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HEXACO Personality and Organizational Citizenship Behavior: A Domain- and Facet-Level Meta-Analysis

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ABSTRACT

Several meta-analyses have demonstrated that personality is an important predictor of organizational citizenship behavior (OCB). However, these meta-analyses have almost exclusively focused on Big Five personality domains, whereas recent evidence suggests that personality might be captured more accurately by the six HEXACO domains. Here, we provide a comprehensive meta-analysis of all HEXACO domain- and facet-level relations with OCB (k = 21). Extraversion (ρ = .347) exhibits the strongest relation with OCB, followed by Conscientiousness (ρ = .319), Agreeableness (ρ = .217), Honesty-Humility (ρ = .208), and Openness to Experience (ρ = .195). Emotionality does not correlate with OCB (ρ = −.002). The six HEXACO domains explain 13.7% of the variance in OCB, whereas the amount of explained variance increases by 3.4% when using the 24 HEXACO facets (R^2 = .171). This discrepancy can be explained by masking effects among the facets of Honesty-Humility and Conscientiousness, and by a cancellation effect among the facets of Emotionality. Theoretical, methodological, and practical implications as well as limitations and ideas for future research are discussed.

Organizational citizenship behavior (OCB) is associated with many desirable outcomes for both employees and organizations. For example, OCB is related to increased task performance and decreased turnover intentions (N. P. Podsakoff, Whiting, Podsakoff, & Blume, 2009). As such, the study and prediction of OCB has sparked the interest of researchers and practitioners in recent decades (P. M. Podsakoff, MacKenzie, Paine, & Bachrach, 2000). Compared to task performance, OCB is considered more discretionary and spontaneous. Hence, OCB is more likely to be predicted by personality traits than by the typical individual differences (e.g., cognitive ability and job knowledge) associated with task performance (Chiaburu, Oh, Berry, Li, & Gardner, 2011). Indeed, several meta-analyses have provided evidence for the relations of the Big Five (or Five-Factor Model [FFM]) personality domains with OCB (Borman, Penner, Allen, & Motowidlo, 2001; Chiaburu et al., 2011; Hoffman, Blair, Meriac, & Woehr, 2007; Ilies, Fulmer, Spitzmuller, & Johnson, 2009; LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). However, although considerable evidence has accumulated in favor of the HEXACO model of personality (e.g., Ashton & Lee, 2007), only one previous meta-analysis, based on a small number of studies (k = 7–9), examined the relations of the six HEXACO personality domains with OCB as part of a large-scale meta-analysis about the nomological net of the HEXACO model (Zettler, Thielmann, Hilbig, & Moshagen, 2020).

In addition, there is a debate in the literature on whether domains or facets lead to the most optimal prediction of organizational criteria (i.e., the so-called bandwidth-fidelity dilemma; Cronbach & Gleser, 1957; Judge, Rodell, Klinger, Simon, & Crawford, 2013). More specifically, some have argued that broad personality traits predict broad criteria, such as OCB, most optimally (Ones & Viswesvaran,

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1996), while others suggest that a more fine-grained investigation of personality can increase its criterion-related validity, even for broad criteria (Judge et al., 2013; Tett, Steele, & Beauregard, 2003). In support of the latter, various studies indicate that facets outperform domains in the prediction of organizational criteria (Ashton, 1998; Paunonen & Nicol, 2001). However, there is very little research systematically comparing the criterion-related validity of domains with that of facets for OCB, and those studies that did, focused mostly on the Big Five personality domains (Judge et al., 2013). By examining all HEXACO domain- and facet-level relations with OCB, we can empirically test if important criterion-related variance is obscured when aggregating HEXACO facets to the higher-order domains. Hence, by doing so, we contribute important insights to the debate about the importance of lower-order facets in predicting organizational criteria.

In the current meta-analysis, we therefore aim to provide a meta-analytic overview of all HEXACO domain- and facet-level relations with OCB. We also test the effects of several moderators (i.e., the type of OCB, self- versus other-ratings of OCB, and the length of the HEXACO measure) that have not been included in the previous meta-analysis that provided effect sizes for the HEXACO-OCB relations (Zettler et al., 2020), but that will provide important methodological implications. These findings can also provide important insights for practitioners, who have shown increased interest in the HEXACO model in recent years and who generally strive to maximize criterion-related validity while minimizing testing times, which can be achieved if findings indicate that a few facets achieve similar levels of criterion-related validity for OCB as all HEXACO domains.

Organizational citizenship behavior

Organ (1988) originally defined OCB as "individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization" (p. 4). In other words, OCBs are often not mandated by role descriptions but contribute to organizational effectiveness (Organ, 1997). However, more recent research suggests that employees may also engage in OCBs because they feel obligated to do so (Bolino, Klotz, Turnley, & Harvey, 2013; Organ, Podsakoff, & MacKenzie, 2006). Many different taxonomies of OCB exist (Morrison, 1994; Van Scotter & Motowidlo, 1996), but two forms are most commonly distinguished: OCB targeted at the organization (OCB-O) and OCB targeted at other individuals (OCB-I) (Williams & Anderson, 1991). OCB-O consists of behaviors directly aimed at helping the organization, such as participating in non-mandatory organizational activities and staying informed about recent developments within the organization. OCB-I consists of behaviors that are beneficial to other employees in the organization, such as explaining a complicated task to a coworker or helping coworkers reduce their workload. Other forms of OCB, such as proactive OCB, change-oriented OCB, or OCB for impression management purposes as well as other constructs that resemble OCB (e.g., contextual performance: Borman & Motowidlo, 1997; organizational spontaneity: George & Brief, 1992; extra-role behavior: Van Dyne & LePine, 1998; or prosocial organizational behavior: Brief & Motowidlo, 1986) also exist but are less commonly studied, especially in connection with the HEXACO personality model.

Correlates of OCB

Correlates of OCB include situational variables, such as organizational justice or leader support (LePine et al., 2002), job-related attitudes, such as job satisfaction or organizational commitment (Dalal, 2005; Hoffman et al., 2007), or individual differences, such as gender (Ng, Lam, & Feldman, 2016) or cognitive ability (Coté & Miners, 2006). Interactions of these different classes of correlates are also often used to predict OCB (e.g., Blakely, Andrews, & Moorman, 2005; Newman, Schwarz, Cooper, & Sendjaya, 2017). However, the most commonly studied predictor of OCB is personality, and several meta-analyses have already examined the relations between the broad Big Five personality domains and OCB (Chiaburu et al., 2011; Hoffman et al., 2007; Ilies et al., 2009; LePine et al., 2002; Organ &

Ryan, 1995). Chiaburu et al. (2011) provided the most comprehensive overview of the relations between the Big Five domains and OCB to date. They found that all Big Five domains (i.e., Openness, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability) were positively related to OCB, but that only the relations of Conscientiousness, Agreebleness, and Openness with OCB exhibited validity generalization (i.e., their credibility intervals excluded zero). In addition, all effect sizes were relatively small in magnitude (ranging from ρ = .09 for Extraversion to ρ = .18 for Conscientiousness). Chiaburu et al. (2011) therefore suggested that "it may be advantageous to think beyond the FFM framework (e.g., HEXACO; see Oswald & Hough, 2010)" (p. 1152) when studying the relations between personality traits and OCB. In addition, the authors suggested that the moderate magnitude of the meta-analytic correlations could be explained by cancellation and masking effects among facets within one domain. For example, they argue that the "weak relationship between Extraversion and citizenship may be explained by studies finding suppression at the facet level" (p. 1151). In the current meta-analysis, we aim to test both of these suggestions by examining the relations of all HEXACO domains and facets with OCB and by examining the occurrence of cancellation and/or masking effects among the facets within each of the six domains.

The HEXACO personality framework and OCB

Personality is most commonly described in terms of the Big Five (or FFM) domains: Openness, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability/Neuroticism (Goldberg, 1990; McCrae & Costa, 1992). However, re-analyses of lexical data demonstrate that human personality might be more optimally described using six domains (Ashton et al., 2004; Saucier, 2009). The most commonly studied six-dimensional personality framework is the HEXACO model (Ashton & Lee, 2007), which consists of six domains that form the HEXACO acronym: **H**onesty-Humility, **E**motionality, e**X**traversion, **A**greeableness, **C**onscientiousness, and **O**penness to Experience. The HEXACO is, just like many other personality frameworks, hierarchically organized: Each domain consists of four facets (see supplementary materials for a description of all facets). Altruism, which loads on the domains Honesty-Humility, Emotionality, and Agreeableness, is included as a 25th interstitial facet, resulting in a grand total of six domains and 25 facets.[1]

The Extraversion, Conscientiousness, and Openness to Experience domains are conceptually very similar to their Big Five counterparts, and we therefore expect similar relations for these HEXACO domains with OCB compared to their Big Five counterparts. Extraverted individuals are social and energetic, which predisposes them to help others and to attend social gatherings at work (Gonzalez-Mulé, DeGeest, McCormick, Seong, & Brown, 2014). Conscientious individuals are organized, diligent, and hard-working, and engaging in OCB contributes to their sense of accomplishment at work (Raja, Johns, & Ntalianis, 2004). Openness to Experience describes an individual's tendency to be creative and to accept the unusual. Because of their interest and engagement with knowledge and new ideas, such individuals may be more likely to share knowledge with others (Cabrera, Collins, & Salgado, 2006), which should generally increase their likelihood to engage in OCB. Hence, HEXACO Extraversion, Conscientiousness, and Openness to Experience are expected to exhibit significant positive correlations with OCB.

The largest difference between the Big Five and the HEXACO is that the HEXACO adds a sixth domain called Honesty-Humility, which describes the tendency to be genuine and fair in interactions with others. Individuals scoring high on Honesty-Humility generally behave in prosocial ways (Thielmann, Spadaro, & Balliet, 2020), are especially sensitive to ethical rules at work, and can be expected to voice their opinion when moral or ethical issues occur at work – all behaviors that overlap substantially with OCB. In addition, Honesty-Humility is the strongest predictor of counterproductive

[1]A 26th interstitial Proactivity facet, which loads on Extraversion, Conscientiousness, and Openness to Experience, has been added in the HEXACO framework by De Vries, Wawoe, and Holtrop (2016), but because there is no research relating this facet to OCB, it is not investigated in the current meta-analysis.

work behavior (CWB) out of all Big Five and HEXACO personality domains (Pletzer, Bentvelzen, Oostrom, & De Vries, 2019), and CWB correlates negatively with OCB (Dalal, 2005). All of these reasons suggest that Honesty-Humility exhibits a positive relation with OCB.

