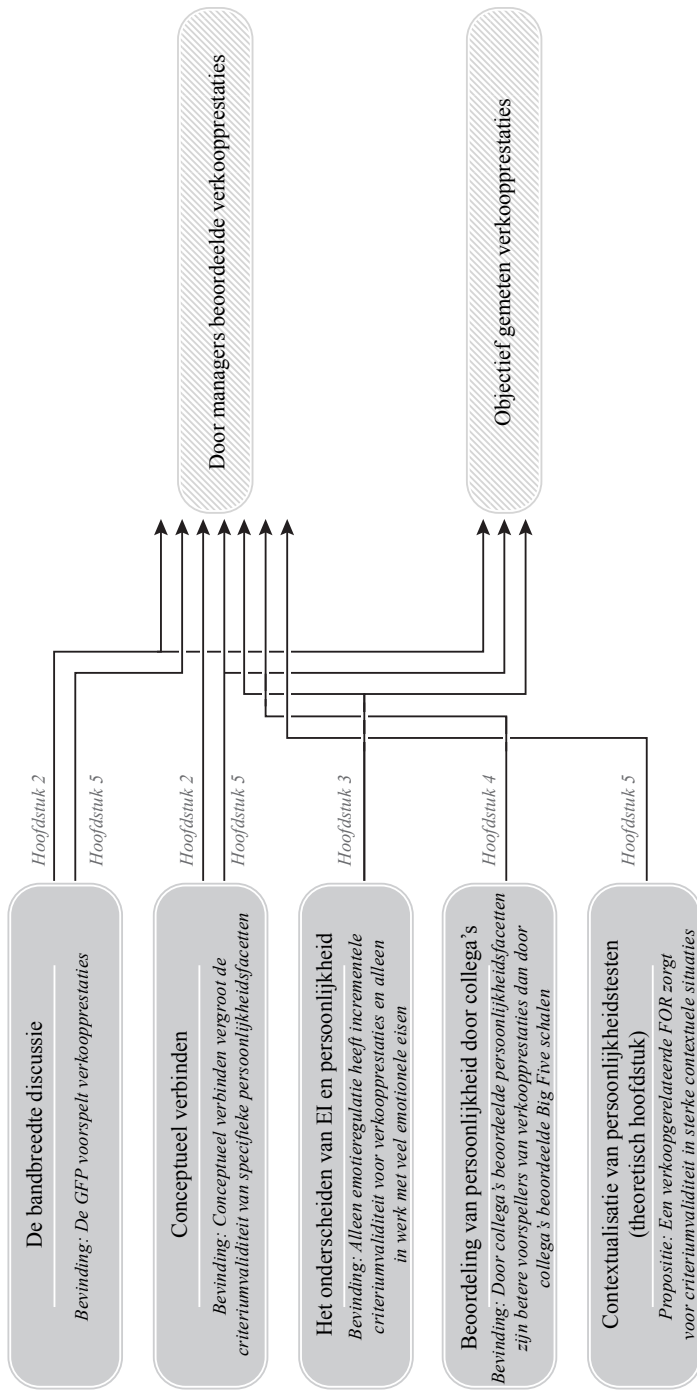
Daarna werd omschreven hoe activatie van een persoonlijkheidskenmerk (*trait activation*, Tett & Guterman, 2000), veroorzaakt door een FOR, ervoor kan zorgen dat een persoonlijkheidstest met een FOR criteriumvaliditeit kan houden in een sterke contextuele situatie of in een sterke taaksituatie. Volgens de theorie van activatie van persoonlijkheidsstrekken (traits) is een situatie van belang voor een persoonlijkheidskenmerk als de situatie signalen afgeeft voor het uiten van gedrag dat relevant is voor dat persoonlijkheidskenmerk (Tett & Guterman, 2000).

