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# **CHAPTER 4**

## **PERSONALITY AND WORKPLACE DEVIANCE: A META-ANALYSIS**

This chapter is based on Pletzer, J. L., Bentvelzen, M., Oostrom, J. K., & De Vries, R. E. (2018). Personality and workplace deviance: A meta-analysis. Revise and resubmit. Paper drafts have been presented at the Dutch-Flemish Research Meeting on Personnel Recruitment and Selection 2017, at the WAOP 2017 conference, and at the Academy of Management Conference 2018.

**Abstract**

We present a comprehensive meta-analysis of the relations between personality and workplace deviance. More specifically, we compared the validities of the Big Five domain scales with the HEXACO domain scales in predicting workplace deviance. By including 68 studies and 460 effect sizes, we found that HEXACO Honesty-Humility shows the strongest relation with workplace deviance, followed by Conscientiousness (Big Five and HEXACO) and Agreeableness (Big Five and HEXACO). Big Five Neuroticism (positively) and HEXACO Emotionality (negatively) also correlate with workplace deviance. HEXACO and Big Five Openness to Experience and Extraversion show either non-significant or negligible correlations with workplace deviance. For the most part, these results support the conceptual differences between the Big Five and the HEXACO personality models. Importantly, none of the personality domain scales (Big Five and HEXACO) correlate differently with the two facets of workplace deviance (i.e., interpersonal and organizational workplace deviance). Based on a meta-analytic structural equation modeling analysis, we found that the HEXACO domain scales (24.9%) explain more variance in workplace deviance than the Big Five domain scales (17.1%). Consequently, the HEXACO model appears to be a viable alternative to the Big Five model when predicting and explaining levels of workplace deviance. Theoretical and practical implications of the findings as well as limitations and future research ideas are discussed.

*Keywords:* counterproductive work behavior, workplace deviance, personality, Big Five, HEXACO

## Introduction

Workplace deviance poses a serious and pervasive problem for organizations because of its substantial negative impact; for example, it decreases task performance (Sackett, 2002), impairs team performance (Dunlop & Lee, 2004), and leads to increased stress levels among coworkers (Cortina, Magley, Williams, & Langhout, 2001). Accordingly, the financial costs of workplace deviance are estimated to be very high (Henle et al., 2005; Robinson & Bennett, 1995), but might not even capture the true extent because of the hidden nature of such behaviors. Because of the high costs associated with workplace deviance, the prevention and prediction of workplace deviance has been a major focus in science and practice. One commonly used predictor of workplace deviance is personality, which is usually captured with the Big Five (B5) or the Five-Factor Model of personality (FFM) (e.g., Berry, Ones, & Sackett, 2007; Salgado, 2002). Despite important advances due to previous meta-analyses examining the relations between personality and workplace deviance (Berry, Carpenter, & Barratt, 2012; Berry et al., 2007; Salgado, 2002), much is to be gained from a meta-analysis strictly focusing on personality as a predictor of workplace deviance, especially because many unresolved issues remain in examining these relations.

First, previous meta-analyses (Berry et al., 2012; Salgado, 2002) include only a limited number of effect sizes and even found substantially different effect sizes for some of the B5 or FFM personality domain scales. For example, Salgado (2002) found only a small correlation for Conscientiousness ( $r = -.16$ )<sup>1</sup>, whereas Berry and colleagues (2012) report a moderate correlation for Conscientiousness with self-reported workplace deviance ( $r = -.31$ ; data from Berry et al., 2007). This creates ambiguity about which personality domain scales are most useful in predicting workplace deviance. Second, whereas the B5 and FFM have been the dominating model of personality for the past decades, considerable evidence has accumulated in favor of an alternative representation of personality structure in recent years, known as the HEXACO-model (e.g., Ashton, Lee, & De Vries, 2014; Lee & Ashton, 2004). The HEXACO-model consists of rotated variants of the ‘Big Five’ Neuroticism<sup>2</sup> and Agreeableness domain scales, but also includes a sixth domain scale named ‘Honesty-Humility’ (Lee & Ashton, 2004). Although some primary studies have used the HEXACO personality domain scales in predicting workplace deviance (e.g., Chirumbolo, 2015; Louw, Dunlop, Yeo, & Griffin, 2016), the HEXACO personality domain scales have not been included in any of the previous workplace deviance meta-analyses. And third, the small number of effect sizes in previous meta-analyses did not allow for testing important moderators of the relations between personality and workplace deviance. The goal of the present meta-analysis therefore is to

examine and compare the effect sizes of the B5/FFM personality domain scales and the HEXACO personality domain scales, and to test the moderating effects of several demographic and methodological characteristics on the relations between personality and workplace deviance.

### **Workplace Deviance**

Workplace deviance (or counterproductive work behavior) has been defined as “voluntary behavior that violates significant organizational norms and, in so doing, threatens the well-being of the organization or its members, or both” (Robinson & Bennett, 1995, p. 556). Such behavior has severe negative effects on the well-being and success of organizations and their employees (e.g., Barling, Dupré, & Kelloway, 2009; Bowling, Burns, Stewart, & Gruys, 2011). Workplace deviance is often divided into two facets: Organizational workplace deviance (OD) and interpersonal workplace deviance (ID) (Bennett & Robinson, 2000). OD consists of behaviors directed toward the organization, such as stealing, damaging company property, or intentionally working slowly. ID consists of behaviors directed toward members of the organization, such as gossiping, bullying, or harassing coworkers. Both forms are costly and detrimental for the organization and can vary in severity (Henle et al., 2005; Sackett, 2002). The prediction and prevention of workplace deviance is a major focus for scientists and practitioners, especially in job selection settings (Ones, Dilchert, Viswesvaran, & Judge, 2007). Deviant workplace behavior can be caused by the organizational environment (e.g., because of abusive supervision; Mitchell & Ambrose, 2007) and by stable individual differences (e.g., personality; Hastings & O’Neill, 2009). Although various individual differences have been examined as predictors of workplace deviance (e.g., age, gender, work experience), personality might be the most prominent predictor of workplace deviance (e.g., Berry et al., 2012; Ng, Lam, & Feldman, 2016). As such, personality questionnaires are a useful tool in job selection settings to predict an applicant’s future job performance and to screen an applicant’s proneness to workplace deviance (e.g., Ones et al., 2007).

### **Personality**

Personality describes “the set of psychological traits and mechanisms within the individual that are organized and relatively enduring and that influence his or her interactions with, and adaptations to, the intrapsychic, physical, and social environments” (Larsen & Buss, 2005, p. 4). The most common approach to study the structure of personality is through the so-called lexical approach, which posits that important human personality differences are encoded in sufficiently encompassing dictionaries in all natural languages (Goldberg, 1982; Goldberg, 1990). Up until recently, consensus existed among personality scholars that five domain scales

capture most of the personality variance. This model of personality is referred to as the B5 (Goldberg, 1990) or the FFM (McCrae & Costa, 1992). Because of their different approach to study personality – the B5 is based on the lexical approach to personality, whereas the FFM is based on a factor analytic examination of personality using the NEO Personality Inventory (McCrae & Costa, 1992) – some differences exist between the B5 and the FFM about how to best name and interpret the personality domain scales, and about which facets belong to which personality domain scale. Nevertheless, most scholars agree that they are overall highly similar (Ashton & Lee, 2005). In this meta-analysis, we will therefore treat the B5 and the FFM interchangeably to represent research on personality that assumes that personality is best represented using five separate domains (from here on referred to as B5), but will investigate if the effect sizes with workplace deviance differ between these two personality models. The B5 divides personality into the following five domain scales: Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (see Table 1 for a description of characteristics associated with each B5 personality domain scale).

Table 1

*Big Five Personality Domain Scales and their Associated Characteristics*

B5 domain scale	Characteristics
Openness	Intellectual Curiosity, Aesthetic Sensitivity, Creative Imagination
Conscientiousness	Organization, Productiveness, Responsibility
Extraversion	Sociability, Assertiveness, Energy Level
Agreeableness	Compassion, Respectfulness, Trust
Neuroticism	Anxiety, Depression, Emotional Volatility

*Note.* Characteristics are from Soto and John (2016). These differ slightly between questionnaires that are based on the B5 and those that are based on the FFM.

Although the B5 is the predominant model of personality, re-analyses of lexical data that have become available from at least a dozen languages, including English, offer support for six cross-culturally replicable factors of personality (Ashton et al., 2014; De Raad et al., 2014; Saucier, 2009), which are commonly known by the HEXACO acronym: Honesty-Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness to experience (see Table 2 for a description of characteristics associated with each HEXACO personality domain scale). The HEXACO domain scales Extraversion, Conscientiousness, and Openness to Experience are highly similar to their B5 counterparts. The other three domain scales – Honesty-Humility, Emotionality, and Agreeableness – differ in important ways from the Neuroticism (versus Emotional Stability) and Agreeableness domain scales of the B5 (Ashton & Lee, 2008).

Table 2

*HEXACO Personality Domain Scales and their Associated Characteristics*

HEXACO domain scales	Characteristics
Honesty-Humility	Sincerity, Fairness, Greed Avoidance, Modesty
Emotionality	Fearfulness, Anxiety, Dependence, Sentimentality
Extraversion	Social Self-Esteem, Social Boldness, Sociability, Liveliness
Agreeableness	Forgiveness, Gentleness, Flexibility, Patience
Conscientiousness	Organization, Diligence, Perfectionism, Prudence
Openness to Experience	Aesthetic Appreciation, Inquisitiveness, Creativity, Unconventionality

*Note.* Descriptions of the characteristics can be found at [hexaco.org/scaledescriptions](http://hexaco.org/scaledescriptions).

More specifically, HEXACO Emotionality and Agreeableness are rotated variants of B5 Neuroticism and Agreeableness. High levels of HEXACO Emotionality are associated with higher levels of B5 Neuroticism and somewhat higher levels of B5 Agreeableness, and high levels of HEXACO Agreeableness are associated with higher levels of B5 Agreeableness and somewhat lower levels of B5 Neuroticism. This re-rotation is accompanied by a shift in the content of these domains. For example, the irritability and anger content that is an element of B5 Neuroticism is part of Agreeableness in the HEXACO model. On the other hand, B5 Agreeableness captures some of the sentimentality content that is part of the HEXACO Emotionality factor. Furthermore, especially in the FFM, Agreeableness has been found to capture parts of the sixth HEXACO domain scale Honesty-Humility (Ashton & Lee, 2005); however, this is somewhat less the case for some Big Five questionnaires, such as the Big Five Inventory (e.g., BFI-2; Soto & John, 2017). Hence, although some of the B5 and HEXACO counterparts have similar sounding names, such as Agreeableness and Emotionality/Emotional Stability, there are conceptual differences that may influence their relations with criterion variables, such as workplace deviance. Furthermore, Honesty-Humility reflects the tendency to be fair and genuine in dealing with others (Ashton & Lee, 2007), and low levels of Honesty-Humility are associated with harmful effects upon individuals and upon society and humanity as a whole, such as theft, fraud, workplace delinquency, and vandalism (Ashton & Lee, 2008). It has been suggested that this factor, representing individual differences in reluctance versus willingness to exploit others, is especially important in predicting workplace deviance, yet it is not sufficiently captured by any of the B5 domain scales (Ashton et al., 2014; Ashton, Lee, & Son, 2000).

### **Personality and Workplace Deviance**

Given that the B5 and HEXACO personality domain scales of Extraversion, Conscientiousness, and Openness to Experience are conceptually very similar, we expect similar relations for these three personality domain scales with the criterion variable workplace deviance. In line with previous meta-analytic results, we do not expect Openness to Experience

(Salgado, 2002<sup>3</sup>:  $r = .10$ ; Berry et al., 2007<sup>4</sup>:  $r = -.06$ ) and Extraversion (Salgado, 2002:  $r = .01$ ; Berry et al., 2007:  $r = -.03$ ) to relate to workplace deviance. However, because individuals scoring high on Conscientiousness are hard-working, disciplined, and responsible, and because previous meta-analytic results indicated a negative relation between Conscientiousness and workplace deviance (Salgado, 2002:  $r = -.16$ ; Berry et al., 2007:  $r = -.31$ ), we expect Conscientiousness to negatively relate to workplace deviance.