Another difference between the Big Five and the HEXACO model is that HEXACO Emotionality and Agreeableness are rotated variants of Big Five Neuroticism and Agreeableness. This rotation is accompanied by a shift in facets. For example, HEXACO Agreeableness contains a (reversed) anger facet (i.e., Patience), which can be expected to relate positively to OCB and which is part of Big Five Neuroticism. All other HEXACO Agreeableness facets (i.e., Forgivingness, Gentleness, and Flexibility) have been found to be positively related to OCB as well (Anglim, Lievens, Everton, Grant, & Marty, 2018), suggesting that HEXACO Agreeableness exhibits a positive relation with OCB.

Another facet-level difference between the Big Five and the HEXACO is that HEXACO Emotionality contains the Sentimentality facet which is part of Big Five Agreeableness. We expect this facet to relate positively to OCB because it captures one's tendency to feel connected with others. However, HEXACO Emotionality also captures variance associated with being anxious and fearful, which may make individuals more cautious in situations in which OCBs are asked for. It is therefore possible that these Emotionality facets mask or cancel each other's relation with OCB, rendering a meta-analytic investigation of this relation even more important.

In recent years, a few primary studies have examined the relations between HEXACO domains and OCB, generally supporting our expectations. Across two studies, Anglim et al. (2018) found that Honesty-Humility, Extraversion, Agreeableness, and Conscientiousness correlate positively with OCB. The evidence for the relations of Emotionality and Openness to Experience with OCB was mixed (once non-significant, once negative). Bourdage, Goupal, Neilson, Lukacik, and Lee (2018) found consistent evidence for a positive relation of Honesty-Humility, Extraversion, and Openness to Experience with OCB in two independent samples. The relations of Agreeableness and Conscientiousness with OCB were positive in one sample and non-significant in the other, whereas Emotionality did not correlate with OCB in both samples. Szabo, Czibor, Restás, and Bereczkei (2018) found positive relations for all HEXACO domains with OCB except for Openness to Experience. Recently, Lee, Berry, and Gonzalez-Mulé (2019) conducted a meta-analysis in which they also examined the relation between Honesty-Humility, but not the other HEXACO domains, and OCB. They found a small but significant correlation ($\rho = .13$, $k = 16$), and demonstrated that Honesty-Humility does not have incremental validity over and above the Big Five, general mental ability, and integrity tests when predicting OCB. Zettler et al. (2020) recently published a large-scale meta-analysis of the nomological net of the HEXACO domains in which they also examined the relations of all HEXACO domains with OCB. They found that Extraversion exhibits the strongest correlation with OCB ($\rho = .20$), followed by Conscientiousness ($\rho = .18$), Honesty-Humility ($\rho = .15$), Openness to Experience ($\rho = .15$), and Agreeableness ($\rho = .11$). Emotionality did not correlate significantly with OCB. However, these effect size estimates were based on a relatively small number of studies ($k = 7–9$). We therefore aim to provide more precise effect size estimates for all HEXACO domains based on a larger number of included correlations.

Although these broad HEXACO domains are among the best predictors of OCB because they pair parsimony with relatively high criterion-related validity, the bandwidth-fidelity dilemma (Cronbach & Gleser, 1957; Judge et al., 2013) suggests that narrow personality facets predict organizational behaviors better than broad personality domains because differential facet-level relations can be obscured when facets are aggregated to the broader domain (Tett et al., 2003). In addition, the construct correspondence account (Fishbein & Ajzen, 1974) proposes that the criterion-related validity of certain predictors can be increased when they are optimally matched with criteria (Hough & Furnham, 2003), which is more likely to occur on the facet level. In line with these theoretical accounts, narrow facets indeed explain more variance in various organizational outcomes than broad domains (Ashton, 1998; Ashton, Lee, & De Vries, 2014; Paunonen & Ashton, 2001; Pletzer, Oostrom, Bentvelzen, & De Vries, 2020). However, hardly any studies have examined the relations of personality facets with OCB. One notable exception is a meta-analysis by Judge et al. (2013), who

examined FFM domain and facet-level relations with contextual performance. They found that the facets of Agreeableness, Extraversion, and Neuroticism explained substantially higher amounts of variance in contextual performance than their respective domain, whereas the shared variance among the facets of Conscientiousness and Openness to Experience explained most of the variance in contextual performance for these domains. In line with these findings, Moon, Hollenbeck, Marinova, and Humphrey (2008) demonstrate that the facets of Big Five Extraversion cancel out each other's criterion-related validity when examining the relation of the Extraversion domain with OCB. Furthermore, Debusscher, Hofmans, and De Fruyt (2017) show that the Big Five Conscientiousness facets do not have incremental validity over and above their domain when predicting OCB. However, these authors measured state – and not trait – Conscientiousness. To the best of our knowledge, Anglim et al. (2018) conducted the only study that compared the criterion-related validity of the HEXACO facets with that of their domains for OCB, and they found that the HEXACO facets have higher criterion-related validity for OCB than the HEXACO domains. In their non-applicant sample, lower Fearfulness, and higher Diligence and Altruism contributed to the increased explained variance in OCB when using facets compared to domains. However, these authors also state that "questions remain about the robustness of facet-level equations" in their sample and argue that "even larger validation samples are likely to be required in order to obtain a regression equation with facets that yield superior cross-validated prediction compared to a model with just broad traits" (p. 18).

Current study

In the current meta-analysis, we aim to provide such a larger validation sample by conducting a comprehensive overview of all HEXACO domain- and facet-level relations with OCB. In addition, we test if masking and cancellation effects among the facets of the six domains obscure domain-level relations with OCB. A masking effect exists if the domain (d) correlates significantly with the criterion (C), and if at least one facet (f1) has a stronger and at least one facet (f2) has a weaker correlation with the criterion than the domain. A weak masking exists if these conditions are met and a) the two facet-level correlations differ significantly from each other (i.e., $r_{f1\text{-}C} > r_{f2\text{-}C}$), and b) one facet-level correlation differs significantly from the domain-level correlation (i.e., $r_{f1\text{-}C} > r_{d\text{-}C}$ or $r_{f2\text{-}C} < r_{d\text{-}C}$). A strong masking effect exists if all conditions of a weak masking effect are met, but both facet-level correlations differ significantly from the domain-level correlation (i.e., $r_{f1\text{-}C} > r_{f2\text{-}C}$, $r_{f1\text{-}C} > r_{d\text{-}C}$ and $r_{f2\text{-}C} < r_{d\text{-}C}$). Similarly, we distinguish between weak and strong cancellation effects. Cancellation effects are similar to the masking effects described above, except that the domain does not significantly correlate with the criterion. A weak cancellation effect exists if the domain does not correlate significantly with the outcome, two facet-level correlations with the criterion differ significantly from each other (i.e., $r_{f1\text{-}C} > r_{f2\text{-}C}$), and at least one facet-level correlation differs significantly from the domain-level correlation (i.e., $r_{f1\text{-}C} > r_{d\text{-}C}$ or $r_{f2\text{-}C} < r_{d\text{-}C}$). A strong cancellation effect occurs if all of the above is true and both facet-level correlations differ significantly from the domain-level correlation with the criterion (i.e., $r_{f1\text{-}C} > r_{d\text{-}C}$ *and* $r_{f2\text{-}C} < r_{d\text{-}C}$) (see also De Vries, Pronk, Olthof, & Goossens, 2020; Pletzer et al., 2020).[2]

Pletzer et al. (2020) examined such cancellation and masking effects among the HEXACO facets for their relations with workplace deviance and found evidence for a strong masking effect among the facets of Honesty-Humility and for a weak cancellation effect among the facets of Openness to Experience. Except for the possible differential facet-level relations of Emotionality with OCB outlined above, we do not have strong a priori expectations about cancellation or masking effects when examining the relations of the HEXACO facets with OCB. We will therefore explore cancellation and masking effects as one possible explanation for the moderately-sized or nonsignificant correlations in primary studies.

[2]Note that Pletzer et al. (2020) did not distinguish between weak and strong cancellation or masking effects. De Vries et al. (2020) did make this distinction and therefore used exactly the same method as employed in the current meta-analysis.

Contributions of the current study

The current meta-analysis contributes to a further understanding of the relations between personality traits and OCB in four ways. First, whereas previous meta-analyses focused on domain-level relations between the Big Five domains and OCB (Chiaburu et al., 2011; Hoffman et al., 2007; Ilies et al., 2009; LePine et al., 2002; Organ & Ryan, 1995) or between the HEXACO domains and OCB (Zettler et al., 2020), we will provide a comprehensive overview of *all* HEXACO domain- and facet-level relations with OCB. Second, we will compare HEXACO domain- and facet-level relations with OCB, and examine cancellation and masking effects among the constituent facets within each domain. This will provide clarity about which HEXACO domains and facets are related to OCB, and test one possible reason why the criterion-related validity of broad domains for OCB was relatively weak in previous meta-analyses (e.g., Chiaburu et al., 2011). Third, by estimating the amount of explained variance in OCB using all domains and facets, our meta-analysis contributes to the discussion about the relative merits of using facets rather than domains in employee selection contexts (Anglim et al., 2018; Christiansen & Robie, 2011; Tett et al., 2003). Fourth, we will explore several methodological moderators of the HEXACO-OCB relations (i.e., OCB-I versus OCB-O, self- versus other-ratings of OCB, 60- versus 100- versus 200-item HEXACO measure). Results of these moderator analyses will have important methodological implications for future studies of the relations of HEXACO domains and facets with OCB.

Method

Literature search and inclusion criteria

We tried to locate relevant studies in multiple ways. First, we conducted a systematic literature search on Web of Science on November 12, 2019, using the following keywords: *HEXACO, Honesty-Humility*, and *Organi*ational citizenship behavi*, OCB*, or *contextual performance*. This search yielded 22 articles, which were all examined in full. Second, we examined the references of several meta-analyses about the HEXACO (Y. Lee et al., 2019; Pletzer et al., 2019, 2020) for other relevant studies. Third, we conducted a manual search on Google Scholar using the same keywords as mentioned above. Last, we contacted authors of relevant studies for other unpublished studies. All steps of the literature search were conducted by the first author.

The following criteria had to be met for a study to be included. First, personality had to be assessed using the HEXACO personality inventory (Ashton & Lee, 2007). Second, OCB had to be measured. Third, the correlation coefficient *r* between at least one HEXACO domain or facet and OCB had to be reported, along with the respective sample size *N*, or statistics that allow for the computation of *r*, such as standardized regression coefficients (*ß*). If a study did not report the necessary statistics, we requested zero-order correlations from the authors.

In total, 21 independent studies from 18 articles met our inclusion criteria (see Table 1 for an overview of all included studies). Ten articles were identified through the systematic literature search, four by contacting authors, three through the manual search on Google Scholar, and one through the reference lists of relevant meta-analyses. We contacted the authors of all included articles to acquire facet-level correlations with OCB because these were rarely reported. Of the 21 included studies, fifteen were published in peer-reviewed journals and six were unpublished. The included articles were published (or conducted for unpublished studies) between 2012 and 2019 (median publication year = 2018).

