Emerald Insight

Journal of Organizational Effectiveness: People and Performance
Sifting the Big Five: examining the criterion-related validity of facets
Wendy Darr E. Kevin Kelloway

Article information:

Users who downloaded this article also downloaded:

(2016),"Reimagining overqualified human resources to promote organizational effectiveness and competitive advantage", Journal of Organizational Effectiveness: People and Performance, Vol. 3 Iss 1 pp. 23-42 http://dx.doi.org/10.1108/JOEPP-03-2015-0012

(2014),"Effects of personality traits (big five) on expatriates adjustment and job performance", Equality, Diversity and Inclusion: An International Journal, Vol. 33 Iss 1 pp. 73-96 http://dx.doi.org/10.1108/EDI-01-2013-0001

For Authors

If you would like to write for this, or any other Emerald publication, then please use our Emerald for Authors service information about how to choose which publication to write for and submission guidelines are available for all. Please visit www.emeraldinsight.com/authors for more information.

About Emerald www.emeraldinsight.com

Emerald is a global publisher linking research and practice to the benefit of society. The company manages a portfolio of more than 290 journals and over 2,350 books and book series volumes, as well as providing an extensive range of online products and additional customer resources and services.

Emerald is both COUNTER 4 and TRANSFER compliant. The organization is a partner of the Committee on Publication Ethics (COPE) and also works with Portico and the LOCKSS initiative for digital archive preservation.

2

Sifting the Big Five: examining the criterion-related validity of facets

Wendy Darr
*Directorate of Military Personnel Research and Analysis,
Department of National Defence, Ottawa, Canada, and*
E. Kevin Kelloway
Department of Psychology, Saint Mary's University, Halifax, Canada

Abstract

Purpose – The purpose of this paper is to review organizational research on the criterion-related validity of the Big Five model of personality with a view to examine the organizational utility of facet measures of personality.

Design/methodology/approach – A literature review of studies that use personality traits to predict organizational outcomes in three domains: performance (task and contextual), deviance, and interpersonal dynamics (leadership, team cohesion).

Findings – The authors identify 15 specific facets drawn from the Big Five model that appear to have demonstrated criterion-related validity in the prediction of organizational outcomes.

Practical implications – Results of the analysis suggest the utility of using facet-specific measures in organizational applications such as personnel selection.

Originality/value – Although there is a substantial literature speaking to the validity of the Big Five traits, the study identifies specific facets that may provide a basis for more focused use of personality variables in organizations. The work also provides the basis for further measurement development of occupationally relevant personality measures.

Keywords Personality, Task performance, Deviance, Big Five

Paper type Literature review

The "Big Five" model of personality has profoundly influenced the study of individual differences (Barrick *et al.*, 2001; Goldberg, 1993; Poropat, 2009). Research demonstrating the importance or usefulness of personality in understanding various organizational outcomes is plentiful (Barrick *et al.*, 2001; Salgado, 2002) with personality traits being empirically linked to diverse outcomes such as job performance (e.g. Salgado, 1997; Tett *et al.*, 1991), leadership (Judge *et al.*, 2002b), career success (Seibert and Kraimer, 2001), and turnover intent (Zimmermann, 2008).

Perhaps reflecting the belief that broad personality traits would provide higher predictive validity (Ones and Viswesvaran, 1996), most of this research has focused on the broad domains defining the Big Five. These broad domains incorporate a multitude of specific traits and are described as: Neuroticism, or emotional instability as opposed to adjustment; Extraversion, described by a need for stimulation, activity, assertiveness, and quantity and intensity of interpersonal interaction; Openness or intellect, represented by flexibility of thought and tolerance of, and sensitivity and openness to, feelings, experiences, and new ideas; Agreeableness, represented by a

compassionate rather than antagonistic interpersonal orientation; and Conscientiousness, or the degree of organization, persistence, and motivation in goal-directed behaviour (Bateman and Crant, 1993).

Despite the focus on broad traits, there is also evidence that narrower trait definitions can provide equivalent or higher predictive validity than do the broad traits (Ashton, 1998; Paunonen and Ashton, 2001). Thus, the purpose of this review was to determine the organizational utility of the facets that comprise the Big Five trait definitions. In doing so we do not intend to establish a competition between "broad" and "narrow" personality traits. Rather, our purpose was to ask which facets of personality were most useful in the prediction of a range of organizational outcomes.