Agreeableness is expected to relate negatively to workplace deviance because individuals scoring high on this domain scale are compassionate, respectful, and trusting. Meta-analytic evidence also indicates that Agreeableness correlates negatively with workplace deviance (Salgado, 2002:  $r = -.13$ ; Berry et al., 2007:  $r = -.35$ ). As noted above, B5 (and especially FFM) Agreeableness captures some of the variance associated with HEXACO Honesty-Humility, which has been found to be an important predictor of workplace deviance (Lee, Ashton, & De Vries, 2005). However, compared to HEXACO Agreeableness, B5 Agreeableness lacks a (reversed) anger facet which is part of B5 Neuroticism and which has been shown to correlate positively with workplace deviance (Hastings & O'Neill, 2009). Consequently, through its inclusion of Honesty-Humility variance and through its exclusion of (reversed) anger-related variance, B5 Agreeableness might be either somewhat more or somewhat less strongly negatively related to workplace deviance than HEXACO Agreeableness. Previous findings from primary studies are mixed as well (e.g., Lee, Ashton, & De Vries, 2005), rendering a meta-analytic examination of this relation even more important.

As noted above, B5 Neuroticism contains variance associated with anxiety and depression and variance associated with irritability and anger. Anxiety may be associated with lower levels of workplace deviance, whereas anger may be associated with higher levels of workplace deviance. Previous meta-analyses remain ambiguous about the relation between Neuroticism and workplace deviance as well, reporting either a non-significant (Salgado, 2002:  $r = .04$ ) or a positive relation between B5 Neuroticism and workplace deviance (Berry et al., 2007:  $r = .23$ , note that the original correlation of Berry et al. is negative because these authors used B5 Emotional Stability instead of Neuroticism). A new meta-analysis on this relation is therefore necessary to determine whether Neuroticism relates positively or negatively to workplace deviance. Individuals scoring high on HEXACO Emotionality combine higher fearfulness and anxiety with a higher need for emotional support and a tendency to form strong bonds with others, which would lead us to expect that high levels of HEXACO Emotionality are associated with lower levels of workplace deviance. This aligns with the finding that individuals scoring high on HEXACO Emotionality are less likely to be deviant because they



are more likely to be afraid of retributions (Van Gelder & De Vries, 2012). Thus, we expect HEXACO Emotionality to be negatively related to workplace deviance, although such a relation is not likely to be very strong. Last, we would expect HEXACO Honesty-Humility to show the strongest negative correlation with workplace deviance out of all included personality domain scales because individuals scoring high on this trait tend to be honest, fair-minded, and tend to lack greed. These individuals have also been found to be more cooperative (Thielmann & Hilbig, 2014), less likely to sexually harass someone (Lee et al., 2003), and less likely to be delinquent and criminal (De Vries & Van Gelder, 2013, 2015).

As described above, two facets of workplace deviance have been distinguished: ID and OD. Whether ID and OD are two separate facets of an overall workplace deviance construct is debated in the literature. Meta-analytic evidence indicates that these two domain scales correlate strongly, but not too strongly with each other ( $r = .52$ ) and that they show different correlations with some personality domain scales and with OCB (Berry et al., 2007). Agreeableness correlates more strongly with ID ( $r = -.36, k = 10$ ) than with OD ( $r = -.25, k = 8$ ), whereas Conscientiousness correlates more strongly with OD ( $r = -.34, k = 8$ ) than with ID ( $r = -.19, k = 11$ ) (Berry et al., 2007). The other three personality domain scales either did not correlate strongly with workplace deviance (i.e., Extraversion) or did not differ significantly in their relations with ID or OD (i.e., Openness to Experience and Neuroticism).<sup>5</sup> However, factor analytic evidence about the separability of ID and OD is inconclusive, with at least one study failing to replicate the two-factor structure of workplace deviance (Lee & Allen, 2002). In the current meta-analysis, we will examine if ID and OD correlate differently with personality domain scales based on a larger number of studies. Results will provide further evidence for the usefulness of separating ID and OD when personality is the predictor.

### **Moderating Variables**

Much of the variability in findings between previous meta-analyses and between primary studies might be explained by differences in demographic or methodological characteristics of the included studies that moderate the relations between personality and workplace deviance. Meta-analytic evidence indicates that women and older employees are slightly less likely to be deviant (Berry et al., 2007; Ng et al., 2016), and also indicates gender differences in personality (Feingold, 1994; see also De Vries, Ashton, & Lee, 2009, for gender differences in Honesty-Humility). Hence, the average percentage of women and the average age of participants in the included studies was included as an exploratory moderator of the relations between personality and workplace deviance. Results might have implications for studies of the personality-workplace deviance relations in which samples are age and gender

diverse. In addition, we examine if the questionnaire used to assess workplace deviance (following Berry et al., 2007, we will compare Bennett & Robinson's, 2000, questionnaire versus other questionnaires) and the source of the workplace deviance rating (self- versus other-rated) function as moderators. This may have important methodological implications for future studies that examine the relations between personality and workplace deviance. For example, it might be that the Bennett and Robinson (2000) questionnaire captures deviance domains that are more strongly related to personality than other questionnaires. In addition, stronger correlations of personality with self-reported workplace deviance may be indicative of same-source biases. Last of all, we examine if the questionnaire used to assess the B5 (based on either Goldberg's (1990) Big-Five model or on McCrae and Costa's, 1992, Five-Factor model) and the number of personality questionnaire items influence the magnitude of effect sizes. Results of these moderator analyses may indicate whether the B5 and FFM inventories can be used interchangeably when predicting workplace deviance and may provide evidence as to whether the number of items used to assess personality domain scales is important when examining the personality-workplace deviance relations. It is expected that longer questionnaires contain more reliable domain scales, resulting in increased levels of validity.

### **Contributions of the Current Meta-Analysis**

The current meta-analysis adds to the existing literature in the following ways. First, we provide the first comprehensive overview of the relations between personality and workplace deviance for both the B5 model and the HEXACO model. Second, we extend previous meta-analyses that have examined the relations between personality and workplace deviance (Berry et al., 2012, 2007; Salgado, 2002). Third, we examine the relations between personality and ID and OD based on a large number of included effect sizes. Fourth, we examine important methodological moderators of the relations of interest (e.g., the source of the workplace deviance rating). Fifth and last, we compare the effect sizes between the B5 and HEXACO personality domain scales and, most importantly, we examine whether the B5 or the HEXACO explains more variance in workplace deviance.

## **Method**

### **Systematic Literature Search**

A systematic literature search was conducted in several scientific databases, including *EBSCO*, *Web of Science*, and *Google Scholar*. The keywords used to find articles were: *Personality*, *Big 5*, *Big Five*, *Five-factor-model*, *FFM*, *HEXACO*, *Agreeableness*, *Extraversion*, *Openness to Experience*, *Neuroticism*, *Emotional Stability*, *Emotionality*, *Conscientiousness*, *Intellect*, *Honesty-Humility*, *Workplace Deviance*, *Interpersonal Deviance*, *Organizational*

*Deviance, or Counterproductive Work Behavior*. The keywords had to be mentioned in the abstract or title of the study. After removing duplicates, 739 scientific articles were identified. By examining previous meta-analyses on personality or workplace deviance (Berry et al., 2012, 2007; Dalal, 2005; Grijalva & Newman, 2014; Salgado, 2002; Spector, 2011; Woo, Chernyshenko, Stark, & Conz, 2014), six additional scientific articles were found. In addition, some authors were contacted for more data or articles on the topic, which resulted in four additional articles. Thus, the final number of scientific articles was 749. All articles were fully examined.

For the inclusion or exclusion of studies in this meta-analysis, several criteria had to be met. First, the correlation coefficient ( $r$ ) between workplace deviance and at least one domain scale of personality had to be reported, along with the sample size. Second, the personality measure used in the study had to be based either on the B5/FFM model or the HEXACO model. Third, all studies had to be field studies to be included. Experimental studies were not included in this meta-analysis. Fourth, workplace deviance had to be measured on an individual and not on a group level. We also excluded one study (Spector & Zhou, 2014) because there seemed to be some overlap in data with another study included in this meta-analysis (Zhou, Meier, & Spector, 2014). The inclusion criteria resulted in a final sample of 68 individual studies and 460 effect sizes in the overall analysis. The articles were published between 1998 and 2016, with a median publication year of 2011. All effect sizes and study characteristics were independently coded by the first and second author. The agreement among the independent raters was 98%. All inconsistencies in the codings were resolved after discussion. The codings for each included effect size and their references are listed in Table 3 (for B5) and in Table 4 (for HEXACO).

### **Definition of Variables**

**Big Five model.** The B5 model measures five personality domain scales: Openness to Experience ( $k = 28$ ), Conscientiousness ( $k = 54$ ), Extraversion ( $k = 29$ ), Agreeableness ( $k = 46$ ), and Neuroticism ( $k = 41$ ).

**HEXACO model.** The HEXACO model measures six personality domain scales: Honesty-Humility ( $k = 16$ ), Emotionality ( $k = 13$ ), Extraversion ( $k = 13$ ), Agreeableness ( $k = 13$ ), Conscientiousness ( $k = 14$ ), and Openness to Experience ( $k = 13$ ).

**Workplace deviance.** Workplace deviance can be measured as an overall construct or divided into two separate constructs, OD and ID (Bennett & Robinson, 2000). OD includes all deviant behaviors directed at the organization in which an individual is employed ( $k$  for B5 domain scales = 15 – 33;  $k$  for HEXACO domain scales = 3 – 5). ID includes all deviant behaviors directed at individuals in the organization ( $k$  for B5 domain scales = 16 – 30;  $k$  for

HEXACO domain scales = 2 – 4). Overall workplace deviance describes the combination of these two types. Studies that assessed only one specific form of deviant workplace behavior, such as stealing, were not included in this study.

Table 3  
*Studies, Effect Sizes, and Codings included in the B5 – WD Meta-Analyses*

Study	WD form	<i>r</i>					<i>N</i>	B5 Q	# items	WD Q	WD rater	Age	% Women
		O	C	E	A	N							
Alias et al. (2013)	OD	---	-.38	---	-.40	---	429	Other (C); FFM (A)	12	B&R	SR	---	64.6
	ID	---	-.13	---	-.35	---	429	Other (C); FFM (A)	12	B&R	SR	---	64.6
Ashton (1998)	WD	-.01	-.22	.09	-.21	-.04	131	BFI	20	---	SR	---	60.0
Avey et al. (2010)	WD	---	-.38	-.28	---	---	336	BFI	10	O	SR	32.0	---
Bernerth et al. (2012)	OD	-.04	-.11	.00	-.02	-.08	113	BFI	8	O	OR	37.8	39.0
	ID	-.08	.01	-.02	-.15	.12	113	BFI	8	O	OR	37.8	39.0
Bollmann & Krings (2016)	OD	---	-.31	---	-.24	.10	158	Other	6	O	SR	---	53.8
	ID	---	-.08	---	-.30	-.07	158	Other	6	O	SR	---	53.8
*Bolton et al. (2010)	OD	.02	-.31	-.18	-.17	.23	233	BFI	---	O	SR	38.6	---
	ID	.02	-.18	-.04	-.32	.23	233	BFI	---	O	SR	38.6	---
	WD	.02	-.28	-.14	-.28	.27	233	BFI	---	O	SR	38.6	---
Bowling (2010)	WD	---	-.35	---	---	---	209	BFI	10	B&R	SR	33.0	56.0
Bowling & Eschleman (2010)	ID	---	-.33	---	-.38	---	726	BFI	10	B&R	SR	38.0	55.0
	OD	---	-.38	---	-.35	---	727	BFI	10	B&R	SR	38.0	55.0
Bowling et al. (2010)	OD	---	-.35	---	---	---	227	BFI	10	B&R	SR	38.7	59.0
Bowling et al. (2011) S1	ID	---	-.37	---	-.48	---	193	BFI	10	B&R	SR	20.1	64.0
	OD	---	-.36	---	-.34	---	193	BFI	10	B&R	SR	20.1	64.0
Bowling et al. (2011) S2	ID	---	-.28	---	-.32	---	220	BFI	10	B&R	SR	39.8	57.0
	OD	---	-.33	---	-.30	---	220	BFI	10	B&R	SR	39.8	57.0
*Chang & Smithikrai (2010)	WD	-.29	-.47	-.36	-.41	.21	1662	FFM	12	O	SR	31.2	68.0
Colbert et al. (2004) S3	ID	---	---	---	-.50	---	173	BFI	10	B&R	OR	32.6	48.0
	ID	---	---	---	-.55	---	122	BFI	10	B&R	OR	33.1	68.0
Coyne et al. (2013) S1	OD	.06	-.30	-.12	-.19	.45	105	BFI	10	O	SR	31.9	44.0
	ID	.06	-.13	.11	-.37	.21	105	BFI	10	O	SR	31.9	44.0
Coyne et al. (2013) S2	OD	-.05	-.28	-.02	-.08	.19	203	BFI	10	O	SR	33.9	28.0
	ID	-.04	-.18	-.03	-.12	.11	203	BFI	10	O	SR	33.9	28.0
Coyne et al. (2013) S3	OD	-.09	-.29	.03	-.22	.16	185	BFI	10	O	SR	29.0	33.0
	ID	-.01	-.30	-.03	-.25	.12	185	BFI	10	O	SR	29.0	33.0
Coyne et al. (2013) S4	OD	.06	-.37	.22	-.07	.10	70	BFI	10	O	SR	35.6	54.0
	ID	-.04	-.02	.02	-.19	.19	70	BFI	10	O	SR	35.6	54.0
Ferris et al. (2009)	OD	---	-.25	---	-.27	.08	230	BFI	8-9	O	SR	42.5	47.0
*Flaherty & Moss (2007)	WD	-.13	-.28	-.18	-.18	.40	131	FFM	12	O	SR	44.7	64.9
Flaherty & Moss (2007)	WD	.01	.01	-.11	-.06	.09	131	FFM	12	O	OR	44.7	64.9
Guay et al. (2016)	OD	-.01	-.34	-.05	-.12	.00	113	BFI	10	B&R	OR	32.6	41.6
	ID	.02	-.20	-.06	-.18	.06	113	BFI	10	B&R	OR	32.6	41.6