Coding

All effect sizes were independently coded by the first author and by a graduate student who wrote his Master thesis about this topic, which resulted in 95% agreement. All disagreements were resolved by revisiting the article and discussing the respective coding. The first author coded all study characteristics. Twenty studies reported correlations for Honesty-Humility, nineteen for Conscientiousness,

Table 1. Overview of included studies in the meta-analysis.

#	Study	*N*	Included domains/ facets	Outcomes	Items	Rater	OCB Q	Age	% Women
1	Anglim et al. (2018) Applicant Sample	260	All domains & facets	OCB, OCB-I, OCB-O	200	Self	Lee and Allen (2002)	41.2	69.0
2	Anglim et al. (2018) Non-Applicant Sample	347	All domains & facets	OCB, OCB-I, OCB-O	200	Self	Lee and Allen (2002)	50.7	40.0
3	Blanco Villarreal (2019)	179	Conscientiousness	OCB	60	Self	Moorman and Blakely (1995)	39.0	45.2
4	Bourdage, Lee, Lee, and Shin (2012)	262	All domains & facets	OCB, OCB-I, OCB-O	100	Other	Lee and Allen (2002)	29.3	59.9
5	Bourdage et al. (2018) Employee Sample	206	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Lee and Allen (2002)	45.6	51.5
6	Bourdage et al. (2018) Student Sample	160	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Lee and Allen (2002)	20.6	80.0
7	Cohen et al. (2014)	1291	All domains & facets	OCB	60	Self	Fox, Spector, Goh, Bruursema, and Kessler (2012)	39.5	50.2
8	De Vries, De Vries, Born, and Van den Berg (2014)	238	All domains & facets	OCB	200	Self	Borman et al. (2001); Van Scotter and Motowidlo (1996)	32.9	47.9
9	Louw, Dunlop, Yeo, and Griffin (2016)	124	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Lee and Allen (2002)	30.4	52.6
10	Oh et al. (2014)	217	All domains	OCB	100	Other	Yoo and Kim (2004)	19.2	9.7
11	Oostrom, De Vries, and de Wit (2019)	103	All domains & facets	OCB, OCB-I, OCB-O	200	Other	Williams and Anderson (1991)	44.4	82.5
12	Pletzer, Oostrom, and Voelpel (2015)	519	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Podsakoff, MacKenzie, Moorman, and Fetter (1990)	36.4	51.6
13	Pletzer (2019)	173	All domains & facets	OCB, OCB-I, OCB-O	60	Self	Lee and Allen (2002)	32.8	53.2
14	Ripley (2019)	51	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Lee and Allen (2002)	-	11.8
15	Szabo et al. (2018)	256	All domains & facets	OCB, OCB-I, OCB-O	100	Self	Williams and Anderson (1991)	37.1	57.8
16	Szabo & Simon	349	All domains & facets	OCB, OCB-I, OCB-O	60	Self	Williams and Anderson (1991)	-	-
17	Thompson, Carlson, Hunter, and Whitten (2016)	328	Honesty-Humility	OCB	60	Self	Smith, Organ, and Near (1983)	39.0	48.0
18	Wendler et al. (2018)	201	Honesty-Humility	OCB	60	Other	Welbourne, Johnson, and Erez (1998)	38.0	53.0
19	Wingate, Lee, and Bourdage (2019) S1	191	All domains & facets	OCB	60	Self	Bourdage et al. (2012)	21.0	75.0
20	Wingate et al. (2019) S2	189	All domains & facets	OCB	60	Self	Bourdage et al. (2012)	36.0	51.9
21	Wilson (2016)	1231	All domains	OCB, OCB-I, OCB-O	200	Self	Lee and Allen (2002)	28.6	34.6

Note. *N* = sample size; HEXACO items = number of items used to assess one HEXACO personality domain; Rater = Source of the OCB rating; OCB Q = questionnaire used to assess OCB; Age = average age of the sample; % Women = percentage of women in the sample; Bifactor = primary dataset included in the bifactor model.

and eighteen for the remaining HEXACO domains (i.e., Emotionality, Extraversion, Agreeableness, and Openness to Experience). Seventeen correlations were coded for the Conscientiousness facets; sixteen correlations were coded for the facets of all other domains. For the interstitial Altruism facet, we were able to include nine correlations. All codings can be found here: OSF Project Page (https://osf.io/twc92/?view_only=8558372bbbab4187813281cd9eb35a3c)

Data analyses

We use two different meta-analytic approaches: For our main analyses, we use the *metafor* package in *R* (Viechtbauer, 2010), while we rely on Robust Variance Estimation (RVE) (Hedges, Tipton, & Johnson, 2010) to examine cancellation and masking effects.

Main meta-analyses

First, we conduct our main meta-analyses using the *R* package *metafor* (Viechtbauer, 2010) based on the Pearson correlation coefficient *r* in a random-effects model following the Hunter and Schmidt (2014) type meta-analytic approach. We report sample size-weighted correlations to account for differential sampling error in the included correlations. We then report correlations corrected for local unreliability (i.e., Cronbach's alpha) in both the predictor and the outcome. The reliability distributions for all study variables can be found in the supplementary materials. We report 95% confidence intervals and 80% credibility intervals for all effect sizes as well as the percentage of variance explained by artifacts (Hunter & Schmidt, 2014). A percentage higher than 75% indicates the presence of moderators. To assess heterogeneity in effect sizes, we also report *tau* and an I^2 index using the Hunter and Schmidt (2014) estimator. *Tau* is an estimator of the standard deviation of the true effect size used to calculate credibility intervals (Borenstein, Hedges, Higgins, & Rothstein, 2009). I^2 describes the proportion of observed variance due to real rather than chance differences between effect sizes: Values larger than 75% are considered high (Higgins, Thompson, Deeks, & Altman, 2003).

We use multiple tests for publication bias. First, we conduct a regression test (Egger, Davey Smith, Schneider, & Minder, 1997) and a rank correlation test (Begg & Mazumdar, 1994), which both examine the symmetry of a funnel plot in which effect sizes are plotted against study precision. Significant results indicate publication bias. Second, we conduct *p*-curve analyses (Simonsohn, Nelson, & Simmons, 2014; Simonsohn, Simmons, & Nelson, 2015), which plot the distribution of statistically significant *p*-values for the relation of one HEXACO domain or facet with OCB, using the online app located at www.*p*-curve.com. A right-skewed *p*-curve indicates evidential value; a left-skewed *p*-curve with more *p*-values near the alpha level (here: .05) indicates publication bias and possible *p*-hacking. We report the *p*-value for the binomial test and for the half *p*-curve test; significant values indicate evidential value and the absence of publication bias. Third, we compare the effect sizes of published and unpublished studies. In science, significant findings with large effect sizes are more likely to be published (Borenstein et al., 2009), and publication bias would therefore be present if published studies show significantly stronger effect sizes than unpublished studies.

We also explore the effects of several moderators on the overall effect size distribution using a mixed-effects model (i.e., OCB-I and OCB-O, self- versus other-ratings of OCB, and 60- versus 100- versus 200-item HEXACO measure). We report *Q*-values which test if the meta-analytic effect sizes differ depending on the level of the moderator. All results of the moderator results can be found in the supplementary materials.

To examine the amount of explained variance in OCB using the HEXACO domains or facets, a correlation matrix including all HEXACO domains and facets as well as OCB was constructed. For the relations of the HEXACO domains and facets with OCB, we relied on the effect size estimates from the current meta-analysis. The intercorrelations between all HEXACO domains and facets were taken from Pletzer et al. (2020). The constructed correlation matrices (corrected and uncorrected) can be found in the supplementary materials. We then conduct linear regression analyses using the lavaan

package in *R* (Rosseel, 2012) with the harmonic mean across all analyzed cells of the correlation matrix as the sample size (Viswesvaran & Ones, 1995), We supplement all linear regression analyses with relative weights analyses (RWA) to estimate the relative contribution of each domain or facet as predictors of OCB (Tonidandel & LeBreton, 2011).

Cancellation and masking effects

We also report results using the RVE approach (Hedges et al., 2010), which can account for dependent effect sizes, in the supplementary materials. In the current meta-analysis, effect sizes are dependent because the measurement of domains and facets overlaps and because facets are highly correlated. We also use RVE to test for cancellation and masking effects among the facets within each domain. For all analyses using RVE, we employed correlated effects RVE with random-effects weights and small sample adjustments (Tipton, 2015). These analyses were conducted using the *robumeta* package in *R* with rho = .80 (Tanner-Smith & Tipton, 2014). We used dummy coded variables to compare the corrected correlations between domains and facets or between the facets within each domain (e.g., 0 = Extraversion, 1 = Social Boldness or 0 = Social Boldness, 1 = Liveliness). In testing for cancellation and masking effects, we rely on the definitions provided in the introduction (see also De Vries et al., 2020; Pletzer et al., 2020).

Results

Meta-analytic results

The detailed meta-analytic results for the relations of all HEXACO domains and facets with OCB can be found in Table 2. Among the domains, Extraversion exhibited the strongest relation with OCB (ρ = .347), followed by Conscientiousness (ρ = .319), Agreeableness (ρ = .217), Honesty-Humility (ρ = .208),[3] and Openness to Experience (ρ = .195). Emotionality did not correlate with OCB (ρ = −.002). It is worth noting that the credibility interval for Conscientiousness included zero (−.018, .656), suggesting that Conscientiousness might not correlate or even correlate negatively with OCB under certain circumstances. The credibility intervals for Honesty-Humility, Extraversion, Agreeableness, and Openness to Experience excluded zero, suggesting validity generalization (Tett, Hundley, & Christiansen, 2017).

Among the Honesty-Humility facets, Fairness (ρ = .273) correlated most strongly with OCB, followed by Sincerity (ρ = .142) and Greed Avoidance (ρ = .110). Modesty (ρ = .076) did not correlate significantly with OCB. The fact that Fairness correlated more strongly and Sincerity and Greed Avoidance less strongly with OCB than Honesty-Humility suggested that a strong masking effect might be present, which was supported by the RVE analyses: Fairness correlated more strongly with OCB than all other facets (Sincerity, Greed Avoidance, and Modesty) and all facet-level correlations differed significantly in magnitude from the domain-level correlation.[4]

For Emotionality, Sentimentality correlated positively with OCB (ρ = .201), whereas Fearfulness (ρ = −.076) and Anxiety (ρ = −.055) correlated negatively with OCB. Dependence (ρ = −.001) did not correlate significantly with OCB. Combined with the fact that Emotionality also did not correlate significantly with OCB (ρ = −.002), these findings suggested a cancellation effect, and the RVE analyses supported this: Fearfulness and Anxiety correlated negatively with OCB, whereas Sentimentality correlated positively with OCB, and these correlations differed

[3]Lee et al. (2019) found that Honesty-Humility does not explain incremental variance in OCB beyond the Big Five traits, general mental ability, and integrity. However, their meta-analytic correlation for the relation between Honesty-Humility and OCB was smaller than the one we find (ρ = .130 versus ρ = .208). Note that our effect sizes estimate is based on a larger number of included studies (*k* = 13 versus *k* = 20). Re-running their analysis with our effect size estimate demonstrates that Honesty-Humility explains 1.5% additional variance in OCB over and above the Big Five traits, general mental ability, and integrity.