Er werd gesteld dat deze signalen ook in de persoonlijkheidstest zelf kunnen zitten (in een FOR, onderdeel van een persoonlijkheidsitem). Deze FOR kan vervolgens zorgen voor activatie van de persoonlijkheidskenmerken. Als voorbeeld werd een gecontextualiseerd item van een openheidsschaal gegeven: 'Ik ben geïnteresseerd in het vinden van nieuwe klanten'. Deze FOR beschrijft gedrag (nieuwe klanten vinden) dat relevant is voor het persoonlijkheidskenmerk (openheid) en dus het potentieel heeft om dit persoonlijkheidskenmerk te activeren. Er werd vervolgens gesteld dat in sterke contextuele situaties, waarin er alleen richtlijnen zijn over het helpen van collega's en het zich houden aan procedures, een persoonlijkheidstest met een FOR die relevante taken beschrijft (bijvoorbeeld: 'Ik richt mij op het behalen van verkoopdoelen') nog steeds criteriumvaliditeit kan hebben. Bij persoonlijkheidstesten zonder deze FOR vindt in deze situatie geen activatie van karaktertrekken plaats. Natuurlijk kan deze situatie ook worden omgedraaid: een persoonlijkheidstest met een FOR kan nog steeds criteriumvaliditeit hebben in sterke taaksituaties, als een FOR relevant is voor contextueel werkgedrag. Als een situatie zowel sterk is op het gebied van taken als op het gebied van context dan zal de criteriumvaliditeit van een persoonlijkheidstest met een FOR verminderen, net als bij een persoonlijkheidstest zonder een FOR.

Praktische toepassingen van de resultaten voor de selectie van verkopers

Dit proefschrift laat zien dat de twijfels van Morgeson et al. (2007) over de criteriumvaliditeit van persoonlijkheidstesten niet in alle gevallen terecht zijn. Het onderzoek in dit proefschrift heeft namelijk een aantal bruikbare praktische toepassingen opgeleverd. Deze toepassingen zijn samengevat in tabel 1. Ten eerste werd in **hoofdstuk 2** aangetoond dat het berekenen van een GFP-score tijdens de selectie van verkopers nuttig zou kunnen zijn, omdat dit construct zowel objectief gemeten verkoopresultaten als beoordelingen van verkoopprestaties kon voorspellen. Hoewel consciëntieusheid en extraversie over het algemeen worden gezien als de beste voorspellers van werkgedrag, komt uit ons onderzoek naar voren dat openheid voor ervaringen goed te gebruiken is om verkoopprestaties te voorspellen. Dit persoonlijkheidskenmerk voorspelde verkoopsucces, terwijl consciëntieusheid en extraversie geen significante voorspellers waren. Voor het voorspellen van specifieke verkooptaken valt uit dit proefschrift te concluderen dat het conceptueel relateren van persoonlijkheidskenmerken met verkooptaken tijdens de selectie van verkopers zinvol zou kunnen zijn. Verder lijkt het verstandig om tijdens de selectie van verkopers te letten op hoge scores op het facet *sociale bravoure* omdat dit persoonlijkheidsfacet negatief gerelateerd lijkt te zijn met verkoopprestaties. In **hoofdstuk 3** bleek dat alleen het EI-facet emotieregulatie verkoopprestaties kan voorspellen in werk met veel emotionele eisen. Voor de selectie van verkopers in werk met lage emotionele eisen lijkt het om deze reden niet zinvol om naast een persoonlijkheidstest en een intelligentietest ook nog een EI-vragenlijst te gebruiken.

Figuur 1: De bevindingen en proposities van het proefschrift schematisch in beeld gebracht.



Uit **hoofdstuk 4** blijkt dat door collega's beoordeelde persoonlijkheidsfacetten verkoopprestaties kunnen voorspellen. Dit geldt uiteraard voor verkopers die reeds in een organisatie werkzaam zijn en deze bevinding is derhalve niet te gebruiken voor selectiedoeleinden. Zulke beoordelingen zouden mogelijk wel een rol kunnen spelen in beoordelingssystemen of assessments. Als laatste stellen we in **hoofdstuk 5** dat, hoewel een persoonlijkheidstest die specifiek gecontextualiseerd is voor verkoopfuncties een hogere criteriumvaliditeit kan hebben, deze wellicht niet meer te gebruiken is voor andere functies. Verder zou een verkoopgerelateerde FOR activering van persoonlijkheidskenmerken (die relevant zijn voor verkooptaken) kunnen veroorzaken. Dit zou ervoor kunnen zorgen dat een dergelijke test ook verkoopprestaties kan voorspellen in sterke contextuele situaties.