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Hastings & O'Neill (2009)	WD	-.20	-.39	-.06	-.47	.12	198	BFI	24	B&R	SR	18.9	67.5
Hitlan & Noel (2009)	ID	-.19	-.01	.14	-.28	-.03	104	FFM	12	O	SR	43.2	36.2
	OD	-.02	-.41	-.25	-.33	.31	104	FFM	12	O	SR	43.2	36.2
Jensen & Patel (2011)	OD	-.09	-.12	-.09	-.31	.22	517	BFI	10	O	SR	33.5	53.0
	ID	-.07	-.41	-.08	-.23	.21	517	BFI	10	O	SR	33.5	53.0
Kluemper et al. (2013) S1	ID	.22	-.08	.02	.05	.13	220	BFI	30	B&R	SR	22.7	55.0
	OD	.11	-.04	.09	.05	-.10	220	BFI	30	B&R	SR	22.7	55.0
Kluemper et al. (2013) S2	ID	.02	-.29	.30	.27	-.19	100	FFM	12	O	OB	25.8	49.0
*Kluemper et al. (2014) S1	WD	-.03	-.27	-.03	-.23	.19	233	BFI	10	O	OR	31.1	60.0
*Kluemper et al. (2014) S2	WD	-.01	-.30	.07	-.39	.19	230	BFI	10	B&R	SR	37.0	57.0
Kluemper et al. (2014) S2	WD	-.12	-.27	-.08	-.32	.24	224	BFI	10	B&R	OR	37.0	57.0
Le et al. (2011) S1	WD	---	-.23	---	---	.25	569	Other	11-14	---	OR	46.3	56.0
Le et al. (2011) S2	WD	---	-.10	---	---	.04	925	Other	11-14	O	OR	41.2	66.3
*Lee, Ashton, & De Vries (2005) S1	WD	.12	-.27	.09	-.29	.04	106	BFI	10	O	SR	26.4	45.3
*Lee, Ashton, & De Vries (2005) S2	WD	.20	-.28	.13	-.05	.10	128	BFI	10	O	SR	21.0	64.1
*Lee, Ashton, & De Vries (2005) S3	WD	-.01	-.41	.12	-.26	-.06	179	FFM	12	O	SR	20.7	55.9
Lee, Ashton, & Shin (2005)	ID	-.08	-.21	.23	-.12	-.30	267	Other	---	B&R	SR	37.6	50.0
	OD	-.06	-.24	.18	-.07	-.02	267	Other	---	B&R	SR	37.6	50.0
Liao et al. (2004)	OD	-.12	-.38	-.05	-.30	.20	286	BFI	10	B&R	SR	26.4	67.0
	ID	.02	-.38	.06	-.40	.17	286	BFI	10	B&R	SR	26.4	67.0
Meyer et al. (2014)	WD	---	-.47	---	-.47	---	588	BFI	---	B&R	SR	39.1	47.0
Miller (2015)	OD	---	-.39	---	---	---	428	BFI	10	O	SR	22.2	40.0
Morris et al. (2015)	ID	---	-.31	---	-.42	.13	285	FFM	48-56	B&R	SR	19.4	68.5
	OD	---	-.36	---	-.38	.16	285	FFM	48-56	B&R	SR	19.4	68.5
	WD	---	-.34	---	-.41	.14	285	FFM	48-56	B&R	SR	19.4	68.5
Mount et al. (2006)	OD	-.25	-.44	-.12	-.41	.47	141	FFM	20-30	B&R	SR	32.0	65.0
	ID	-.30	-.16	.05	-.43	.24	141	FFM	20-30	B&R	SR	32.0	65.0
	OD	-.23	-.22	-.16	-.05	.21	141	FFM	20-30	B&R	OR	32.0	65.0
	ID	-.17	-.19	-.03	-.21	.18	141	FFM	20-30	B&R	OR	32.0	65.0
O'Brien & Allen (2007)	ID	---	-.14	---	---	---	207	BFI	10	B&R	OR	21.5	75.0
	OD	---	-.15	---	---	---	207	BFI	10	B&R	OR	21.5	75.0
	ID	---	-.26	---	---	---	207	BFI	10	B&R	SR	21.5	75.0
	OD	---	-.45	---	---	---	207	BFI	10	B&R	SR	21.5	75.0
O'Neill & Hastings (2011)	ID	-.06	-.14	-.14	-.27	.06	149	BFI	10	B&R	SR	18.3	72.8
	OD	-.07	-.42	-.05	-.24	.14	149	BFI	10	B&R	SR	18.3	72.8
	WD	-.07	-.42	-.05	-.28	.12	149	BFI	10	B&R	SR	18.3	72.8
O'Neill et al. (2011)	WD	---	-.47	---	-.33	.26	464	Other (CA); BFI (N)	---	B&R	SR	---	---
	ID	---	-.41	---	-.33	.22	464	Other (CA); BFI (N)	---	B&R	SR	---	---
	OD	---	-.48	---	-.26	.26	464	Other (CA); BFI (N)	---	B&R	SR	---	---
Oh et al. (2014) S1	ID	---	.03	---	-.18	.18	144	BFI	10	B&R	SR	21.1	47.0
	OD	---	-.24	---	-.16	.14	144	BFI	10	B&R	SR	21.1	47.0
Oh et al. (2014) S2	ID	---	.03	---	-.17	.19	108	BFI	10	B&R	OR	27.6	40.0

	OD	---	-.24	---	-.07	.04	108	BFI	10	B&R	OR	27.6	40.0
Peng (2012) S1	ID	---	-.26	---	---	---	161	Other	---	B&R	SR	34.2	37.0
	OD	---	-.41	---	---	---	161	Other	---	B&R	SR	34.2	37.0
*Peng (2012) S2	WD	-.25	-.54	-.20	-.34	.21	366	BFI	2	O	SR	---	38.0
Penney et al. (2011)	WD	---	-.09	---	---	.22	239	BFI	10	O	SR	41.1	56.0
*Richards & Schat (2011)	WD	-.35	-.19	-.06	-.28	.17	146	BFI	10	B&R	OR	37.0	50.0
*Sackett et al. (2006)	ID	-.07	-.30	-.02	-.40	.37	900	BFI	10	B&R	SR	43.4	76.0
	OD	-.03	-.54	-.13	-.28	.30	900	BFI	10	B&R	SR	43.4	76.0
	WD	-.08	-.52	-.13	-.38	-.39	900	BFI	10	B&R	SR	43.4	76.0
*Scherer et al. (2013)	WD	.06	-.15	-.04	-.17	.24	193	BFI	10	O	SR	24.0	73.0
Shoss et al. (2016)	OD	---	-.22	---	-.12	.22	461	BFI	10	O	SR	44.8	50.0
	ID	---	-.16	---	-.17	.23	461	BFI	10	O	SR	44.8	50.0
Smithikrai (2008)	WD	---	-.49	---	-.42	---	612	FFM	12	O	SR	31.1	68.0
Spector & Che (2014)	WD	---	-.14	---	---	-.21	146	BFI	10	O	SR	22.1	75.0
	WD	---	-.22	---	---	-.13	146	BFI	10	O	OR	22.1	75.0
Sulea et al. (2013)	OD	---	-.23	---	-.14	.15	236	Other	10-19	O	SR	38.1	54.0
Yang & Diefendorff (2009)	OD	---	-.15	---	-.19	---	231	FFM	12	O	SR	27.8	70.0
	ID	---	-.20	---	-.24	---	231	FFM	12	O	SR	27.8	70.0
Zhou et al. (2014)	OD	---	-.37	---	-.32	.21	932	BFI	10	O	SR	21.8	78.0
	ID	---	-.28	---	-.41	.15	932	BFI	10	O	SR	21.8	78.0

*Note.* ID = Interpersonal workplace deviance, OD = Organizational workplace deviance, WD = overall workplace deviance; O = Openness, C = Conscientiousness, E = Extraversion, A = Agreeableness, N = Neuroticism; B5 Q = Big Five personality questionnaire; BFI = personality questionnaire based on the Big Five Inventory (i.e., Goldberg, 1990); FFM = personality questionnaire based on the Five-Factor Model (McCrae & Costa, 1992); # items = the number of items used in each study to assess one personality domain scale (a few studies used different numbers of items for different personality domain scales; we then included the range of the number of items used in the respective study in the table); WD Q = questionnaire used to assess workplace deviance; B&R = Bennett and Robinson's (2000) workplace deviance measure; O = Other measure used to assess personality or workplace deviance; WD rater = source of the workplace deviance rating; SR = self-rated workplace deviance, OR = other-rated workplace deviance, OB = WD rated by objective company records; Age = the average age of participants in each study; % women = the average percentage of women in each study. \*Included in the two-stage meta-analytical structural equation model.