[4]Applying a Bonferrini correction for all comparisons within one domain to the significance level (i.e., α = .05/10 = .005), we only find evidence for a weak masking effect because the correlation for Fairness with OCB is not significantly stronger than the correlation for Honesty-Humility with OCB anymore.

Table 2. Meta-analytic results of the relations between HEXACO-PI-R domains/facets and OCB.

	Overall Effect Size									Heterogeneity		Publication Bias			
	k	*N*	*r*	SE*r*	ρ	SEρ	%Var	95% CI	80% CrI	*T*	I^2	$Rank_p$	Reg_p	Bi_p	$Half_p$
Honesty-Humility	20	6697	.175	.031	.208	.037	17.86	.136, .280	.017, .399	.144	84.01	.631	.729	.006	<.001
Sincerity	16	4720	.106	.030	.142	.040	27.42	.064, .219	−.032, .315	.129	73.07	.757	.535	.188	<.001
Fairness	16	4720	.220	.037	.273	.045	17.70	.184, .362	.059, .487	.161	84.43	.894	.523	.006	<.001
Greed Avoidance	16	4720	.087	.021	.110	.027	58.40	.057, .162	.016, .204	.068	44.15	.265	.141	.188	.096
Modesty	16	4720	.058	.050	.076	.066	10.86	−.052, .205	−.247, .400	.244	91.25	.626	.618	.109	<.001
Emotionality	18	6168	−.002	.023	−.002	.027	37.97	−.054, .051	−.113, .110	.083	61.67	.330	.055	.313	.007
Fearfulness	16	4720	−.056	.018	−.076	.023	75.71	−.121, −.031	−.136, −.017	.041	20.62	.228	.551	.750	.037
Anxiety	16	4720	−.043	.020	−.055	.026	61.04	−.105, −.005	−.140, .030	.061	39.15	.265	.499	.750	.050
Dependence	16	4720	−.001	.020	−.001	.026	63.97	−.052, .050	−.086, .084	.061	37.24	.041	.071	.250	.154
Sentimentality	16	4720	.152	.025	.201	.032	39.62	.137, .264	.071, .330	.096	60.56	.825	.565	.035	<.001
Extraversion	18	6168	.299	.030	.347	.033	17.89	.282, .412	.187, .506	.120	81.61	.112	.578	<.001	<.001
Social Self-Esteem	16	4720	.221	.048	.278	.059	11.48	.162, .394	−.014, .570	.220	91.23	.450	.780	.011	<.001
Social Boldness	16	4720	.205	.025	.255	.030	38.18	.196, .315	.133, .377	.090	62.01	.690	.537	.001	<.001
Sociability	16	4720	.217	.028	.285	.038	31.51	.211, .358	.120, .450	.123	73.62	.825	.924	<.001	<.001
Liveliness	16	4720	.281	.031	.352	.037	21.86	.279, .426	.184, .521	.126	76.89	.350	.802	.001	<.001
Agreeableness	18	6174	.183	.029	.217	.034	19.75	.151, .283	.057, .377	.120	79.27	.112	.201	.003	<.001
Forgivingness	16	4720	.181	.020	.224	.025	63.62	.176, .273	.140, .308	.061	41.91	.690	.499	.001	<.001
Gentleness	16	4720	.155	.032	.211	.043	23.48	.127, .296	.016, .406	.146	77.80	.228	.285	.011	<.001
Flexibility	16	4720	.085	.024	.118	.033	43.33	.054, .183	−.007, .243	.092	55.02	.350	.303	.031	<.001
Patience	16	4720	.128	.034	.169	.045	21.88	.080, .257	−.041, .378	.157	81.44	.450	.615	.035	<.001
Conscientiousness	19	6347	.266	.054	.319	.062	6.67	.199, .440	−.018, .656	.256	95.51	.041	.128	<.001	<.001
Organization	17	4899	.163	.053	.218	.067	10.34	.086, .350	−.128, .564	.262	92.55	.542	.365	.004	<.001
Diligence	17	4899	.311	.057	.430	.068	11.91	.298, .563	.082, .779	.264	93.52	.715	.536	.002	<.001
Perfectionism	17	4899	.170	.038	.246	.057	19.49	.134, .358	−.039, .531	.215	87.44	.393	.213	.002	<.001
Prudence	17	4899	.131	.055	.167	.068	9.90	.033, .301	−.184, .518	.265	93.22	.091	.277	.008	<.001
Openness to Experience	18	6168	.164	.024	.195	.027	34.94	.142, .247	.080, .309	.085	64.72	.881	.221	.002	<.001
Aesthetic Appreciation	16	4720	.139	.027	.181	.034	36.05	.115, .248	.040, .322	.105	65.64	.894	.470	.035	<.001
Inquisitiveness	16	4720	.127	.026	.173	.033	40.48	.109, .237	.045, .300	.094	58.68	.165	.029	.008	<.001
Creativity	16	4720	.133	.022	.170	.027	52.36	.117, .223	.074, .266	.070	46.76	.965	.838	.063	<.001
Unconventionality	16	4720	.094	.028	.134	.039	31.02	.056, .211	−.032, .299	.123	67.54	965	.901	.109	<.001
Altruism	9	2315	.304	.060	.400	.070	17.62	.264, .537	.140, .661	.191	87.99	.920	<.001	.035	<.001

Note. *k* = cumulative number of studies; *N* = cumulative sample size; mean weighted *r* = sample size weighted correlation; SE*r* = standard error for *r;* ρ = correlation corrected for unreliability; SEρ = standard error for ρ; %Var = percentage of variance attributable to unreliability; 95% CI = 95% confidence interval for ρ; 80% CrI = 80% credibility interval for ρ; *p* = *p*-value for ρ; *T* and I^2 = indices of heterogeneity for ρ; $Rank_p$ = *p*-value for the rank correlation test of funnel plot asymmetry using ρ; Reg_p = *p*-value for the regression test of funnel plot asymmetry using ρ; Bi_p = *p*-value for the binomial test of a *p*-curve analysis; $Half_p$ = *p*-value for a half *p*-curve test.

significantly. However, the correlations for Fearfulness and Anxiety with OCB did not significantly differ from the correlation of Emotionality with OCB, therefore only providing support for a weak cancellation effect.[5]

All facets of Extraversion correlated significantly and positively with OCB: Liveliness (ρ = .352) exhibited the strongest correlation, followed by Sociability (ρ = .285), Social Self-Esteem (ρ = .278), and Social Boldness (ρ = .255). Among the facets of Agreeableness, Forgivingness correlated strongest with OCB (ρ = .224), followed by Gentleness (ρ = .211), Patience (ρ = .169), and Flexibility (ρ = .118). No cancellation or masking effects were observed for Extraversion and Agreeableness.

For Conscientiousness, Diligence (ρ = .430) correlated most strongly with OCB (even out of all HEXACO domains and facets). The correlations for the other facets with OCB were also positive and significant, but smaller in magnitude: Perfectionism: ρ = .246, Organization: ρ = .218, and Prudence: ρ = .167. This pattern of correlations among the Conscientiousness facets suggested a strong masking effect and the RVE analyses supported this: Diligence correlated more strongly with OCB than the other facets (i.e., Organization, Perfectionism, and Prudence) and all facet-level correlations differed significantly in magnitude from the domain-level correlation.[6]

All facets of Openness to Experience correlated positively and with similar magnitude with OCB: Aesthetic Appreciation: ρ = .181, Inquisitiveness: ρ = .173, Creativity: ρ = .170, and Unconventionality: ρ = .134. There was no cancellation or masking effect for Openness to Experience.

Last but not least, the interstitial Altruism facet exhibited a strong correlation with OCB (ρ = .400). It should also be mentioned that the meta-analytic correlations based on the RVE approach only differed in the third decimal compared to the meta-analytic correlations attained with the *metafor* package. However, the correlations of Modesty and Anxiety with OCB were no longer statistically significant when using the RVE approach.

Publication bias analyses

Egger's regression test was only significant for Conscientiousness and Dependence, and Begg and Mazumdar's rank correlation was only significant for Inquisitiveness and Altruism. As such, no domain or facet had significant results for both tests of funnel plot asymmetry. The *p*-curve analyses indicated evidential value and an absence of publication bias for all domains and facets except for Greed Avoidance, Anxiety, and Dependence. The results of the half *p*-curve and the binomial test for a right-skewed *p*-curve were ambiguous for the following domains and facets: Sincerity, Modesty, Emotionality, Fearfulness, Creativity, and Unconventionality. We also compared effect sizes of published and unpublished studies (see supplementary materials). Only the effect sizes for Social Boldness were stronger for published than for unpublished studies, indicating a publication bias. However, the effect sizes for a few domains and facets (i.e., Sincerity, Fairness, Sentimentality, Extraversion, Conscientiousness, Organization, Diligence, Perfectionism, and Aesthetic Appreciation) were stronger for unpublished than for published studies. Furthermore, the relations of Anxiety with OCB differed in direction for published and unpublished studies. Overall, the results of three different publication bias analyses are inconsistent (except for Dependence) and therefore indicate that it is unlikely that publication bias strongly influenced the results of the current meta-analysis.

Exploratory meta-analytic moderator analyses

We also examined the moderating effect of three study characteristics on the meta-analytic effect size distribution: 1) OCB-I versus OCB-O, 2) self- versus other-ratings of OCB, and 3) 60-, 100-, or 200-

[5]This cancellation effect even holds when applying the Bonferroni correction mentioned in the previous footnote.

[6]The correlations for Conscientiousness and Perfectionism with OCB are no longer significantly different from each other when applying a Bonferroni correction (i.e., α = .05/10 = .005). This does not, however, change the conclusions regarding this strong masking effect for Conscientiousness because the correlation for Dilligence still differs significantly from the correlations for Organization and Prudence when applying the same Bonferroni correction.

item HEXACO measure. The detailed results of all moderator analyses can be found in the supplementary materials.

Of the six personality domains, only Emotionality correlated differently with OCB-I (ρ = .052) and OCB-O (ρ = −.052). Among the facets, Anxiety correlated more strongly with OCB-O (ρ = −.099) than with OCB-I (ρ = −.001), and Sociability correlated more strongly with OCB-I (ρ = .312) than with OCB-O (ρ = .161). The relations of all other facets with OCB-I or OCB-O did not differ significantly.