Tabel 1. *De praktische toepassingen van de bevindingen uit dit proefschrift voor de voorspelling van verkoopprestaties.*

Hoe kunnen de bevindingen uit dit proefschrift in de praktijk worden gebruikt voor de voorspelling van verkoopprestaties?

1. Gebruik naast consciëntieusheid en extraversie ook openheid voor ervaringen voor het voorspellen van de werkprestaties van verkopers.
2. Let op hoge scores op de GFP, the General Factor of Personality. Dit construct kan verkoopresultaten en beoordelingen van verkoopprestaties voorspellen.
3. Gebruik specifieke persoonlijkheidsfacetten om deze conceptueel te relateren aan specifieke verkooptaken.
4. Let op hoge scores op het facet sociale bravoure, dit facet lijkt een negatieve relatie te hebben met verkoopprestaties.
5. Gebruik het EI (emotionele intelligentie) facet emotieregulatie om verkoopresultaten in werk met veel emotionele eisen te voorspellen.
6. Tijdens de selectie van verkopers in werk met weinig emotionele eisen, heeft het gebruiken van een EI vragenlijst geen zin naast het inzetten van een persoonlijkheidstest en een intelligentietest.
7. Wanneer verkoopresultaten voorspeld moeten worden, heeft het gebruik van een intelligentietest geen zin.
8. Gebruik persoonlijkheidsbeoordelingen door collega's om de verkoopprestaties van verkoopmedewerkers te voorspellen.
9. Gebruik een persoonlijkheidstest met een verkoopgerelateerde Frame Of Reference (FOR), en zorg dat deze FOR een activerend effect heeft op persoonlijkheidskenmerken die relevant zijn voor het uitvoeren van verkooptaken.

CONCLUSIE

Dit proefschrift laat zien dat persoonlijkheid kan worden gebruikt om verkoopprestaties te voorspellen. Er werd gevonden dat de GFP nuttig kan zijn tijdens de selectie van verkopers. Als verkopers geselecteerd moeten worden die relatief specifieke taken moeten uitvoeren, zoals het omgaan met bezwaren van klanten en administratief werk, dan is het gebruik van specifieke persoonlijkheidsfacetten beter. De uit te voeren taak kan (afhankelijk van de inhoud van de taak) conceptueel gerelateerd worden aan een Big Five persoonlijkheidskenmerk of een specifiek persoonlijkheidsfacet. Uit dit proefschrift bleek verder dat de criteriumvaliditeit van persoonlijkheid sterk afhangt van het verkoopcriterium dat moet worden voorspeld. Blijkbaar bestaat een verkoopfunctie uit specifieke deelverkooptaken die dermate verschillend zijn dat ze worden voorspeld door verschillende persoonlijkheidskenmerken. Het is daarom belangrijk, zowel in de praktijk als in onderzoek, om duidelijk te specificeren wat het te voorspellen verkoopcriterium is, voordat het optimaal voorspellende kenmerk of facet kan worden geselecteerd. Hoewel in de afgelopen 20 jaar verschillende meta-analyses hebben gerapporteerd dat met name consciëntieusheid en extravertie voorspellers zijn van verkoopprestaties, vonden wij in twee onafhankelijke studies in dit proefschrift dat eerder openheid voor ervaring verkoopprestaties (nieuwe klanten) voorspelt. Onze bevinding wordt ondersteund door resultaten uit eerdere studies waarin ook werd gevonden dat openheid voor ervaring een voorspeller is van verkoopsucces. Wellicht is open en geïnteresseerd zijn in nieuwe dingen gerelateerd aan het vinden van nieuwe klanten.

Daarnaast benadrukken de bevindingen uit dit proefschrift het belang van emotie- regulatie in werk met veel emotionele eisen. Dit facet van emotionele intelligentie is een valide voorspeller van verkoopprestaties, boven persoonlijkheid en intelligentie in werk met veel emotionele eisen. Het is blijkbaar belangrijk voor het behalen van verkoopresultaten om tijdens het werk emoties te controleren. Een mogelijke verklaring is dat succesvolle verkopers in staat zijn om hun emoties beter op klanten aan te passen, en daardoor beter in staat zijn positief over te komen bij klanten en zo meer resultaten te behalen. Tevens zou het zo kunnen zijn dat dergelijke verkopers hun frustraties kunnen verbergen tijdens het verkopen aan moeilijke klanten. De bevindingen in dit proefschrift lijken erop te wijzen dat dergelijke vaardigheden niet alleen afhankelijk zijn van persoonlijkheid en intelligentie, maar ook van het vermogen om emoties te kunnen reguleren. Verkopers zouden hun resultaten wellicht kunnen verbeteren door te leren hoe ze hun emoties kunnen controleren en reguleren.