Table 4  
*Studies, Effect Sizes, and Codings included in the HEXACO – WD Meta-Analyses*

Study	WD form	<i>r</i>						<i>N</i>	# items	WD Q	WD rater	Age	% Women
		H	E	X	A	C	O						
*Chirumbolo (2015)	WD	-.20	.09	.01	-.07	-.06	-.21	203	10	O	SR	41.1	53.7
*De Vries (2014)	WD	-.47	-.12	.01	-.22	-.37	.13	238	32	O	SR	32.9	47.9
De Vries & Van Gelder (2015)	WD	-.34	-.05	.01	-.15	-.22	.09	455	32	O	SR	45.6	45.3
De Vries et al. (2014)	WD	-.30	---	---	---	-.32	---	289	24-32	O	SR	37.9	77.9
*Lee, Ashton, & De Vries (2005) S1	WD	-.51	-.29	.10	-.24	-.16	-.06	106	18	O	SR	26.4	45.3
*Lee, Ashton, & De Vries (2005) S2	WD	-.34	.01	.09	-.14	-.34	.18	128	18	O	SR	21.0	64.1
*Lee, Ashton, & De Vries (2005) S3	WD	-.55	-.28	.15	-.25	-.38	.07	179	18	O	SR	20.7	55.9
Lee, Ashton, & Shin (2005)	ID	-.25	---	---	---	---	---	276	---	B&R	SR	37.6	50.0
	OD	-.33	---	---	---	---	---	276	---	B&R	SR	37.6	50.0
Louw et al. (2016)	OD	-.46	-.20	.00	-.09	-.43	.07	114	16	B&R	SR	30.4	52.6
*Marcus et al. (2007) S1	WD	-.46	-.23	.07	-.03	-.31	-.02	169	16	O	SR	21.5	74.0
*Marcus et al. (2007) S2	WD	-.38	-.13	.06	-.10	-.35	.01	496	16	O	SR	---	59.0
O'Neill et al. (2011)	WD	-.36	---	---	---	---	---	464	16	B&R	SR	---	---
	ID	-.32	---	---	---	---	---	464	16	B&R	SR	---	---
	OD	-.33	---	---	---	---	---	464	16	B&R	SR	---	---
*Pletzer et al. (2015) S1	ID	-.54	-.16	-.08	-.21	-.55	-.38	337	16	B&R	SR	34.5	30.0
	OD	-.48	-.13	-.13	-.14	-.56	-.31	337	16	B&R	SR	34.5	30.0
	WD	-.52	-.15	-.11	-.17	-.58	-.35	337	16	B&R	SR	34.5	30.0
*Pletzer et al. (2015) S2	ID	-.43	.01	-.13	-.19	-.42	-.31	441	16	B&R	SR	33.2	24.0
	OD	-.47	.03	-.23	-.17	-.18	-.31	441	16	B&R	SR	33.2	24.0
	WD	-.47	-.03	-.20	-.19	-.47	-.32	441	16	B&R	SR	33.2	24.0
*Wiltshire et al. (2014)	WD	-.47	.05	-.29	-.19	-.58	-.26	268	10	B&R	SR	40.3	51.0
*Zettler & Hilbig (2010)	WD	-.37	-.20	-.13	-.13	-.37	-.06	148	---	B&R	SR	35.0	48.0

*Note.* ID = Interpersonal workplace deviance, OD = Organizational workplace deviance, WD = overall workplace deviance; H = Honesty-Humility, E = Emotionality, X = Extraversion, A = Agreeableness, C = Conscientiousness, O = Openness to Experience; # items = the number of items used in each study to assess one personality domain scale; WD Q = questionnaire used to assess workplace deviance; B&R = Bennett and Robinson's (2000) workplace deviance measure; O = other measure used to assess workplace deviance; WD rater = source of the workplace deviance rating; SR = self-rated workplace deviance, OR = other-rated workplace deviance; Age = the average age of participants in each study; % women = the average percentage of women in each study; \*Included in the two-stage meta-analytical structural equation model.

**Moderator Variables**

**Percentage of women.** Except for three individual studies, all studies mentioned the percentage of women. Across all included studies, the percentage of women ranged from 24% to 78% and the average percentage of women among all studies was 55.3%.

**Age.** Across the individual studies that mentioned the average age of the sample ( $k = 62$ ), it ranged between 18.3 to 46.3 years, with an average of 32.1 years.

**Personality measure.** The B5 domain scales were assessed with a variety of questionnaires. Within this meta-analysis, 57 of the included individual studies used a B5 measure. Most of the studies used a questionnaire based on Goldberg (1982; 1990; B5;  $k$  per domain scales = 21 – 39), followed by questionnaires based on Costa and McCrae (1992; FFM;  $k$  per domain scales = 6 – 9). The remaining studies used other questionnaires or a combination of questionnaires (e.g., Dawson, 1996; Johnson, 2002; Ostendorf, 1990; Sava, 2008). All included studies that examined the HEXACO domain scales used the HEXACO personality inventory (Lee & Ashton, 2004).

**Number of items.** The different personality questionnaires varied in the number of items they contained. For each personality domain scale, the number of items was coded. For the B5 domain scales, this ranged from 2 to 56, with a median of 10 items. For the HEXACO domain scales, this ranged from 10 to 32 with a median of 16 items (see Tables 3 and 4 for the codings).

**Workplace deviance questionnaire.** Workplace deviance can be assessed with a variety of different questionnaires. Following Berry et al. (2007), we tested if the relations between personality and workplace deviance differed depending on whether Bennett and Robinson's (2000;  $k$  for B5 domain scales = 11 – 25;  $k$  for HEXACO domain scales = 5 – 7) questionnaire or another questionnaire or combination of those (i.e., Aquino, Lewis, & Bradfield, 1999; Ashton, 1998; Coyne & Gentile, 2006; Fox & Spector, 1999; Gruys & Sackett, 2003; Kelloway & Loughlin, 2002; Le et al., 2011; Peng, 2012; Spector et al., 2006; Spector & Fox, 2002; Stewart, Bing, Davison, Woehr, & McIntyre, 2009;  $k$  for B5 domain scales = 17 – 29;  $k$  for HEXACO domain scales = 8 – 9) was used to assess workplace deviance.

**Source of workplace deviance rating (self vs. other).** To rate workplace deviance, studies used either self-report measures ( $k$  for B5 domain scales = 23 – 46) or other-report measures ( $k$  for B5 domain scales = 7 – 12). Only one study used an objective measure of workplace deviance (Kluemper et al., 2013). When a study reported both self- and other-ratings (e.g., Spector & Che, 2014), we included the self-rating in the overall analysis, but mention the results with other-ratings included in the overall analysis as well. For the HEXACO, no study included other-ratings of workplace deviance.

### Data Analysis

The Pearson product moment correlation coefficient ( $r$ ) between one of the Big Five or HEXACO personality domain scales and workplace deviance was used as the effect size. Cohen



(1988) stated that  $r$  can be interpreted as a small ( $r = .10$ ), medium ( $r = .30$ ), or large ( $r = .50$ ) value. Comprehensive Meta-Analysis Software (CMA; Biostat, USA) was used to conduct the analyses for this study. Based on the assumption that we did not sample all studies available and that heterogeneity was present in the sample of effect sizes, a random effects model (REM) with inverse-variance weights was used (Borenstein, Hedges, Higgins, & Rothstein, 2009). Using the REM, it is assumed that the true effect size varies from study to study, and the summary effect is the estimate of the mean of the distribution of effect sizes. The steps CMA performs for this meta-analysis are as follows:

1. All studies included in this meta-analysis reported the effect size ( $r$ ) and their sample size ( $N$ ). Because the variance depends on the magnitude of the correlation coefficient ( $r$ ), CMA converts the correlations to Fisher's  $z$ . All analyses are performed using Fisher's  $z$ . After the analysis, the results are converted back to correlations.
2. The weight assigned to each study, and therefore to each Fisher's  $z$  value, is the inverse of that study's variance. Since a REM is used, the variance is the sum of the within-study variance ( $V_{yi}$ ) and the between-studies variance ( $\tau^2$ ) (DerSimonian & Laird, 1986)
3. By means of a REM, the overall mean weighted effect size of all studies is computed. The overall  $r$  for this meta-analysis is the sum of the product of all  $r$ , converted to Fisher's  $z$  value, and weights divided by the sum of all weights.

To assess whether the variation between observed correlations was due to real heterogeneity between studies and not because of within-study error, a  $Q$  statistic and an  $I^2$  index were computed, where  $I^2 = [(Q-df)/Q] \times 100\%$  with  $df = k - 1$  and  $k =$  number of effect sizes (Borenstein et al., 2009). The  $I^2$  is the proportion of the observed variance that reflects real, rather than chance, differences between effect sizes. Higgins and colleagues (2003) provided benchmark values for the interpretation of  $I^2$ : 25%, 50%, and 75% might be considered as low, moderate, and high, respectively. To guarantee that the effect sizes are independent, the effect sizes for overall workplace deviance, ID, and OD were combined for the overall analysis if a study measured two or more of those forms of workplace deviance.

### **Publication Bias**

In science, studies that report significant effect sizes are more likely to be published than studies that report non-significant effect sizes (Borenstein et al., 2009). Such publication bias can result in an overestimation of the true effect size. Publication bias would be present if precision and the study effect sizes differ significantly according to Begg and Mazumdar's (1994) rank correlation and Egger's regression intercept (Egger et al., 1997). We also assessed the likelihood of publication bias using Duval and Tweedie's (2000) trim-and-fill method which

mathematically corrects for asymmetry in the funnel plot of standard error by Fisher's  $z$ . However, this method has been seriously criticized because it not only corrects for publication bias that does not exist, resulting in underestimated effect sizes (Terrin et al., 2003), but also because it does not correct for publication bias that does exist, resulting in overestimated effect sizes (Carter et al., 2017). Results of the trim-and-fill method should therefore be interpreted with caution.

### **Moderator Analyses**

The moderator analyses (subgroup analyses and univariate meta-regressions) in a mixed-effects model were used to test the influence of systematic variations in study characteristics on the overall weighted effect size. The source of the workplace deviance rating (self versus other), the workplace deviance questionnaire (Bennett & Robinson, 2000, versus other), and the personality questionnaire for the B5 (Big Five versus FFM) were included as categorical moderators.<sup>6</sup> The percentage of women, the average age of the sample, and the number of items used to assess personality were included as continuous moderators.

### **Two-Stage Meta-Analytical Structural Equation Modeling**

A two-stage random-effects meta-analytical structural equation modeling (MASEM) was conducted to calculate the variance in workplace deviance explained by the B5 and the HEXACO personality model (Cheung, 2014, 2015). For all studies measuring the correlations between overall workplace deviance and all five B5 personality domain scales ( $k = 12$ ) or all six HEXACO personality domain scales ( $k = 11$ ), the correlations between the personality domain scales were coded as well. When the sample size differed per correlation, the lowest (most conservative) number of participants was coded. All studies included in the MASEM analysis and their corresponding coded effect sizes are listed in Table 5 for B5 and in Table 6 for HEXACO.

MASEM combines meta-analysis with structural equation modeling and consists of two stages: in the first stage, the correlations between all variables from all primary studies are synthesized into an overall correlation matrix weighted by sample size. In the second stage, this meta-analytic correlation matrix is subjected to a structural equation model to calculate the explained variance in workplace deviance. In our study, two estimates of explained variance resulted from this test: the variance in workplace deviance explained by the B5 model, and the variance in workplace deviance explained by the HEXACO model.

Table 5  
Correlations for the Two-Stage Meta-Analytical Structural Equation Model for the B5 and WD

	Bolton et al. (2010)	Chang & Smithikrai (2010)	Flaherty & Moss (2007)	Kluemper et al. (2014) S1	Kluemper et al. (2014) S2	Lee et al. (2005) S1	Lee et al. (2005) S2	Lee et al. (2005) S3	Peng (2012) S2	Richards & Schat (2011)	Sackett et al. (2006)	Scherer et al. (2013)
N	233	1662	131	233	230	106	128	179	366	146	900	193
WD-O	.02	-.29	-.13	-.03	-.01	.12	.20	-.01	-.25	-.35	-.08	.06
WD-C	-.28	-.47	-.28	-.27	-.30	-.27	-.28	-.41	-.54	-.19	-.52	-.15
WD-E	-.13	-.36	-.18	-.03	.07	.09	.13	.12	-.20	-.06	-.13	-.04
WD-A	-.28	-.41	-.18	-.23	-.39	-.29	-.05	-.26	.34	-.28	-.38	-.17
WD-N	.27	.21	.40	.19	.19	.04	.10	-.06	.21	.17	.39	.24
O-C	.17	.39	.02	.14	.23	.00	.18	-.17	.31	.43	.04	.23
O-E	.22	.43	.06	.34	.27	.39	.27	-.18	.38	.11	.25	.24
O-A	-.02	.30	.32	.24	.20	.34	.21	-.06	.08	.35	.19	.42
O-N	-.05	-.29	-.23	-.24	-.11	-.21	.07	.12	-.19	-.27	-.02	-.12
C-E	.22	.45	.16	.23	.19	-.12	.06	.03	.18	.20	.04	.07
C-A	.31	.33	.18	.46	.39	.18	.13	.28	.15	.45	.27	.29
C-N	-.30	-.27	-.33	-.42	-.34	-.22	-.07	-.04	-.19	-.22	-.24	-.34
E-A	.23	.42	-.11	.16	.18	.41	.40	.21	-.01	.41	.30	.26
E-N	-.18	-.40	-.47	-.36	-.31	-.01	-.28	-.40	-.19	-.28	-.22	-.18
A-N	-.43	-.44	-.06	-.43	-.41	.13	-.07	-.21	.02	-.22	-.19	-.14

Note. Abbreviations: N = number of participants; WD = Workplace deviance, O = Openness, C = Conscientiousness, E = Extraversion, A = Agreeableness, N = Neuroticism.