The source of the OCB rating moderated the relations of a few domains with OCB. Emotionality correlated more strongly with other-ratings (ρ = −.127) than with self-ratings of OCB (ρ = .017). Extraversion correlated more strongly with self-ratings (ρ = .382) than with other-ratings of OCB (ρ = .225). Agreeableness also correlated more strongly with self-ratings (ρ = .239) than with other-ratings of OCB (ρ = .108). The relations of all other domains (i.e., Honesty-Humility, Conscientiousness, and Openness to Experience) did not differ depending on the use of self- or other-ratings of OCB. None of the Honesty-Humility facets correlated differently with self- or other-ratings of OCB. Among the Emotionality facets, only Sentimentality correlated differently with self- (ρ = .225) compared to other-ratings of OCB (ρ = .016). The Extraversion facets Sociability and Liveliness both correlated more strongly with self- (ρ = .323 and ρ = .378, respectively) than with other-ratings of OCB (ρ = .088 and ρ = .221, respectively). For Agreeableness, only the Gentleness facet correlated more strongly with self-ratings (ρ = .234) than with other-ratings of OCB (ρ = .055). None of the Conscientiousness and Openness to Experience facets correlated differently with self- or other-ratings of OCB. However, Altruism correlated more strongly with self- (ρ = .448) than with other-ratings of OCB (ρ = .204). Generally, the results of these moderator analyses suggest that common source or self-other agreement biases might have influenced some of the meta-analytic effect sizes estimates.

The length of the HEXACO measure did not moderate the relations of Honesty-Humility, Conscientiousness, and Openness to Experience with OCB. The relations of Emotionality, Extraversion, and Agreeableness with OCB were stronger when the domains were measured with the 200-item HEXACO measure (ρ = −.098, ρ = .441, and ρ = .333, respectively) compared to when they were measured with the 60- (ρ = .015, ρ = .323, and ρ = .186, respectively) or 100-item measure (ρ = .038, ρ = .314, and ρ = .170, respectively). A similar moderation effect, in which the relations were stronger for longer HEXACO measures, was also found for the facets Social Boldness, Forgivingness, Patience, and Creativity.

Meta-analytic regression analyses

Using the correlation matrices, we conducted meta-analytic linear regressions to estimate the amount of explained variance in OCB (see supplementary materials for detailed results). The RWA estimates reported in the text are based on correlations corrected for unreliability, but those found based on sample size-weighted correlations can be found in the supplementary materials.

The six HEXACO domains explained 13.7% of the variance in OCB when using sample size-weighted correlations, and 17.8% when using correlations corrected for unreliability. Results from the RWA demonstrate that Extraversion contributed most (42.5%) to the explained variance in OCB. Conscientiousness (30.2%), Honesty-Humility (8.9%), Openness to Experience (8.6%), and Agreeableness (8.1%) also contributed substantial amounts of explained variance, whereas the contribution of Emotionality (1.7%) was rather negligible.[7] Exploratory analyses indicate that Extraversion, Conscientiousness, and Honesty-Humility already explain 12.9% of the variance in OCB (16.9% when using correlations corrected for unreliability).

[7]Note, however, that the regression coefficient for Emotionality was significant in the meta-analytic linear regression analysis and that the regression coefficient for Agreeableness was not significant. It is not possible to examine statistical significance for relative weights when these are calculated based on a meta-analytic correlation matrix.

The 24 HEXACO facets combined explained 17.1% of the variance in OCB when using sample size-weighted correlations, and 32.7% when using correlations corrected for unreliability. The facets therefore explained 3.4% to 14.9% more variance in OCB than the domains, depending on whether or not correlations were corrected for unreliability. Especially the facets Diligence (relative weight = 25.0%), Sociability (9.6%), and Liveliness (7.7%) contributed substantial amounts of explained variance in OCB (together, these facets explain 13.0% of the variance in OCB when using sample size-weighted correlations and 21.9% when using correlations corrected for unreliability). It is possible that the facets have higher criterion-related validity than the domains simply because the number of predictors is higher (24 versus 6). However, the amount of explained variance is still substantially higher for the facets compared to the domains when adjusting R^2 for the number of predictors (e.g., adjusted R^2 = .163 for facets and adjusted R^2 = .135 for domains for sample size-weighted correlations, and adjusted R^2 = .321 for facets and adjusted R^2 = .176 for domains for corrected correlations).

We also ran the same linear regressions and the RWA analyses with OCB-I and OCB-O as dependent variables. The detailed results of these analyses can be found in the supplementary materials as well. Using sample size-weighted correlations, the HEXACO domains and facets explained roughly the same amount of variance in OCB-I (R^2 = .130 and R^2 = .146 for domains and facets, respectively) as in OCB-O (R^2 = .119 and R^2 = .150 for domains and facets, respectively). Using corrected correlations, the HEXACO domains and facets also explained roughly the same amount of variance in OCB-I (R^2 = .175 and R^2 = .275 for domains and facets, respectively) as in OCB-O (R^2 = .163 and R^2 = .311 for domains and facets, respectively).

Discussion

OCB describes discretionary behavior performed by employees which is crucial for organizational functioning (P. M. Podsakoff et al., 2000). Because of its discretionary nature, dispositional characteristics of employees play an important role in determining who engages in OCBs (Chiaburu et al., 2011). In the current meta-analysis, we assessed the degree to which the HEXACO domains and facets can be used to predict OCB. The meta-analytic results indicate that all HEXACO domains, except for Emotionality,[8] positively predict OCB. Especially those individuals who enjoy social gatherings and interactions (i.e., who score high on Extraversion) are more likely to engage in OCBs. But individuals scoring high on Conscientiousness, Honesty-Humility, Agreeableness, and Openness to Experience exhibit higher levels of OCB as well.

Besides estimating the domain-level relations with OCB with greater precision than in previous meta-analyses (Y. Lee et al., 2019; Zettler et al., 2020), the current meta-analysis also examined HEXACO facet-level relations with OCB. For Extraversion, Agreeableness, and Openness to Experience, it is the shared variance among the facets, which is captured by their domain, that predicts OCB: The magnitude of correlations with OCB was similar for all facets of these domains. However, the relatively small magnitude of the domain-level correlations for Honesty-Humility, Emotionality, and Conscientiousness can be explained by cancellation or masking effects. For Emotionality, we found evidence for a weak cancellation effect among its constituent facets: Sentimentality correlated positively with OCB, whereas Fearfulness and Anxiety correlated negatively with OCB, but only the correlation of Sentimentality with OCB differed significantly from the correlation for Emotionality with OCB. For Honesty-Humility and Conscientiousness, we found evidence for strong masking effects in which at least one facet correlated more positively and one facet more negatively with OCB than their constituent domain. These findings demonstrate that aggregating facets to the higher order domain obscures trait-specific, but criterion-relevant variance for these three domains.

[8]Please note that Emotionality does predict OCB significantly in the linear regression analyses, but that the relative weight from the RWA is the lowest of all six HEXACO domains. As such, Emotionality does not seem to add much explained variance in OCB.

Table 3. Comparison of meta-analytic results for the HEXACO and the Big Five based on other-reports of OCB.

Domain	HEXACO		Big Five	
	ρ	95% CI	ρ	95% CI
Emotionality/Neuroticism	−.13	−.20, −.05	−.12	−.27, .03
Extraversion	.23	.12, .33	.09	−.07, .25
Agreeableness	.11	.03, .18	.14	.01, .28
Conscientiousness	.26	.14, .38	.18	.02, .34
Openness to Experience	.22	.12, .33	.14	.04, .25

Note. Correlations for Neuroticism are reversed because Chiaburu et al. (2011) report correlations for Emotional Stability; Correlations from Chiaburu et al. (2011) are corrected for unreliability and for range restriction, while results from the current meta-analysis are only corrected for unreliability.

Additional evidence for this idea comes from the finding that the 24 facets combined (R^2 = .171) explain 3.4% more variance in OCB than the six domains (R^2 = .137) when relying on sample size-weighted correlations. Importantly, just three facets combined (i.e., Diligence, Sociability, Liveliness; R^2 = .130) already explain almost the same amount of variance in OCB as the six domains. When using the corrected meta-analytic correlations, the estimates of explained variance in OCB are even larger: The facets then explain 14.9% more variance in OCB than the domains (R^2 = .327 for facets and R^2 = .178 for domains). These results further demonstrate that using only domains when predicting OCB reduces the criterion-related validity of personality.

Taken together, and in line with the bandwidth-fidelity dilemma (Cronbach & Gleser, 1957), these results provide further evidence for the use of facets when predicting OCB. They are also in line with multiple studies demonstrating that narrow facets can outperform broad domains even when predicting broad criteria (Ashton, 1998; Judge et al., 2013; Pletzer et al., 2020; Tett et al., 2003). Future research should therefore use domains *and* facets to predict OCB, especially given that this comes at no extra cost when assessing personality.

Criterion-related validity comparisons

It is also important to compare our findings for the HEXACO to those by Chiaburu et al. (2011) for the Big Five. These authors only included other-reports of OCB and we therefore compare their results to the ones found for other-reports in our meta-analysis (see Table 3 for a comparison of the effect sizes for the Big Five and for the HEXACO). The most notable difference is that the correlation for Extraversion is substantially stronger for the HEXACO (ρ = .23) than for the Big Five (ρ = .09). This is surprising given that HEXACO and Big Five Extraversion are conceptually similar (Ashton & Lee, 2007). The difference in correlations is most likely due to the relatively strong correlation found in one of the studies in our meta-analysis (i.e., Cohen, Morse, Kim, Morse, & Kim, 2014; r = .316). The average corrected meta-analytic correlation when excluding this specific study is ρ = .16, and its credibility interval (.10, .22) overlaps with the credibility interval in Chiaburu et al.'s meta-analysis (-.07, .25). The other two domains that are conceptually similar – Conscientiousness and Openness to Experience – exhibit similar correlations with OCB for the Big Five and the HEXACO model.

It is also worth noting that the HEXACO domains and facets explain substantially less variance in OCB (R^2 = .137) than in CWB (R^2 = .244) (Pletzer et al., 2020), which can be explained in two ways. First, these findings suggest that CWB has a stronger dispositional core than OCB. In line with this argument, Dalal (2005) finds a stronger correlation of Conscientiousness with CWB (ρ = −.38) than with OCB (ρ = .30), and Lee et al. (2019) show that the Big Five traits, integrity, and general mental ability predict more variance in CWB (R^2 = .329) than in OCB (R^2 = .097). Second, the Honesty-Humility domain predicts deviant or rule-breaking behaviors especially well and prosocial behaviors at work less well: Honesty-Humility correlates much stronger with CWB (ρ = −.420, Pletzer et al., 2020) than with OCB (ρ = .208), which increases the overall criterion-related validity of the HEXACO domains for CWB substantially compared to the criterion-related validity for OCB (Y. Lee et al., 2019).