Beoordelingen van Big Five persoonlijkheidskenmerken door collega's lijken volledig te overlappen met beoordelingen van verkoopprestaties door collega's. Er is meer onderzoek nodig naar deze overlap, zeker omdat vrijwel al het onderzoek naar persoonlijkheids-beoordelingen door anderen plaatsvindt op het niveau van Big Five kenmerken.

Het toevoegen van een verkoopgerelateerde FOR aan een persoonlijkheidsvragenlijst lijkt een manier te zijn om de criteriumvaliditeit voor verkoopprestaties te vergroten. Echter, het toevoegen van te veel context aan persoonlijkheidstesten zou de toepasbaarheid van de test in verschillende functies kunnen verlagen. Maar omdat er relatief veel verkoopfuncties zijn en er dus ook veel verkopers werkzaam zijn, zou het kosteneffectief kunnen zijn om een persoonlijkheidstest met een verkoopgerelateerde FOR te ontwikkelen voor sollicitanten naar deze functies. Onze suggestie zou zijn met behulp van een dergelijke vragenlijst empirisch te testen of een FOR, die activerend werkt op persoonlijkheidskenmerken die relevant zijn voor verkooptaken, nog steeds criteriumvaliditeit heeft in sterke contextuele situaties.

Om de voorspelling van verkoopprestaties nog verder te verbeteren raden wij aan om meer te focussen op de precieze inhoud van verkooptaken. De criteriumvaliditeit van de voorspellers die in dit proefschrift werden gebruikt, was sterk afhankelijk van de voorspelde verkooptaak (breed, specifiek of objectief). Het zou zo kunnen zijn dat de taken van een verkoper dermate divers zijn, dat een brede verzameling van persoonlijkheidskenmerken en/of specifieke persoonlijkheidsfacetten nodig is om prestaties in deze doelgroep te voorspellen.

Onderzoekers naar de criteriumvaliditeit van persoonlijkheidstesten hebben over het algemeen de gewoonte om zich met name te richten op de persoonlijkheidsconstructen.

We raden aan om deze focus te verbreden naar het criterium, in dit geval verkoopgedrag.

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Curriculum Vitae



Thomas Sitser was born on July 26th, 1973, in Eefde, The Netherlands. He completed his secondary education in 1992 at the Baudartius College in Zutphen. Hereafter, he started studying Psychology in 1993 at the Rijksuniversiteit Groningen. He received his Doctorandus degree in Work and Organizational Psychology in 1999. His thesis concerned a research study into a competency system at SHL in Utrecht. From 1999 till 2003, he worked as a headhunter at several executive firms in Amsterdam. In 2004 he was asked by an international test publisher, Oxford Psychology Press (OPP Ltd), to set up their Dutch office in Amsterdam. After setting up this business successfully and working for OPP as Country Manager Netherlands for several years, Thomas worked in several interim management positions. In 2008 Thomas started his own test publishing company, TestGroup. TestGroup is the publisher of The Bridge Personality, The Bridge Ability Suite and The Bridge 360. These instruments were used for data collection in the present dissertation. TestGroup is located in Amsterdam, The Netherlands. Currently the products of TestGroup are sold in local languages in the Netherlands, Belgium, the UK, Brazil, Czech Republic, Russia and India. In January 2010, Thomas started as a PhD student at the institute of Psychology at the Erasmus University Rotterdam, studying the topic of improving the personality-job performance linkage. The results of the PhD project, which was financed by TestGroup, are reported in the present dissertation. As a PhD student, Thomas supervised several bachelor theses. Currently Thomas is working as Managing Consultant at TestGroup, responsible for training, psychometric research and international business development.

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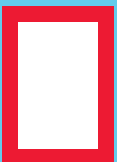


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