Table 6  
Correlations for the Two-Stage Meta-Analytical Structural Equation Model for the HEXACO and WD

	Chirumbolo (2015)	De Vries (2014)	Lee et al. (2005) S1	Lee et al. (2005) S2	Lee et al. (2005) S3	Marcus et al. (2007) S1	Marcus et al. (2007) S2	Pletzer et al. (2015) S1	Pletzer et al. (2015) S2	Wiltshire et al. (2014)	Zettler & Hilbig (2010)
<i>N</i>	203	238	106	128	179	169	496	337	337	268	148
WD-H	-.20	-.47	-.51	-.34	-.55	-.46	-.38	-.52	-.47	-.47	-.37
WD-E	.09	-.12	-.29	.01	-.28	-.23	-.13	-.15	-.03	.05	-.20
WD-X	.01	.01	.10	.09	.15	.07	.06	-.11	-.20	-.29	-.13
WD-A	-.07	-.22	-.24	-.14	-.25	-.03	-.10	-.17	-.19	-.19	-.13
WD-C	-.06	-.37	-.16	-.34	-.38	-.31	-.35	-.58	-.47	-.58	-.37
WD-O	-.21	.13	-.06	.18	.07	-.02	.01	-.35	-.32	-.26	-.06
H-E	-.19	.23	.16	.06	.19	.06	.14	.08	.01	-.16	.08
H-X	.13	-.13	.00	-.12	-.11	-.20	-.10	.19	.13	.22	-.03
H-A	.34	.24	.26	.17	.38	.31	.31	.54	.21	.24	.35
H-C	.35	.33	.38	.05	.33	.17	.24	.59	.50	.47	.23
H-O	.09	-.09	.25	.02	.06	.09	.15	.44	.33	.23	.23
E-X	-.34	-.12	.14	-.02	-.10	.11	.08	-.10	-.16	-.34	-.05
E-A	-.33	-.02	-.12	-.06	.00	-.15	-.18	-.21	-.10	-.27	-.25
E-C	-.26	.11	.16	-.06	.19	.01	.37	.04	.02	-.17	.11
E-O	-.30	-.05	.03	.02	-.15	.09	-.17	-.03	-.11	-.20	-.09
X-A	-.10	.08	.11	.01	-.05	-.08	.04	.43	.35	.47	.25
X-C	.04	.11	.01	.01	-.07	.06	-.01	.33	.39	.36	.31
X-O	.23	.24	.27	.14	-.01	.24	.17	.20	.29	.44	.28
A-C	.24	.12	.12	.05	.14	.07	-.13	.27	.25	.17	.15
A-O	.06	.18	.02	.04	.00	.04	.02	.25	.10	.22	.34
C-O	-.11	-.05	.28	.02	-.02	.04	.04	.54	.38	.35	.05

Note. Abbreviations: *N* = number of participants; WD = Workplace deviance, H = Honesty-Humility, E = Emotionality, X = Extraversion, A = Agreeableness, C = Conscientiousness, O = Openness to Experience.

## Results

### Personality Predicting Overall Workplace Deviance

Results for the meta-analytic relation between each B5 and HEXACO personality domain scale and workplace deviance are shown in Table 7. Consistent with our expectation, out of all eleven personality domain scales, HEXACO Honesty-Humility showed the strongest correlation with workplace deviance ( $r = -.404, p < .001, k = 16$ ). Both, Conscientiousness (B5  $r = -.281, p < .001, k = 54$ ; HEXACO  $r = -.354, p < .001, k = 14$ ) and Agreeableness (B5  $r = -.274, p < .001, k = 46$ ; HEXACO  $r = -.161, p < .001, k = 13$ ) were also significant predictors of workplace deviance. The correlations between Extraversion and workplace deviance (B5  $r = -.028, p = .353, k = 29$ ; HEXACO  $r = -.026, p = .488, k = 13$ ) and Openness to Experience and workplace deviance (B5  $r = -.059, p < .05, k = 28$ ; HEXACO  $r = -.063, p = .284, k = 13$ ) were either non-significant or so small that they were negligible. B5 Neuroticism ( $r = .142, p < .001, k = 42$ ) and HEXACO Emotionality ( $r = -.106, p < .01, k = 13$ ) correlated significantly with workplace deviance, and in opposite directions.<sup>7</sup>

In line with our expectations, we did not find differences in effect sizes for B5 and HEXACO Openness to Experience, Conscientiousness, and Extraversion (see Table 7 for the  $Q$ -values statistically comparing the two effect sizes with each other). For Agreeableness, the effect size was significantly more negative for the B5 compared to the HEXACO,  $Q(1) = 23.231, p < .001$ . The correlations of B5 Neuroticism and HEXACO Emotionality with workplace deviance also differed significantly,  $Q(1) = 42.578, p < .001$ .

Table 7  
*Meta-Analytic Results for Overall Workplace Deviance*

Domain scale	Overall Effect Size						Heterogeneity				Comparisons	
	<i>k</i>	<i>N</i>	<i>r</i>	CV <sub>LL</sub>	CV <sub>UL</sub>	<i>p</i>	<i>I</i> <sup>2</sup>	<i>T</i>	<i>T</i> <sup>2</sup>	<i>Q</i> ( <i>df</i> )	<i>p</i> for <i>Q</i>	
B5 Openness	28	12297	-.059	-.108	-.009	.021	85.086	.118	.014	0.005 (1)	.946	
H Openness to Experience	13	4838	-.063	-.177	.052	.284	93.192	.201	.040			
B5 Conscientiousness	54	27471	-.281	-.316	-.246	.000	89.606	.132	.017	2.655 (1)	.103	
H Conscientiousness	14	5127	-.354	-.430	-.273	.000	89.331	.158	.025			
B5 Extraversion	29	12633	-.028	-.086	.031	.353	89.866	.148	.022	0.002 (1)	.963	
H Extraversion	13	4838	-.026	-.098	.047	.488	81.771	.115	.013			
B5 Agreeableness	46	23709	-.274	-.309	-.237	.000	87.941	.121	.015	23.231 (1)	.000	
H Agreeableness	13	4838	-.161	-.188	-.133	.000	0.000	.000	.000			
B5 Neuroticism	41	20495	.142	.101	.182	.000	87.345	.120	.014	42.578 (1)	.000	
H Emotionality	13	4838	-.106	-.168	-.044	.001	75.197	.095	.009			
H Honesty-Humility	16	7053	-.404	-.450	-.356	.000	79.271	.096	.009			

*Note.* *k* = number of statistically independent samples; *N* = cumulative sample size; *r* = sample-size weighted mean observed correlation; CV<sub>LL</sub> and CV<sub>UL</sub> = lower and upper bounds of the 95% confidence interval; B5 = Big five, H = HEXACO

### Publication Bias Analysis

The results of the publication bias analyses for all B5 and the HEXACO personality domain scales can be found in Table 8. The funnel plot for all B5 domain scales except Agreeableness showed signs of asymmetry, and Egger's regression intercept (1997) was significant for all B5 personality domain scales except for Openness. Begg and Mazumdar's rank correlation (1994) was only significant for Neuroticism. However, the interpretation of the newly estimated effect sizes using the trim-and-fill method (Duval & Tweedie, 2000) was not substantially different for any of the B5 personality domain scales. Overall, it can be concluded that publication bias is unlikely to have had a strong influence on our meta-analytic findings for the B5. For HEXACO Conscientiousness the funnel plot was symmetric and no studies were imputed using the trim-and-fill method (Duval & Tweedie, 2000). Both, Begg and Mazumdar's rank correlation (1994) an Egger's regression intercept (1997) were also non-significant for this personality domain scale, suggesting that publication bias was not present. For the HEXACO domain scales Honesty-Humility, Emotionality, Extraversion, Agreeableness, and Openness to Experience, a few studies (1 – 3) were imputed using the trim-and-fill method (Duval & Tweedie, 2000), but this did not change the interpretation of the overall weighted effect size for any of those personality domain scales. Begg and Mazumdar's rank correlation (1994) was non-significant for all HEXACO personality domain scales, and Egger's regression intercept (1997) was statistically significant only for Extraversion and Openness to Experience. Overall, it is very unlikely that publication bias strongly influenced the results for the HEXACO personality domain scales.

Table 8

#### *Publication Bias Analyses Results Big Five and HEXACO*

	D&T <sub>left</sub>	D&T <sub>right</sub>	Adjusted ES	B&M	Egger
B5 Openness	6	---	-.098	.418	.152
B5 Conscientiousness	13	---	-.332	.081	.000
B5 Extraversion	9	---	-.092	.081	.007
B5 Agreeableness	---	---	---	.075	.008
B5 Neuroticism	1	---	.136	.046	.002
H Honesty-Humility	---	3	-.376	.558	.939
H Emotionality	---	2	-.080	.360	.225
H Extraversion	2	---	-.049	.583	.043
H Agreeableness	2	---	-.169	.669	.421
H Conscientiousness	---	---	---	.913	.233
H Openness to Experience	1	---	-.082	.669	.009

*Note.* D&T = Duwal and Tweedie's trim-and-fill approach for the funnel plot; D&T<sub>left/right</sub> = imputed studies to the left/right of the overall mean weighted effect size; Adjusted ES = adjusted effect size after imputing studies using Duwal & Tweedie's trim-and-fill approach; B&M = *p*-value of the Begg and Mazumdar's rank correlation test; Egger = *p*-value of the Egger's regression intercept test; B5 = Big Five, H = HEXACO.

### Differential Prediction of ID and OD

As can be seen in Table 9 (B5) and Table 10 (HEXACO), subgroup analyses revealed that none of the eleven personality domain scales (B5 and HEXACO) correlated differently with ID or OD. This contradicts our expectations and previous meta-analytic results based on a smaller number of effect sizes by Berry and colleagues (2007), who found that B5 Agreeableness more strongly correlates with ID than with OD, B5 Conscientiousness more strongly correlates with OD than with ID, and B5 Extraversion more strongly and negatively with OD (see also Table 11 for a comparison of our results with those from previous meta-analyses).

Table 9  
*Meta-Analytic Results of Big Five and WD Domain Scales: ID and OD*

		$k$ ( $N$ )	$r$	$CV_{LL}$	$CV_{UL}$	$p$	$Q$ (df)	$p$ for $Q$
Openness	ID	16 (3706)	-.048	-.099	.002	.060	0.321 (1)	.571
	OD	15 (3606)	-.030	-.070	.011	.152		
Conscientiousness	ID	30 (8546)	-.244	-.293	-.194	.000	1.247 (1)	.264
	OD	33 (9567)	-.284	-.331	-.235	.000		
Extraversion	ID	16 (3706)	-.000	-.063	.062	.988	0.075 (1)	.785
	OD	15 (3606)	-.012	-.069	.045	.673		
Agreeableness	ID	30 (8352)	-.259	-.312	-.206	.000	0.004 (1)	.952
	OD	29 (8423)	-.257	-.300	-.213	.000		
Neuroticism	ID	23 (6258)	.159	.090	.227	.000	0.209 (1)	.647
	OD	24 (6624)	.140	.094	.185	.000		

*Note.* ID = interpersonal workplace deviance; OD = organizational workplace deviance;  $k$  = number of statistically independent samples;  $N$  = total sample size;  $r$  = sample-size weighted mean observed correlation;  $CV_{LL}$  and  $CV_{UL}$  = lower and upper bounds of the 95% confidence interval.

### Comparison of Current Results with Previous Meta-Analytic Results (B5)

Three previous meta-analyses have examined the relations between B5 domain scales and workplace deviance (Berry et al., 2012, 2007; Salgado, 2002). The effect sizes found in these previous meta-analyses and the effect sizes from the current meta-analysis are shown in Table 11. The most notable finding is that the magnitude of the overall weighted correlations for B5 Conscientiousness ( $r = -.28$  compared to Salgado, 2002:  $r = -.16$ ) and Agreeableness ( $r = -.27$  compared to Salgado, 2002:  $r = -.13$ ) are much larger in the current meta-analysis than in Salgado's (2002) meta-analysis. This difference might be due to the narrower focus of deviant behaviors applied by Salgado (2002).