Methodological implications

When examining the overall explained variances, we found that both domains and facets explain roughly the same amount of variance in OCB-I as in OCB-O. Similarly, the HEXACO domains and facets generally did not predict OCB-I and OCB-O differentially. Only the Anxiety facet correlated more negatively with OCB-O than with OCB-I, and the Sociability facet correlated more strongly with OCB-I than with OCB-O. Our findings therefore suggest that the HEXACO domains and facets predict the overall tendency of employees to engage in OCB rather than OCBs targeted at the organization or at other individuals within the organization. This finding is in line with research conceptualizing both OCB-I and OCB-O as prosocial forms of OCB because both forms maintain the social situation at work (Organ, 1997), and it suggests that the target of OCB is not crucial when using personality traits as predictors.

Future research should expand the criterion space of OCB to include other forms when using the HEXACO domains and facets as predictors. For example, Chiaburu et al. (2011) found that Extraversion and Openness to Experience predict change-oriented OCB much better than the other three Big Five domains because these personality domains reflect agentic traits (Digman, 1990). Other taxonomies of OCB also exist, which might show differential correlations with the HEXACO domains and facets. For example, Organ (1988) conceptualized OCB as consisting of the facets *altruism* (not to be confused with the HEXACO Altruism facet), *conscientiousness* (or compliance, not to be confused with the personality domain Conscientiousness), *sportsmanship, courtesy*, and *civic virtue*, and some of these OCB facets might correlate differently with the HEXACO domains and facets. For example, *altruism* might be especially well predicted by Honesty-Humility or by the HEXACO Altruism facet, whereas *courtesy* might be predicted best by Agreeableness. In the current meta-analysis, we could not examine these different forms of OCB due to a lack of available data, but future research should examine the relations of the HEXACO domains and facets with more specific forms of OCB.

Most of the included studies in the current meta-analysis relied on self-reports to assess employees' OCB. Using self-reports in research on OCB can be problematic because employees might present themselves more favorably than justified by their actual behavior and because self-reports might inflate effect sizes due to common source bias (Meier & O'Toole, 2013). Other-reports of OCB mitigate these concerns, but suffer from the disadvantage that others (e.g., supervisors or coworkers) might not be able to observe all OCBs an employee engages in. In the current meta-analysis, we find evidence that suggests that two domains (i.e., Extraversion and Agreeableness) and quite a few facets correlate more strongly with self-ratings than with other-ratings of OCB. However, as we were able to include only a few studies using other-reports of OCB, this comparison should be interpreted with caution. Importantly, Carpenter, Berry, and Houston (2014) demonstrated that mean-level differences between self- and other-reported OCB are relatively small, that self- and other-ratings of OCB are moderately correlated ($\rho = .26$), and that other-ratings of OCB contribute relatively little incremental validity to the relations of self-rated OCB with its correlates, providing at least some support for the "use and construct-related validity of self-rated OCB" (p. 566). Note that the moderate level of self-other agreement on the same variable (e.g., OCB) puts an effective ceiling on the correlations among different variables (e.g., personality and OCB) when measured using different sources (see De Vries, 2012, for further examples and discussion).

We also examined the moderating effect of the length of the HEXACO measure. For some domains and facets (i.e., Emotionality, Extraversion, Agreeableness, and some facets), we find stronger relations with OCB when longer (i.e., 200-item) compared to shorter HEXACO measures (i.e., 60- or 100-item) were used, even after controlling for the lower reliability of shorter measures. Researchers and practitioners deciding about the length of a measure face an important trade-off between efficiency and validity, but the current results support the idea that using shorter personality measures decreases the criterion-related validity of some HEXACO domains and facets because it increases Type 1 and Type 2 error rates (Credé, Harms, Niehorster, & Gaye-Valentine, 2012). Especially when assessing facets, researchers should rely on longer HEXACO measures to be able to reliably assess them.

Practical implications

Practitioners increasingly use personality traits to predict applicants' future job performance. Task performance is usually the most important criterion in the selection process, which is predicted best by the broad personality domain Conscientiousness (Barrick & Mount, 1991). However, behaviors by employees that go beyond task performance, such as OCB, have received increased attention in recent decades because they also contribute substantially to organizational success (P. M. Podsakoff & MacKenzie, 1997). When predicting OCB, all other HEXACO domains (except for Emotionality) contribute substantial amounts of explained variance. For example, the current findings suggest that Extraversion has the highest criterion-related validity for OCB out of all HEXACO domains, although Extraversion is not highly predictive of overall job performance or CWB (Barrick & Mount, 1991; Pletzer et al., 2019). Researchers and practitioners should therefore expand their focus by assessing additional broad personality domains besides Conscientiousness, especially when other criteria besides task performance are of interest in the job selection context. Generally speaking, practitioners face a trade-off between maximizing criterion-related validity and minimizing testing times when deciding which domains to assess in a selection context. Exploratory analyses indicated that Extraversion, Conscientiousness, and Honesty-Humility already predicted 12.9% of the variance in OCB (compared to 13.7% when relying on all six domains), which indicates that choosing these three domains could result in the highest efficiency when predicting OCB.

However, some facets outperform domains when predicting OCB because facets grouped under the same domain mask or cancel out each other's criterion-related validity. Researchers and practitioners can utilize these findings by assessing only those facets that are highly predictive of their desired criterion. For example, Diligence, Sociability, and Liveliness already explain roughly the same amount of variance in OCB as the six broad HEXACO domains. The interstitial Altruism facet also explains relatively high amounts of variance in OCB. Relying on facets that have especially high criterion-related validity will reduce testing times in job selection contexts even more because they can be measured with fewer items than the broad domains, thereby increasing the efficiency of the selection procedure. For example, measuring the three facets (i.e., Diligence, Sociability, Liveliness) requires only 24 items, which is substantially less than the number of items necessary to measure all six HEXACO domains. An anonymous reviewer did, however, point out the possibility that facets could perform differently when not being assessed as part of a longer personality inventory, which could affect facet-level relations with OCB. Indeed, previous studies have shown that the extraction of single scales or the item order (Ortner, 2004; Schriesheim, Kopelman, & Solomon, 1989) can affect the psychometric properties of personality inventories. Future research should therefore examine if the current findings replicate when only measuring one or a few facets at a time. Also note that the current results suggest that researchers and practitioners should use longer HEXACO measures, especially when assessing only a few facets because this will lead to even larger gains in criterion-related validity.

Limitations and future research ideas

The present study is not without limitations. We already mentioned a few limitations (e.g., reliance on only OCB-I and OCB-O, predominant use of self-ratings), but several additional limitations need to be mentioned as well. First, although personality is relatively stable, our inference that personality determines OCB is based on the trait-based approach to determining causality, which cannot be equated with the more rigorous experimental approach to establishing causal relations. It is therefore possible that regularly engaging in OCB changes one's personality. For example, Hudson, Roberts, and Lodi-Smith (2012) and Hudson and Roberts (2016) show that changes in social involvement at work can actually change an individual's personality traits. An alternative interpretation could be that employees adapt their personality ratings if they regularly engage in OCBs. We still believe that personality is more likely to influence CWB and OCB than vice versa, but our findings should be interpreted with caution.

Second, most studies included in the current meta-analysis were conducted in low-stakes situations. High-stakes situations, such as job selection contexts, might reduce the criterion-related validity of personality for predicting OCB. Indeed, Anglim et al. (2018) found higher criterion-related validity for the HEXACO domains in a job incumbent sample than in a job applicant sample. However, the HEXACO domains still had significant criterion-related validity for predicting OCB in the job applicant sample. Future research should therefore conduct more studies in high-stakes situations to further establish the criterion-related validity of the HEXACO domains and facets for OCB in such situations.

Third, some of the reliabilities for the facets were below the suggested threshold of .70 (Nunnally & Bernstein, 1994; see supplementary materials for the average reliabilities). For example, the average reliability for the Flexibility facet was $\alpha = .565$. The reliabilities for Diligence, Perfectionism, and Unconventionality were also below .60. This is an especially important caveat of the current findings because the measurement of facets is generally less reliable than that of domains, introducing higher levels of random variance in the measurement of facets and possibly higher levels of corrected validity estimates due to overcorrection, which could possibly explain the higher levels of criterion-related validity for facets compared to domains. Note, however, that we did not find that shorter scales, which generally have lower internal reliability, exhibit higher corrected criterion-related validity. In fact, we found exactly the opposite for quite a few domains and facets, suggesting that more reliable measurement is associated with higher corrected criterion-related validity. We therefore believe that using facets to predict OCB can be beneficial for researchers and practitioners, but that results for facets with low reliabilities should be interpreted with caution.

And last, although most significant domain-level predictors exhibited validity generalization for OCB (Tett et al., 2017), it needs to be repeated here that the credibility interval for Conscientiousness (as well as for some facets which significantly related to OCB) did not exclude zero, indicating that the relation between Conscientiousness and OCB might even be negative under certain circumstances. This highlights the possibility that moderators influence the strength of the relation between Conscientiousness and OCB, and future research should investigate moderators of the relations between HEXACO domains and facets with OCB. For example, Wendler, Liu, and Zettler (2018) and Wiltshire, Bourdage, and Lee (2014) demonstrate that Honesty-Humility interacts with context perceptions to drive OCB and task performance. It is also possible that the HEXACO domains interact with each other. For example, Oh, Lee, Ashton, and De Vries (2011) found that Extraversion interacts with Honesty-Humility when predicting CWB, and similar interactions could also be predictive of OCB.

Conclusion

The current meta-analytic results demonstrate that all HEXACO domains except for Emotionality significantly predict OCB: Extraversion shows the strongest correlation with OCB, followed by Conscientiousness, Agreeableness, Honesty-Humility, and Openness to Experience. However, the magnitude of some domain-level correlations was relatively small, which can be explained by our finding of strong masking effects among the facets of Honesty-Humility and Conscientiousness, and by a weak cancellation effect among the facets of Emotionality. Consequently, further examination of lower-level facets seems to be a fruitful avenue to improve the prediction of OCB.