Table 10.

*Meta-Analytic Results of HEXACO and WD Domain Scales: ID and OD*

		<i>k</i> ( <i>N</i> )	<i>r</i>	<i>CV</i> <sub>LL</sub>	<i>CV</i> <sub>UL</sub>	<i>p</i>	<i>Q</i> (df)	<i>p</i> for <i>Q</i>
Honesty-Humility	ID	4 (1509)	-.392	-.505	-.265	.000		
	OD	5 (1623)	-.412	-.480	-.339	.000	0.081 (1)	.776
Emotionality	ID	2 (778)	-.074	-.245	.102	.411		
	OD	3 (892)	-.087	-.225	.054	.226	0.014 (1)	.906
Extraversion	ID	2 (778)	-.105	-.174	-.035	.003		
	OD	3 (892)	-.139	-.251	-.024	.018	0.254 (1)	.614
Agreeableness	ID	2 (778)	-.198	-.264	-.129	.000		
	OD	3 (892)	-.152	-.216	-.087	.000	0.992 (1)	.337
Conscientiousness	ID	2 (778)	-.485	-.608	-.339	.000		
	OD	3 (892)	-.399	-.628	-.107	.009	0.335 (1)	.563
Openness to Experience	ID	2 (778)	-.342	-.402	-.278	.000		
	OD	3 (892)	-.203	-.377	-.016	.034	2.081 (1)	.149

*Note.* ID = interpersonal workplace deviance; OD = organizational workplace deviance; *k* = number of statistically independent samples; *N* = total sample size; *r* = sample-size weighted mean observed correlation; *CV*<sub>LL</sub> and *CV*<sub>UL</sub> = lower and upper bounds of the 95% confidence interval.

This difference does not hold when comparing the current results to the effect sizes found by Berry et al. (2012) for self-reported workplace deviance (B5 Conscientiousness:  $r = -.28$  compared to Berry et al. (2012):  $r = -.31$ ; B5 Agreeableness:  $r = -.27$  compared to Berry et al. (2012):  $r = -.35$ ). In addition, the magnitude of the overall weighted correlation for Neuroticism ( $r = .14$  compared to Salgado, 2002:  $r = .04$  and Berry et al., 2012:  $r = .23$ ) is also substantially different in the current meta-analysis, whereas the magnitude of the overall weighted effect sizes are relatively similar to the previous estimates for Openness to Experience ( $r = -.06$  compared to Salgado, 2002:  $r = .10$  and Berry et al., 2012:  $r = -.06$ ) and Extraversion ( $r = -.03$  compared to Salgado, 2002:  $r = .01$  and Berry et al., 2012:  $r = -.03$ ). Given that the current meta-analysis is based on a much larger sample of studies, it seems reasonable to place more confidence in these newer estimates

### **Moderator Analyses**

The results of the categorical moderator analyses can be found in Table 12 (B5) and Table 13 (HEXACO), and the results for the continuous meta-regressions can be found in Table 14 (B5 and HEXACO).

Table 11  
*Comparison of the Results of the Current Meta-Analysis and Previous Meta-Analyses (only for B5)*

B5 domain scale	This study ( <i>k</i> )	Salgado (2002) ( <i>k</i> )*	Berry et al. (2012) <sup>a</sup>	This study		Berry et al. (2007)	
				ID ( <i>k</i> )	OD ( <i>k</i> )	ID ( <i>k</i> )	OD ( <i>k</i> )
O	-.06 (28)	.10 (8)	-.06	-.05 (16)	-.03 (15)	-.07 (8)	-.03 (5)
C	-.28 (54)	-.16 (13)	-.31	-.24 (30)	-.28 (33)	-.19 (11)	-.34 (8)
E	-.03 (29)	.01 (12)	-.03	-.00 (16)	-.01 (15)	.02 (8)	-.07 (5)
A	-.27 (46)	-.13 (9)	-.35	-.26 (30)	-.26 (29)	-.36 (10)	-.25 (8)
N	.14 (41)	.04 (15)	.23*	.16 (23)	.14 (24)	.20* (10)	.19* (7)

*Note.* WD = Workplace Deviance; O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism. *k* = number of studies included in meta-analysis. <sup>a</sup> The correlations between personality domain scales and self-reported workplace deviance are reported in Berry et al. (2012) but are based on data from Berry et al. (2007). The number of studies per effect size (*k*) is not reported in this article. These correlations are uncorrected, mean sample-size weighted correlations. \* Note that we reversed the correlations for Salgado (2002) because in this meta-analysis the relations between personality and a *lack* of deviant behavior was measured (this does not apply to Neuroticism, because Salgado (2002) measured Emotional Stability), and for B5 Neuroticism from Berry et al. (2007) and Berry et al. (2012).

Table 12  
*Results of the Categorical Moderator Analyses for the B5*

	<i>k</i> ( <i>N</i> )	<i>r</i>	CV <sub>LL</sub>	CV <sub>UL</sub>	<i>p</i>	<i>O</i> (df)	<i>p</i> for <i>O</i>
<b>B5 Openness</b>							
<b>WD Questionnaire</b>						2.450 (1)	.118
Bennett & Robinson (2000)	11 (7437)	-.108	-.196	-.019	.017		
Other	17 (4860)	-.028	-.075	.019	.239		
<b>WD rater</b>						0.981 (1)	.322
Self	23 (11366)	-.054	-.108	.001	.055		
Other	7 (1468)	-.107	-.197	-.016	.021		
<b>Personality questionnaire</b>						3.286 (1)	.070
FFM	6 (2562)	-.148	-.260	-.033	.012		
BFI	21 (9201)	-.034	-.079	.010	.130		
<b>B5 Conscientiousness</b>							
<b>WD Questionnaire</b>						8.730 (1)	.003
Bennett & Robinson (2000)	25 (15938)	-.331	-.374	-.286	.000		
Other	29 (11533)	-.237	-.280	-.192	.000		
<b>WD rater</b>						19.495 (1)	.000
Self	46 (24830)	-.306	-.340	-.272	.000		
Other	12 (3738)	-.173	-.221	-.124	.000		
<b>Personality questionnaire</b>						0.009 (1)	.924
FFM	8 (3636)	-.278	-.406	-.139	.000		
BFI	39 (18919)	-.285	-.322	-.247	.000		
<b>B5 Extraversion</b>							
<b>WD Questionnaire</b>						0.055 (1)	.815
Bennett & Robinson (2000)	11 (7437)	-.040	-.151	.072	.482		
Other	18 (5196)	-.025	-.082	.032	.390		
<b>WD rater</b>						0.323 (1)	.570
Self	24 (11702)	-.037	-.102	.028	.262		
Other	7 (1468)	-.061	-.112	-.010	.020		
<b>Personality questionnaire</b>						0.001 (1)	.981
FFM	6 (2562)	-.044	-.257	.174	.697		
BFI	22 (9537)	-.041	-.079	-.003	.036		
<b>B5 Agreeableness</b>							
<b>WD Questionnaire</b>						13.240 (1)	.000
Bennett & Robinson (2000)	23 (14819)	-.332	-.378	-.285	.000		
Other	23 (8890)	-.209	-.256	-.162	.000		
<b>WD rater</b>						0.434 (1)	.510
Self	38 (22267)	-.284	-.319	-.247	.000		
Other	10 (1979)	-.248	-.347	-.143	.000		
<b>Personality questionnaire</b>						0.038 (1)	.845
FFM	9 (4484)	-.284	-.370	-.193	.000		
BFI	34 (16973)	-.274	-.316	-.232	.000		
<b>B5 Neuroticism</b>							
<b>WD Questionnaire</b>						0.140 (1)	.708
Bennett & Robinson (2000)	15 (10188)	.153	.078	.227	.000		
Other	26 (10307)	.137	.093	.180	.000		
<b>WD rater</b>						0.870 (1)	.351
Self	33 (17854)	.154	.110	.198	.000		
Other	11 (3324)	.116	.047	.183	.001		
<b>Personality questionnaire</b>						0.011 (1)	.917
FFM	6 (2562)	.158	.015	.295	.030		
BFI	30 (14197)	.151	.109	.192	.000		

*Note.* *k* = cumulative number of studies; *r* = sample size weighted correlation; CV<sub>LL</sub> and CV<sub>UL</sub> = lower and upper bounds of the 95% confidence interval; WD = Workplace deviance; WD rater = source of the workplace deviance rating; B5 = Big Five; BFI = personality questionnaire based on the Big Five Inventory (i.e., Goldberg, 1990); FFM = personality questionnaire based on the Five-Factor Model (McCrae & Costa, 1992).

Table 13  
*Results of the Categorical Moderator Analyses for the HEXACO*

	<i>k</i> ( <i>N</i> )	<i>r</i>	<i>CV</i> <sub>LL</sub>	<i>CV</i> <sub>UL</sub>	<i>p</i>	<i>Q</i> (df)	<i>p</i> for <i>Q</i>
<b>H Honesty-Humility</b>							
<b>WD Questionnaire</b>						0.193 (1)	.660
Bennett & Robinson (2000)	7 (4790)	-.415	-.482	-.343	.000		
Other	9 (2263)	-.394	-.458	-.325	.000		
<b>H Emotionality</b>							
<b>WD Questionnaire</b>						0.262 (1)	.609
Bennett & Robinson (2000)	5 (2864)	-.087	-.187	.015	.095		
Other	8 (1974)	-.121	-.204	-.036	.005		
<b>H Extraversion</b>							
<b>WD Questionnaire</b>						21.375 (1)	.000
Bennett & Robinson (2000)	5 (2864)	-.155	-.227	-.080	.000		
Other	8 (1974)	.050	.006	.095	.026		
<b>H Agreeableness</b>							
<b>WD Questionnaire</b>						0.979 (1)	.323
Bennett & Robinson (2000)	5 (2864)	-.175	-.210	-.139	.000		
Other	8 (1974)	-.143	-.194	-.092	.000		
<b>H Conscientiousness</b>							
<b>WD Questionnaire</b>						5.880 (1)	.015
Bennett & Robinson (2000)	6 (3153)	-.445	-.544	-.334	.000		
Other	8 (1974)	-.279	-.354	-.202	.000		
<b>H Openness to Experience</b>							
<b>WD Questionnaire</b>						11.678 (1)	.001
Bennett & Robinson (2000)	5 (2894)	-.213	-.319	-.102	.000		
Other	8 (1974)	.025	-.054	.105	.531		

*Note.* *k* = cumulative number of studies; *N* = cumulative sample size; *r* = sample size weighted correlation; *CV*<sub>LL</sub> and *CV*<sub>UL</sub> = lower and upper bounds of the 95% confidence interval; H = HEXACO.

Table 14  
*Results of the Continuous Meta-Regressions*

	<i>k</i>	Slope	R <sup>2</sup>	Slope <i>p</i> <sub>two-tailed</sub>
<b>B5 Openness</b>				
Average age	26	-.005	.00	.205
% Women	26	-.001	.00	.794
# items	26	.003	.00	.534
<b>H Openness to Experience</b>				
Average age	12	-.009	.00	.285
% Women	13	.009	.58	.006
# items	12	.016	.33	.042
<b>B5 Conscientiousness</b>				
Average age	49	.001	.00	.712
% Women	49	-.002	.09	.178
# items	49	.001	.00	.799
<b>H Conscientiousness</b>				
Average age	13	.001	.00	.887
% Women	14	.003	.00	.417
# items	13	.004	.04	.503
<b>B5 Extraversion</b>				
Average age	27	-.004	.00	.338
% Women	26	-.002	.01	.468
# items	27	.004	.00	.459
<b>H Extraversion</b>				
Average age	12	-.009	.03	.061
% Women	13	.005	.52	.011
# items	12	.006	.07	.306
<b>B5 Agreeableness</b>				
Average age	41	-.000	.00	.919
% Women	42	-.005	.22	.004
# items	42	-.001	.00	.767
<b>H Agreeableness</b>				
Average age	12	.001	.00	.751
% Women	13	.002	.00	.060
# items	12	-.002	.00	.526
<b>B5 Neuroticism</b>				
Average age	37	.006	.11	.031
% Women	36	.001	.07	.500
# items	38	-.000	.00	.994
<b>H Emotionality</b>				
Average age	12	.009	.22	.024
% Women	13	-.002	.00	.444
# items	12	-.003	.00	.518
<b>H Honesty-Humility</b>				
Average age	14	.008	.27	.036
% Women	15	.003	.21	.142
# items	14	.001	.00	.902

*Note.* *k* = cumulative number of studies; *N* = cumulative sample size; H = HEXACO, B5 = Big Five; Average Age = the average age of participants in all included studies; % Women = the average percentage of women in all included studies; # items = the number of items used to assess the respective personality domain scale.

The personality questionnaire used, based either on Goldberg (1990) for the B5 or on McCrae and Costa (1992) for the FFM, did not moderate the relation between any of the B5 personality domain scales and workplace deviance. Hence, our approach of combining the B5 and FFM domain scales seemed to be valid. The number of items used to assess a personality domain scale also did not moderate the relations between most personality domain scales and workplace deviance; it was only significant for HEXACO Openness to Experience.

The questionnaire used to assess workplace deviance only moderated the relations between personality and workplace deviance for the following domain scales: B5 Conscientiousness, B5 Agreeableness, HEXACO Extraversion, HEXACO Conscientiousness, and HEXACO Openness to Experience. The relations were stronger and more negative for all of these personality domain scales when Bennett and Robinson's (2000) workplace deviance questionnaire, compared to all other questionnaires, was used. The relations with workplace deviance for the remaining domain scales were not moderated by the questionnaire used to assess workplace deviance.

The source of the workplace deviance rating significantly moderated the relation between B5 Conscientiousness and workplace deviance. B5 Conscientiousness showed a significantly stronger correlation with self-ratings ( $r = -.306$ ,  $k = 46$ ) than with other-ratings of workplace deviance ( $r = -.173$ ,  $k = 12$ ). For all four other B5 personality domain scales, the source of the workplace deviance rating did not moderate the relation of interest. This contradicts previous meta-analytic findings, as Berry et al. (2012) report notable differences in the relations of personality with self- and other-reports of workplace deviance. This moderation effect could not be tested for the HEXACO because no study measured the relations with other-reports of workplace deviance.

The percentage of women included in each study moderated the relations between B5 Agreeableness, HEXACO Openness to Experience, and HEXACO Extraversion and workplace deviance. For HEXACO Openness to Experience ( $k = 13$ ,  $slope = .009$ ,  $p < .01$ ) and HEXACO Extraversion ( $k = 13$ ,  $slope = .005$ ,  $p < .05$ ) the effect size became more positive with an increasing percentage of women in the included studies, whereas it became more negative for B5 Agreeableness ( $k = 42$ ,  $slope = -.005$ ,  $p < .01$ ). For the remaining eight personality domain scales, the percentage of women included in each study did not moderate the relations between the respective personality domain scale and workplace deviance.

The average age of the participants in each study only moderated the relations between the domain scales B5 Neuroticism, HEXACO Emotionality, and HEXACO Honesty-Humility, and workplace deviance. The effect size became more positive/less negative with increasing

average age of participants in the included studies for all three personality domain scales: B5 Neuroticism ( $k = 37$ ,  $slope = .006$ ,  $p < .05$ ), HEXACO Emotionality ( $k = 12$ ,  $slope = .009$ ,  $p < .05$ ), and HEXACO Honesty-Humility ( $k = 14$ ,  $slope = .008$ ,  $p < .05$ ). For the remaining eight personality domain scales, the average age of participants in each study did not moderate the relations between the respective personality domain scales and workplace deviance.

### Comparing the B5 and the HEXACO in Predicting Workplace Deviance

We conducted a two-stage MASEM to compare the variance that is explained by either the B5 or the HEXACO in workplace deviance. The overall weighted correlation matrices synthesized in the first step can be found in Table 15 (B5) and in Table 16 (HEXACO). Because we only included studies that measured the relations between all personality domain scales and workplace deviance to ensure the validity of the MASEM approach, the number of included studies here is lower than in the overall meta-analysis ( $k = 12$  for B5,  $k = 11$  for HEXACO). However, the overall weighted effect sizes for each personality domain scale with workplace deviance closely resemble those we found when including all available studies (see Table 7, 15, and 16). In the second stage, we fitted a structural equation model with all personality domain scales predicting workplace deviance. Results show that the B5 personality domain scales explained about 17.3% of the variance in workplace deviance,  $k = 12$ ,  $N = 4970$ ,  $R^2 = .171$ , 95% CI for  $R^2$  (.127; .224)<sup>8</sup>, whereas the HEXACO personality domain scales explained about 24.9% of the variance in workplace deviance,  $k = 11$ ,  $N = 2683$ ,  $R^2 = .249$ , 95% CI for  $R^2$  (.203; .305). Hence, the HEXACO explained 7.6% more workplace deviance variance than the B5.

Table 15

*Correlation Matrix for Workplace Deviance and the B5 Personality Domain scales*

	WD	O	C	E	A	N
WD	-					
O	-.077	-				
C	-.339	.168	-			
E	-.081	.236	.148	-		
A	-.304	.218	.291	.270	-	
N	.208	-.143	-.253	-.272	-.229	-

*Note.*  $k = 12$ ,  $N = 4970$ ; WD = Workplace deviance, O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism.

Table 16

*Correlation Matrix for Workplace Deviance and the HEXACO Personality Domain scales*

	WD	H	E	X	A	C	O
WD	-						
H	-.435	-					
E	-.115	.059	-				
X	-.019	.002	-.079	-			
A	-.140	.292	.164	.142	-		
C	-.361	.331	.052	.132	.117	-	
O	-.078	.165	-.092	.210	.115	.136	-

*Note.*  $k = 11$ ,  $N = 2683$ ; WD = Workplace deviance, H = Honesty-Humility, E = Emotionality, X = Extraversion, A = Agreeableness, C = Conscientiousness, O = Openness to Experience.

### Discussion

In an effort to provide a comprehensive overview of the relations between personality and workplace deviance, the current study is the first to meta-analytically compare the B5 with the HEXACO in predicting workplace deviance, and to the best of our knowledge in predicting any organizational outcome. Our results indicate that when predicting workplace deviance, the HEXACO model outperforms the B5 model. Furthermore, Honesty-Humility was the strongest predictor of workplace deviance out of all eleven personality domain scales included in this meta-analysis. This finding underlines the importance of a personality domain scale which taps directly into individual differences in the propensity for exploitation and deception (i.e., Honesty-Humility) (Ashton, 2000; Lee, Ashton, & Shin, 2005; Ashton, Lee, & Son, 2000), at least in the prediction of workplace deviance. Considering the ubiquity of personality questionnaires in employee selection contexts (Ryan et al., 2015) and the fact that supervisor's overall job performance ratings depend heavily on workplace deviance ratings (as much as task performance ratings and more than OCB ratings; Dunlop & Lee, 2004; Rotundo & Sackett, 2002), this meta-analysis suggests that it is important to capture variance associated with Honesty-Humility in employee selection contexts. The current results also suggest that Conscientiousness and Agreeableness (Agreeableness somewhat weaker in the HEXACO model), and to a lesser extent B5 Neuroticism and HEXACO Emotionality, are important predictors of workplace deviance. Openness to Experience and Extraversion (for both B5 and HEXACO) do not seem to play a major role in the prediction of workplace deviance.

### Comparison of B5 and HEXACO Personality Domain scales

No significant differences in relations with workplace deviance between the B5 and HEXACO personality domain scales of Openness to Experience, Conscientiousness, and Extraversion were observed. This was expected because these personality domain scales are



conceptually similar in the B5 model and the HEXACO model (Lee & Ashton, 2004). B5 Agreeableness correlated more strongly with workplace deviance than HEXACO Agreeableness. This likely reflects the fact that B5 (and especially FFM) Agreeableness captures some variance associated with HEXACO Honesty-Humility, which correlates most strongly with workplace deviance. This apparently outweighs the effect of a missing (reversed) anger facet in B5 Agreeableness, which has been shown to correlate with workplace deviance (Hastings & O'Neill, 2009) and which is part of HEXACO Agreeableness.

Some may see in the above results confirmation of the position, advocated by some B5 researchers (DeYoung, 2015; Viswesvaran & Ones, 2016), that Honesty-Humility is not much more than a facet of Agreeableness. However, such a position negates the findings of this meta-analysis that HEXACO Honesty-Humility already explains almost twice the amount of variance explained by B5 Agreeableness in workplace deviance (i.e., 18.9% versus 9.5%). Furthermore, such a position also negates findings in this and other studies that a) HEXACO Honesty-Humility and Agreeableness are only moderately related (i.e.,  $r = .29$  in this study and a correlation of  $.28$  between Honesty-Humility and B5 Agreeableness in Ashton et al. (2014)) and that b) HEXACO Honesty-Humility and Agreeableness have significant different predictive validities for a great number of important other variables, such as—among others—values and political orientations (Lee et al., 2009; Lee, Ashton, Ogunfowora, Bourdage, & Shin, 2010), the Dark Triad (Lee et al., 2013; Lee & Ashton, 2014), and several economic (public good and social dilemma) games (Hilbig et al., 2016, 2013; Zhao & Smillie, 2015). This, together with the finding that the most recent large-scale cross-cultural lexical studies offer support for separate Agreeableness and Honesty-Humility dimensions (Ashton et al., 2004; De Raad et al., 2014; Saucier, 2009), seems to indicate that the B5 model omits a highly important and consequential variable.

The relations between workplace deviance and B5 Neuroticism and HEXACO Emotionality differed significantly and in direction, offering support for the conceptual distinction between these two domain scales. B5 Neuroticism includes content associated with anger, which has been found to be positively related to workplace deviance (Hastings & O'Neill, 2009), whereas HEXACO Emotionality includes content associated with anxiety and sentimentality, which has been found to be somewhat negatively related to (workplace) deviance (e.g., Van Gelder & De Vries, 2012). Overall, these findings provide criterion-related support for the conceptual similarities *and* differences between the B5 and the HEXACO. While the current results suggest that the B5 personality model is useful in the prediction of workplace deviance, the results also suggest that practitioners and researchers might like to use

the HEXACO instead of the B5 personality model because of the inclusion of the Honesty-Humility domain scale and because of the higher level of explained variance in workplace deviance by the HEXACO model when compared to the B5 model. In particular, practitioners and researchers are advised to include the personality domain scales of Honesty-Humility, Conscientiousness, Agreeableness, and Emotionality when their goal is to predict behaviors associated with workplace deviance. These findings also align with previous findings suggesting that the HEXACO personality model, compared to the B5 personality model, better predicts various criteria in- and outside the workplace, such as cooperation (Thielmann & Hilbig, 2014), unethical leadership (De Vries, 2012), and delinquent and criminal behaviors (De Vries & Van Gelder, 2013, 2015).

### **Comparison with Previous Meta-Analytic Findings**

Contrary to previous meta-analytic results (Berry et al., 2007), none of the personality domain scales correlated differently with the two facets of workplace deviance, ID and OD. This contradicts Berry and colleagues' (2007) finding that Agreeableness correlated more strongly with ID and Conscientiousness more strongly with OD. It seems that personality domain scales predict overall levels of workplace deviance, but do not differentially predict specific facets of deviant behaviors. This finding might reflect the fact that certain personality traits incline individuals to be prone to exhibit deviant behavior independently of who or what the target is. At least when using personality domain scales as predictor variables, differentiating between the two facets of workplace deviance seems redundant. In combination with at least one influential study failing to replicate the two-factor structure of workplace deviance (Lee & Allen, 2002), these results may further question the viability of such a two-factor structure.