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References

Anglim, J., Lievens, F., Everton, L., Grant, S. L., & Marty, A. (2018). HEXACO personality predicts counterproductive work behavior and organizational citizenship behavior in low-stakes and job applicant contexts. *Journal of Research in Personality*, *77*, 11–20. doi:10.1016/j.jrp.2018.09.003

Ashton, M. C. (1998). Personality and job performance: The importance of narrow traits. *Journal of Organizational Behavior*, *19*, 289–303. doi:10.1002/(SICI)1099-1379(199805)19:3<289::AID-JOB841>3.0.CO;2-C

Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review*, *11*, 150–166. doi:10.1177/1088868306294907

Ashton, M. C., Lee, K., & De Vries, R. E. (2014). The HEXACO Honesty-Humility, agreeableness, and emotionality factors: A review of research and theory. *Personality and Social Psychology Review*, *18*, 139–152. doi:10.1177/1088868314523838

Ashton, M. C., Lee, K., Perugini, M., Szarota, P., Di, B. L., Boies, K., . . . De Raad, B. (2004). A six-factor structure of personality-descriptive adjectives: Solutions from psycholexical studies in seven languages. *Journal of Personality and Social Psychology*, *86*, 356–366. doi:10.1037/0022-3514.86.2.356

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1–26. doi:10.1111/j.1744-6570.1991.tb00688.x

Begg, C. B., & Mazumdar, M. (1994). Operating characteristics of a rank correlation test for publication bias. *Biometrics*, *50*, 1088–1101. doi:10.2307/2533446

Blakely, G. L., Andrews, M. C., & Moorman, R. H. (2005). The moderating effects of equity sensitivity on the relationship between organizational justice and organizational citizenship behaviors. *Journal of Business and Psychology*, *20*, 259–273. doi:10.1007/s10869-005-8263-3

Blanco Villarreal, M. P. (2019). *The relationship between justice perceptions, conscientiousness and workplace behaviors among old and young employees*. Electronic Theses, Projects, and Dissertations, 1–121.

Bolino, M. C., Klotz, A. C., Turnley, W. H., & Harvey, J. (2013). Exploring the dark side of organizational citizenship behavior. *Journal of Organizational Behavior*, *34*(4), 542–559. doi:10.1002/job.1847

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. West Sussex, United Kingdom: John Wiley & Sons, Ltd.

Borman, W. C., Buck, D. E., Motowidlo, S. J., Hanson, M. A., Stark, S., & Drasgow, F. (2001). An examination of the comparative reliability, validity, and accuracy of performance ratings made using computerized adaptive rating scales. *Journal of Applied Psychology*, *86*, 965–973. doi:10.1037/0021-9010.86.5.965

Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: The meaning for personnel selection research. *Human Performance*, *10*, 99–109. doi:10.1207/s15327043hup1002_3

Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment*, *9*, 52–69. doi:10.1111/1468-2389.00163

Bourdage, J. S., Goupal, A., Neilson, T., Lukacik, E.-R. E.-R., & Lee, N. (2018). Personality, equity sensitivity, and discretionary workplace behavior. *Personality and Individual Differences*, *120*, 144–150. doi:10.1016/j.paid.2017.08.018

Bourdage, J. S., Lee, K., Lee, J.-H., & Shin, K.-H. (2012). Motives of organizational citizenship behavior: Personality correlates and coworker ratings of OCB. *Human Performance*, *25*, 179–200. doi:10.1080/08959285.2012.683904

Brief, A. P., & Motowidlo, S. J. (1986). Prosocial organizational behaviors. *Academy of Management Review*, *11*, 710–725. doi:10.2307/258391

Cabrera, Á., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management*, *17*, 245–264. doi:10.1080/09585190500404614

Carpenter, N. C., Berry, C. M., & Houston, L. (2014). A meta-analytic comparison of self-reported and other-reported organizational citizenship behavior. *Journal of Organizational Behavior*, *35*, 547–574. doi:10.1002/job.1909

Chiaburu, D. S., Oh, I.-S., Berry, C. M., Li, N., & Gardner, R. G. (2011). The five-factor model of personality traits and organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, *96*, 1140–1166. doi:10.1037/a0024004

Christiansen, N. D., & Robie, C. (2011). Further consideration of the use of narrow trait scales. *Canadian Journal of Behavioural Science*, *43*, 183–194. doi:10.1037/a0023069

Cohen, T. R., Morse, L., Kim, Y., Morse, L., & Kim, Y. (2014). Moral character in the workplace. *Journal of Personality and Social Psychology*, *107*, 943–963. doi:10.1037/a0037245

Coté, S., & Miners, C. T. H. (2006). Emotional intelligence, cognitive intelligence, and job performance. *Administrative Science Quarterly*, *51*, 1–28. doi:10.2189/asqu.51.1.1

Credé, M., Harms, P., Niehorster, S., & Gaye-Valentine, A. (2012). An evaluation of the consequences of using short measures of the Big Five personality traits. *Journal of Personality and Social Psychology*, *102*, 874–888. doi:10.1037/a0027403

Cronbach, L., & Gleser, G. (1957). *Psychological tests and personnel decisions*. Champaign, USA: University of Illinois Press.

Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology*, *90*, 1241–1255. doi:10.1037/0021-9010.90.6.1241

De Vries, A., De Vries, R. E., Born, M. P., & Van den Berg, R. H. (2014). Persoonlijkheid als voorspeller van werkprestatie en contraproductief werkgedrag. *Gedrag En Organisatie*, *27*, 407–427.

De Vries, R. E. (2012). Personality predictors of leadership styles and the self – Other agreement problem. *The Leadership Quarterly*, *23*, 809–821. doi:10.1016/j.leaqua.2012.03.002

De Vries, R. E., Pronk, J., Olthof, T., & Goossens, F. A. (2020). Getting along and/or getting ahead: Differential HEXACO personality correlates of likeability and popularity among adolescents. *European Journal of Personality*, *34*, 245–261. doi:10.1002/per.2243

De Vries, R. E., Wawoe, K. W., & Holtrop, D. (2016). What Is engagement? Proactivity as the missing link in the HEXACO model of personality. *Journal of Personality*, *84*, 178–193. doi:10.1111/jopy.12150

Debusscher, J., Hofmans, J., & De Fruyt, F. (2017). The multiple face(t)s of state conscientiousness: Predicting task performance and organizational citizenship behavior. *Journal of Research in Personality*, *69*, 78–85. doi:10.1016/j.jrp.2016.06.009

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, *41*, 417–440. doi:10.1146/annurev.ps.41.020190.002221

Egger, M., Davey Smith, G., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *British Medical Journal*, *315*, 629–634. doi:10.1136/bmj.315.7109.629

Fishbein, M., & Ajzen, I. (1974). Attitudes towards objects as predictors of single and multiple behavioral criteria. *Psychological Review*, *81*, 59–74. doi:10.1037/h0035872

Fox, S., Spector, P. E., Goh, A., Bruursema, K., & Kessler, S. R. (2012). The deviant citizen: Measuring potential positive relations between counterproductive work behaviour and organizational citizenship behaviour. *Journal of Occupational and Organizational Psychology*, *85*, 199–220. doi:10.1111/j.2044-8325.2011.02032.x

George, J. M., & Brief, A. P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin*, *112*, 310–329. doi:10.1037/0033-2909.112.2.310

Goldberg, L. R. (1990). An alternative " description of personality ": The Big-Five Factor structure. *Journal of Personality and Social Psychology*, *59*, 1216–1229. doi:10.1037/0022-3514.59.6.1216

Gonzalez-Mulé, E., DeGeest, D. S., McCormick, B. W., Seong, J. Y., & Brown, K. G. (2014). Can we get some cooperation around here? The mediating role of group norms on the relationship between team personality and individual helping behaviors. *Journal of Applied Psychology*, *99*, 988–999. doi:10.1037/a0037278

Hedges, L. V., Tipton, E., & Johnson, M. C. (2010). Robust variance estimation in meta-regression with dependent effect size estimates. *Research Synthesis Methods*, *1*, 39–65. doi:10.1002/jrsm.5

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analysis. *British Medical Journal*, *327*, 557–560. doi:10.1136/bmj.327.7414.557

Hoffman, B. J., Blair, C. A., Meriac, J. P., & Woehr, D. J. (2007). Expanding the criterion domain? A quantitative review of the OCB literature. *Journal of Applied Psychology*, *92*, 555–566. doi:10.1037/0021-9010.92.2.555

Hough, L. M., & Furnham, A. (2003). Use of personality variables in work settings. In W. Bornman, D. Ilgen, & R. J. Klimoski (Eds.), *Handbook of psychology: Industrial and organizational psychology* (pp. 131–169). Hoboken, USA: Wiley.

Hudson, N. W., & Roberts, B. W. (2016). Social investment in work reliably predicts change in conscientiousness and agreeableness: A direct replication and extension of Hudson, Roberts, and Lodi-Smith (2012). *Journal of Research in Personality*, *60*, 12–23. doi:10.1016/j.jrp.2015.09.004

Hudson, N. W., Roberts, B. W., & Lodi-Smith, J. (2012). Personality trait development and social investment in work. *Journal of Research in Personality*, *46*, 334–344. doi:10.1016/j.jrp.2012.03.002

Hunter, J. E., & Schmidt, F. L. (2014). *Methods of meta-analysis: Correcting error and bias in research findings*. Thousand Oaks, USA: Sage Publications.

Ilies, R., Fulmer, I. S., Spitzmuller, M., & Johnson, M. D. (2009). Personality and citizenship behavior: The mediating role of job satisfaction. *Journal of Applied Psychology*, *94*, 945–959. doi:10.1037/a0013329

Judge, T. A., Rodell, J. B., Klinger, R. L., Simon, L. S., & Crawford, E. R. (2013). Hierarchical representations of the Five-Factor Model of personality in predicting job performance: Integrating three organizing frameworks with two theoretical perspectives. *Journal of Applied Psychology*, *98*, 875–925. doi:10.1037/a0033901

Lee, K., & Allen, N. J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognition. *Journal of Applied Psychology*, *87*, 131–142. doi:10.1037//0021-9010.87.1.131

Lee, Y., Berry, C. M., & Gonzalez-Mulé, E. (2019). The importance of being humble: A meta-analysis and incremental validity analysis of the relationship between Honesty-Humility and job performance. *Journal of Applied Psychology*, *In Press*. doi:10.1037/apl0000421

LePine, J. A., Erez, A., & Johnson, D. E. (2002). The nature and dimensionality of organizational citizenship behavior: A critical review and meta-analysis. *Journal of Applied Psychology*, *87*, 52–65. doi:10.1037//0021-9010.87.1.52

Louw, K. R., Dunlop, P. D., Yeo, G. B., & Griffin, M. A. (2016). Mastery approach and performance approach: The differential prediction of organizational citizenship behavior and workplace deviance, beyond HEXACO personality. *Motivation and Emotion*, *40*, 566–576. doi:10.1007/s11031-016-9551-0

McCrae, R. R., & Costa, P. T. (1992). Personality trait structure as a human universal. *American Psychologist*, *52*, 509–516. doi:10.1037/0003-066X.52.5.509

Meier, K. J., & O'Toole, L. J. (2013). Subjective organizational performance and measurement error: Common source bias and spurious relationships. *Journal of Public Administration Research and Theory*, *23*, 429–456. doi:10.1093/jopart/mus057

Moon, H., Hollenbeck, J. R., Marinova, S., & Humphrey, S. E. (2008). Beneath the surface: Uncovering the relationship between extraversion and organizational citizenship behavior through a facet approach. *International Journal of Selection and Assessment*, *16*, 143–154. doi:10.1111/j.1468-2389.2008.00419.x

Moorman, R. H., & Blakely, G. L. (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. *Journal of Organizational Behavior*, *16*, 127–142. doi:10.1002/job.4030160204

Morrison, E. W. (1994). Role definitions and organizational citizenship behavior: The importance of the employee's perspective. *Academy of Management Journal*, *37*, 1543–1567. doi:10.5465/256798

Newman, A., Schwarz, G., Cooper, B., & Sendjaya, S. (2017). How servant leadership influences organizational citizenship behavior: The roles of LMX, empowerment, and proactive personality. *Journal of Business Ethics*, *145*, 49–62. doi:10.1007/s10551-015-2827-6

Ng, T. W. H., Lam, S. S. K., & Feldman, D. C. (2016). Organizational citizenship behavior and counterproductive work behavior: Do males and females differ? *Journal of Vocational Behavior*, *93*, 11–32. doi:10.1016/j.jvb.2015.12.005

Nunnally, J., & Bernstein, I. (1994). *Psychometric theory* (3rd ed.). New York, USA: McGraw-Hill.

Oh, I.-S., Le, H., Whitman, D. S., Kim, K., Yoo, T.-Y., Hwang, J.-O., & Kim, C.-S. (2014). The incremental validity of Honesty-Humility over cognitive ability and the big five personality traits. *Human Performance*, *27*, 206–224. doi:10.1080/08959285.2014.913594

Oh, I.-S., Lee, K., Ashton, M. C., & De Vries, R. E. (2011). Are dishonest extraverts more harmful than dishonest introverts? The interaction effects of Honesty-Humility and extraversion in predicting workplace deviance. *Applied Psychology*, *60*, 496–516. doi:10.1111/j.1464-0597.2011.00445.x

Ones, D. S., & Viswesvaran, C. (1996). Bandwidth-fidelity dilemma in personality measurement for personnel selection. *Journal of Organizational Behavior*, *17*, 609–626. doi:10.1002/(SICI)1099-1379(199611)17:6<609::AID-JOB1828>3.0.CO;2-K

Oostrom, J. K., De Vries, R. E., & de Wit, M. (2019). Development and validation of a HEXACO situational judgment test. *Human Performance*, *32*(1), 1–29. doi:10.1080/08959285.2018.1539856

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, USA: Lexington Books.

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance*, *10*, 85–97. doi:10.1207/s15327043hup1002_2

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. (2006). *Organizational citizenship behavior: It's nature, antecedents, and consequences*. Thousand Oaks, USA: Sage Publications.

Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predicors of organizational citizenship behavior. *Personnel Psychology*, *48*, 775–802. doi:10.1111/j.1744-6570.1995.tb01781.x

Ortner, T. (2004). On changing the position of items in personality questionnaires: Analysing effects of item sequence using IRT. *Psychology Science*, *46*, 466.

Oswald, F. L., & Hough, L. M. (2010). Personality and its assessment in organizations : Theoretical and empirical developments. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (pp. 153–184). Washington DC, USA: American Psychological Association. doi:10.1037/12170-005

Paunonen, S. V., & Ashton, M. C. (2001). Big Five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology*, *81*, 524–539. doi:10.1037//0022-3514.81.3.524

Paunonen, S. V., & Nicol, A. A. A. M. (2001). The personality hierarchy and the prediction of work behaviors. In B. W. Roberts & R. Hogan (Eds.), *Decade of behavior: Personality psychology in the workplace* (pp. 161–191). Washington DC, USA: American Psychological Association. doi:10.1037/10434-007

Pletzer, J. L. (2019). *HEXACO, CWB, and OCB*. Unpublished Raw Data.

Pletzer, J. L., Bentvelzen, M., Oostrom, J. K., & De Vries, R. E. (2019). A meta-analysis of the relations between personality and workplace deviance: Big Five versus HEXACO. *Journal of Vocational Behavior*, *112*, 369–383. doi:10.1016/j.jvb.2019.04.004

Pletzer, J. L., Oostrom, J. K., Bentvelzen, M., & De Vries, R. E. (2020). Comparing domain- and facet-level relations of the HEXACO personality model with workplace deviance: A meta-analysis. *Personality and Individual Differences*, *152*, 109539. doi:10.1016/j.paid.2019.109539

Pletzer, J. L., Oostrom, J. K., & Voelpel, S. C. (2015). *Social value orientation, HEXACO, and workplace deviance*. Unpublished Raw Data. *Https://Osf.Io/9dtju/?View_only=3bde4b96ff3846eeae0eb2e873f55f99*.

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual- and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology*, *94*, 122–141. doi:10.1037/a0013079

Podsakoff, P. M., & MacKenzie, S. B. (1997). Impact of organizational citizenship behavior on organizational performance: A review and suggestions for future research. *Human Performance*, *10*, 133–151. doi:10.1207/s15327043hup1002_5

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, *1*, 107–142. doi:10.1016/1048-9843(90)90009-7

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, *26*, 513–563. doi:10.1177/014920630002600307

Raja, U., Johns, G., & Ntalianis, F. (2004). The impact of personality on psychological contracts. *Academy of Management Journal*, *47*, 350–367. doi:10.5465/20159586

Ripley, A. M. (2019). *Examining the utility of the HEXACO-PI-R for predicting positive and negative indicators of police officer performance*. In Walden Dissertations and Doctoral Studies. scholarworks.waldenu.edu

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1–36. doi:10.18637/jss.v048.i02

Saucier, G. (2009). Recurrent personality dimensions in inclusive lexical studies: Indications for a big six structure. *Journal of Personality*, *77*, 1577–1614. doi:10.1111/j.1467-6494.2009.00593.x

Schriesheim, C. A., Kopelman, R. E., & Solomon, E. (1989). the effect of grouped versus randomized questionnaire format on scale reliability and validity: A three-study investigation. *Educational and Psychological Measurement*, *49*, 487–508. doi:10.1177/001316448904900301

Simonsohn, U., Nelson, L. D., & Simmons, J. P. (2014). p -curve and effect size. *Perspectives on Psychological Science*, *9*, 666–681. doi:10.1177/1745691614553988

Simonsohn, U., Simmons, J. P., & Nelson, L. D. (2015). Better p-curves: Making p-curve analysis more robust to errors, fraud, and ambitious p-hacking, a reply to Ulrich and Miller (2015). *Journal of Experimental Psychology. General*, *144*, 1146–1152. doi:10.1037/xge0000104

Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, *68*, 653–663. doi:10.1037/0021-9010.68.4.653

Szabo, P. Z., Czibor, A., Restás, P., & Bereczkei, T. (2018). "The darkest of all" The relationship between the dark triad traits and organizational citizenship behavior. *Personality and Individual Differences*, *134*, 352–256. doi:10.1016/j.paid.2018.04.026

Szabó, Z.P., & Simon, E. The significance (or lack thereof) of dark personality traits on workplace outcomes. Unpublished Raw Data..

Tanner-Smith, E. E., & Tipton, E. (2014). Robust variance estimation with dependent effect sizes: Practical considerations including a software tutorial in Stata and SPSS. *Research Synthesis Methods*, *5*, 13–30. doi:10.1002/jrsm.1091

Tett, R. P., Hundley, N. A., & Christiansen, N. D. (2017). Meta-analysis and the myth of generalizability. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *10*, 421–456. doi:10.1017/iop.2017.26

Tett, R. P., Steele, J. R., & Beauregard, R. S. (2003). Broad and narrow measures on both sides of the personality – Job performance relationship. *Journal of Organizational Behavior*, *24*, 335–356. doi:10.1002/job.191

Thielmann, I., Spadaro, G., & Balliet, D. (2020). Personality and prosocial behavior: A theoretical framework and meta-analysis. *Psychological Bulletin*, *146*, 30–90. doi:10.1037/bul0000217

Thompson, M., Carlson, D., Hunter, E., & Whitten, D. (2016). We all seek revenge: The role of Honesty-Humility in reactions to incivility. *Journal of Behavioral and Applied Management*, *17*, 50–66.

Tipton, E. (2015). Small sample adjustments for robust variance estimation with meta-regression. *Psychological Methods*, *20*, 375–393. doi:10.1037/met0000011

Tonidandel, S., & LeBreton, J. M. (2011). Relative importance analysis: A useful supplement to regression analysis. *Journal of Business and Psychology*, *26*(1), 1–9. doi:10.1007/s10869-010-9204-3

Van Dyne, L., & LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal*, *41*, 108–119. doi:10.5465/256902

Van Scotter, J. R., & Motowidlo, S. J. (1996). Interpersonal facilitation and job dedication as separate facets of contextual performance. *Journal of Applied Psychology*, *81*, 525–531. doi:10.1037/0021-9010.81.5.525

Viechtbauer, W. (2010). Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software*, *36*, 1–48. doi:10.1103/PhysRevB.91.121108

Viswesvaran, C., & Ones, D. S. (1995). Theory testing: Combining psychometric meta-analysis and structural equation modeling. *Personnel Psychology*, *48*, 865–885. doi:10.1111/j.1744-6570.1995.tb01784.x

Welbourne, T. M., Johnson, D. E., & Erez, A. (1998). The role-based performance scale: Validity analysis of a theory-based measure. *Academy of Management Journal*, *41*, 540–555. doi:10.2307/256941

Wendler, K., Liu, J., & Zettler, I. (2018). Honesty-Humility interacts with context perception in predicting task performance and organizational citizenship behavior. *Journal of Personnel Psychology*, *17*, 161–171. doi:10.1027/1866-5888/a000203

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management*, *17*, 601–617. doi:10.1177/014920639101700305

Wilson, A. (2016). *Is the HEXACO the new black? An examination of the predictive validity of NEO-PI-3 and the HEXACO-PI-R to determine if the six factor model of personality provides the most parsimonious assessment of an individual's employment suitability*. University of Wollong Thesis Collection, 1–271.

Wiltshire, J., Bourdage, J. S., & Lee, K. (2014). Honesty-Humility and perceptions of organizational politics in predicting workplace outcomes. *Journal of Business and Psychology*, *29*, 235–251. doi:10.1007/s10869-013-9310-0

Wingate, T. G., Lee, C. S., & Bourdage, J. S. (2019). Who helps and why? Contextualizing organizational citizenship behavior. *Canadian Journal of Behavioural Science*, *51*(3), 147–158. doi:10.1037/cbs0000125

Yoo, T. Y., & Kim, D. Y. (2004). The components of contextual performance in Korean work organizations. *Paper Presented at the 19th Annual Conference of the Society for Industrial and Organizational Psychology*, *Chicago, IL*.

Zettler, I., Thielmann, I., Hilbig, B. E., & Moshagen, M. (2020). The nomological net of the HEXACO model of personality: A large-scale meta-analytic investigation. *Perspectives on Psychological Science*, *15*, 723–760. doi:10.1177/1745691619895036