Other findings in the current meta-analysis also differ notably from previous meta-analyses (see Table 11; Berry et al., 2012, 2007; Salgado, 2002). Most importantly, the overall weighted correlation coefficients found in the current meta-analysis were notably different for B5 Conscientiousness, Agreeableness, and Neuroticism from previous meta-analyses (Berry et al., 2012; Salgado, 2002). Our results might differ from Salgado's (2002) results because of the narrower conceptualization of workplace deviance in his meta-analysis, which might have led to generally smaller correlations. The overall weighted effect sizes did not differ substantially for B5 Openness to Experience and Extraversion. Another notable difference is that, except for B5 Conscientiousness, self- and other-reports of workplace deviance do not correlate differently with personality. Yet, Berry et al. (2012) report quite substantial differences between self- and other-reports ( $r = -.07$  to  $.18$ ). Given that the current meta-analysis is based on a much

larger sample than previous ones, it seems that more confidence can be placed in these results. On the other hand, some might argue that our findings reflect an increased interest in personality as a research field, making significant findings more likely to be published than non-significant ones (Borenstein et al., 2009). However, the publication bias analyses performed in this meta-analysis did not indicate major problems.

### **Methodological Implications**

The current findings carry important implications for the future study of personality and workplace deviance. The results remained robust independently of the source of the workplace deviance rating (except for B5 Conscientiousness, which showed a stronger correlation with self-ratings compared to other-ratings of workplace deviance). This may indicate that personality is equally valid in predicting self- and other-reported workplace deviance, and may demonstrate that the personality-workplace deviance relations do not suffer from common-method bias. However, the questionnaire used to assess workplace deviance significantly moderated the relations between workplace deviance and the personality domain scales of B5 Conscientiousness, B5 Agreeableness, HEXACO Extraversion, HEXACO Conscientiousness, and HEXACO Openness to Experience. For all of these personality domain scales, the Bennett and Robinson (2000) measure showed a more negative correlation with workplace deviance than other measures. While this categorization of workplace deviance questionnaires simplifies the underlying differences between questionnaires, these findings might indicate that the Bennett and Robinson (2000) questionnaire inflates the relations between personality and workplace deviance or that it more optimally captures those behaviors (i.e., workplace deviance) that are associated with personality. Future research could investigate this in more detail, but it is important that researchers are aware of these differences between workplace deviance measures.

The number of items used to assess a personality domain scale also did not moderate the relations between personality and workplace deviance. This finding does not align well with findings that shorter scales with lower reliabilities demonstrate lower validities (e.g., Gosling, Rentfrow, & Swann Jr, 2003). Possible explanations for the lack of a moderating effect could be that studies with short scales might be especially prone to publication bias or that short scales contain items that more optimally capture the variance associated with workplace deviance. Age only influenced the relations between a few personality domain scales and workplace deviance (i.e., B5 Neuroticism, HEXACO Emotionality, and HEXACO Honesty-Humility). A similar picture emerged for the average percentage of women in a respective study, which moderated the relations between workplace deviance and a few personality domain scales (i.e.,

HEXACO Openness to Experience, HEXACO Extraversion, and B5 Agreeableness). This might reflect gender differences in personality and in levels of workplace deviance (De Vries, Ashton, & Lee, 2009; Ng et al., 2016). However, no clear picture across personality domain scales emerged for these two continuous moderators, making it difficult to interpret these findings. Nonetheless, researchers and practitioners should be aware of these findings when examining these relations in age and gender diverse samples. Researchers might want to control for age and gender differences between participants when examining the relations between those personality domain scales and workplace deviance for which the relations were moderated by age and the percentage of women.

### **Practical Implications**

Even though task performance is usually the main criterion in employee selection contexts, research indicates that workplace deviance is one of the main detrimental behaviors for organizational success (Dunlop & Lee, 2004), making the prediction of this additional criterion more and more important. The prediction of deviant behavior at work even enjoys one advantage over the prediction of task performance because workplace deviance is not limited to a specific job, but, just like OCB, cuts across tasks, jobs, and work environments (Podsakoff, Whiting, Podsakoff, & Blume, 2009). The current meta-analysis clearly outlines that organizations are at an advantage if they can use personality questionnaires to select employees who lack a proneness for deviant behavior (Podsakoff et al., 2009). Whereas previous research has positioned Conscientiousness and Agreeableness as the main predictors of task performance (Barrick, Mount, & Judge, 2001; Ilies, Fulmer, Spitzmuller, & Johnson, 2009), the current meta-analysis suggests that these two personality domain scales in combination with Honesty-Humility and Emotionality (Neuroticism in the B5, but note the opposite relation) are most important in the prediction and prevention of workplace deviance. When practitioners can choose between personality questionnaires, they might like to opt for the HEXACO personality inventory instead of one of the B5 questionnaires, as the HEXACO personality inventory is able to explain more variance in workplace deviance.

Practitioners can also use the current findings by applying trait activation theory (TAT: Tett & Burnett, 2003). According to TAT, an individual's traits, such as personality, are either activated or inhibited in response to trait-relevant cues in the situation (Tett & Burnett, 2003). An ideal work situation is one that offers cues for trait expression and one where trait-expressive behavior is positively valued by others. Furthermore, evidence indicates that individuals actively seek situations that provide opportunities for expressing those traits that they are rewarded for (e.g., De Vries, Tybur, Pollet, & Van Vugt, 2016; Tett & Christiansen, 2007), and

the facilitating effect of negative experiences at work on workplace deviance can be increased or decreased by certain personality traits (Colbert et al., 2004). To decrease levels of workplace deviance, organizations could think of ways to trigger or reward the expression of those personality traits that decrease the occurrence of workplace deviance (i.e., Honesty-Humility, Conscientiousness, Agreeableness, Emotionality). In addition, when predicting job performance, the validity of personality seems to be stronger in less structured jobs, and this effect might be enhanced in certain job contexts for certain personality domain scales (Judge & Zapata, 2015). For example, employees low on Honesty-Humility are more likely to take advantage of a situation to enrich themselves at the cost of others when punishment is unlikely (Hilbig, Zettler, & Heydasch, 2012). This highlights the importance of considering personality domain scales in job selection contexts especially for unstructured jobs in which applicants have a lot of freedom to make their own decisions.

### **Limitations and Future Research**

The current meta-analysis has some limitations. First, the moderator analyses for the HEXACO should be interpreted with caution because these analyses are only based on a small number of effect sizes. It should also be stressed that the interpretation of the personality questionnaire (B5 versus FFM) needs to be interpreted with caution: for a few studies, it was not entirely clear if the authors used the B5 or the FFM questionnaires. Second, the data analyzed here is based on cross-sectional designs, which does not allow causality inferences. However, personality is assumed to be relatively stable (Larsen & Buss, 2005), which makes it unlikely that workplace deviance determines an individual's personality. One way to overcome this issue would be to investigate the effects of personality on workplace deviance with longitudinal designs. Furthermore, while this study shows that personality is a strong predictor of workplace deviance, using broad personality domain scales instead of narrow facets to investigate the relations between personality and workplace deviance may suppress the actual effects of those facets. It has been previously argued that broad personality measures (domain scales) are less strongly correlated with workplace deviance than narrow measures (facets) (Ashton, 1998; Hastings & O'Neill, 2009). Combining narrow personality traits into overall personality domain scales may obscure true effects, because some facets of one domain scales might correlate positively with workplace deviance, whereas other facets of the same domain scales might correlate less strongly or even negatively with it. For example, Hastings and O'Neill (2009) found that the narrow Anger facet in Neuroticism correlated positively with workplace deviance ( $r = .28$ ), whereas the Anxiety facet correlated negatively with it ( $r = -.07$ ).<sup>9</sup> These facets subsequently suppress each other. It can also be the case that different facets

correlate differently with ID and OD. Unfortunately, not enough data was available to meta-analytically investigate this. Future research should therefore investigate the effects of personality facets on workplace deviance in more detail.

### **Conclusion**

The current meta-analysis provides the first comprehensive overview of the relations between personality and workplace deviance and demonstrates that the HEXACO explains more variance in workplace deviance than the B5. The Honesty-Humility domain scale of the HEXACO shows the strongest (negative) relation with workplace deviance out of all HEXACO and B5 personality domain scales. Apart from Honesty-Humility, Conscientiousness, Agreeableness, and Emotionality (Neuroticism) are also important predictors of workplace deviance. The findings in the current meta-analysis differ from those in previous meta-analyses (Berry et al., 2012, 2007; Salgado, 2002). That is, the magnitude of effect sizes for Conscientiousness, Agreeableness, and Neuroticism were notably different and none of the personality domain scales correlated differently with ID or OD. Overall, the current meta-analysis provides further evidence for the importance of personality in the prediction of workplace deviance.

### Footnotes

<sup>1</sup> All correlations reported here and further below from previous meta-analyses (Berry et al., 2007, 2012; Salgado, 2002) are observed correlations.

<sup>2</sup> Although Emotional Stability is the official term used in the Big Five personality model, we will refer to it as Neuroticism, which is the opposite pole of the Emotional Stability domain scale, to better align it directionally with HEXACO Emotionality.

<sup>3</sup> The signs for the results reported in Salgado (2002) are reversed here because this meta-analysis measured the relations between personality and a *lack of* deviant behavior. Salgado (2002) reports correlations that are corrected for range restriction.

<sup>4</sup> These correlations refer to those with self-reported workplace deviance and are based on data from Berry et al. (2007), but are reported in Berry et al. (2012). It is not clear from Table 5 in Berry et al. (2012) whether these correlations are corrected for unreliability or not.

<sup>5</sup> The correlations reported here and further below from Berry et al. (2012) are mean sample-size weighted correlations. These authors also report correlations corrected for unreliability in both the predictor and criterion variables, but given that we do not correct for unreliability, we reported the uncorrected correlations here. Berry et al. (2012) did not test if the effect sizes for the personality domain scales differ in their relationship with ID and OD. We tested the difference between the two correlation coefficients they report for each personality domain and found a significant difference for Conscientiousness (ID:  $r = -.19$ , OD:  $r = -.34$ ;  $z = -6.44$ ,  $p < .001$ ), Agreeableness (ID:  $r = -.36$ , OD:  $r = -.25$ ;  $z = 4.80$ ,  $p < .001$ ), and Extraversion (ID:  $r = .02$ , OD:  $r = -.07$ ;  $z = 2.89$ ,  $p < .01$ ), but not for Neuroticism (ID:  $r = .20$ , OD:  $r = .19$ ;  $z = 0.37$ ,  $p = .711$ ) and Openness (ID:  $r = -.07$ , OD:  $r = -.03$ ;  $z = 1.27$ ,  $p = .204$ ) (all  $p$ -values are two-tailed).

<sup>6</sup> The personality questionnaire used for the HEXACO is always based on the same original questionnaire (Lee & Ashton, 2004), whereas most personality questionnaires for the B5 were either based on Goldberg's (1990) Big Five Model or on McCrae and Costa's (1992) Five-Factor Model. Hence, we could only examine the moderating effect of the personality questionnaire for the B5 personality domain scales. The same applies to the source of the workplace deviance rating, because no study that used the HEXACO included other-reports of workplace deviance.

<sup>7</sup> As mentioned in the Method, we included the self-rating in the overall analysis if a study reported correlations between personality and both self- and other-ratings of workplace deviance to guarantee the independence of effect sizes. However, the results do not substantially change if the other-rating of workplace deviance is included in the overall analysis instead. The

results with other-ratings of workplace deviance included are as follows: B5 Openness:  $r = -.056$ , 95% CI (-.104, -.007),  $p < .05$ ; B5 Conscientiousness:  $r = -.271$ , 95% CI (-.308, -.234),  $p < .001$ ; B5 Extraversion:  $r = -.033$ , 95% CI (-.091, .025),  $p = .263$ ; B5 Agreeableness:  $r = -.264$ , 95% CI (-.300, -.227),  $p < .001$ ; B5 Neuroticism:  $r = .134$ , 95% CI (.095, .173),  $p < .001$ . For the HEXACO, no study included both self- and other-ratings of workplace deviance.

<sup>8</sup> When excluding two studies from this analysis that measured workplace deviance with other-reports (Kluemper, Mclarty, & Bing, 2014 Study 1; Richards & Schat, 2011), the explained variance in workplace deviance using the B5 domain scales slightly increases,  $k = 10$ ,  $N = 4591$ ,  $R^2 = .191$ , 95% CI for  $R^2$  (.140; .253).

<sup>9</sup> This provides further support for the fact that these facets belong to different domain scales, as is the case in the HEXACO: *Anger* is part of HEXACO Agreeableness, whereas *Anxiety* is part of HEXACO Emotionality.