We focus on three types of outcomes in our review. First, we focus on the relationships between personality facets and job performance (including task performance, job outcomes such as sales, and contextual performance). Second, we consider the relationship between personality facets and deviance also known as counter-productive work behaviours. Finally, we examine the relationship between personality and interpersonal dynamics (e.g. team cohesion, leadership) in the workplace. We suggest that these three individual outcomes (performance, deviance, and interpersonal behaviours) are, individually and in combination, most clearly linked to organizational effectiveness.

In this examination, we consider only meta-analytic sources for estimates of these relationships, focusing on observed (i.e. uncorrected) correlations greater than or equal to 0.10 (i.e. $r \geqslant 0.10$). This value was used for several reasons. First, given the generally low validities for measures of personality (Morgeson $et~al.$, 2007), we wanted to be as inclusive as possible in identifying traits with potential predictive usefulness, yet at the same time excluding ones with trivial criterion associations. A value of $r = 0.10$ represents a small effect which is lower than the average effect typically found in the field of organizational behaviour, but not small enough to be considered trivial (Cohen, 1992). In addition, the average operational validity for a single Big Five dimension as in Barrick $et~al.$'s (2001) meta-analysis was 0.12, suggesting that even if one were to correct $r = 0.10$ for a single artifact (e.g. criterion unreliability using a modest reliability value of 0.70), we would obtain an operational validity on par with the average. We reiterate that the goal of this examination was not to estimate the validity of each trait, but rather to improve an understanding of the facets comprising the Big Five traits and to identify a short list of potentially useful ones in predicting criteria of relevance to organizations. Table I summarizes our findings showing the empirical evidence linking 15 personality facets and these three types of outcomes.

Conscientiousness
Facet definitions
Conscientiousness has been meta-analytically synthesized to predict various work criteria such as job performance, training performance, teamwork, and counterproductive work behaviours across a variety of occupations (Barrick $et~al.$, 2001; Salgado, 2002). For this reason, it is considered to be the personality-based motivation variable in the field of industrial/organizational psychology (Barrick $et~al.$, 2001). A number of efforts have been dedicated to understanding the composition of this personality factor. Using an exploratory factor analysis of 36 facet scales of Conscientiousness, Roberts $et~al.$ (2005) identified a hierarchical structure comprising a two-factor solution at the highest level and six factors at the lowest level. At the highest level, all scales were found to load on two main factors. This two-factor structure has also been supported in other research (e.g.

Table I.
Criterion validity of
15 personality facets

Facet descriptions	Performance criteria	Deviant behaviours	Interpersonal behaviour
Conscientiousness			
Achievement	Overall job performance (Hough, 1992; Judge *et al.*, 2013)	Irresponsible/counterproductive behaviour (−) (Drasgow *et al.*, 2012; Hough, 1992)	Teamwork (Hough, 1992) Leadership effectiveness (Drasgow *et al.*, 2012)
Hard working; ambitious; confident; strives for success; adopts high standards in accomplishing goal; efficient; thorough; focused	Sales effectiveness (Hough, 1992) Creativity (Hough, 1992) Effort (Hough, 1992) Combat effectiveness (Hough, 1992) Task performance (Dudley *et al.*, 2006; Judge *et al.*, 2013) Job dedication (Dudley *et al.*, 2006) Contextual performance (Drasgow *et al.*, 2012; Judge *et al.*, 2013) Adaptability (Drasgow *et al.*, 2012) Fitness performance (Drasgow *et al.*, 2012)		
Dependability	Effort (Hough, 1992)	Irresponsible/counterproductive behaviour (−) (Drasgow *et al.*, 2012; Hough, 1992)	Teamwork (Hough, 1992) Interpersonal facilitation (Dudley *et al.*, 2006)
Reliable; self-disciplined; respectful of laws, authority and regulations; does not challenge authority; complies with rules customs and expectations	Job performance (Dudley *et al.*, 2006) Job dedication (Dudley *et al.*, 2006) Contextual performance (Drasgow *et al.*, 2012) Fitness performance (Drasgow *et al.*, 2012)	Turnover (−) (Drasgow *et al.*, 2012)	
Order	Task performance (Drasgow *et al.*, 2012; Dudley *et al.*, 2006)	−	−
Plans; well organized; careful; methodical	Contextual performance (Drasgow *et al.*, 2012; Judge *et al.*, 2013) Adaptability (Drasgow *et al.*, 2012)		
Cautiousness	Overall performance (Judge *et al.*, 2013)	−	−
Cautious (rather than impulsive); considers consequences/risks before acting; able to delay gratification; not easily distracted	Job performance (Judge *et al.*, 2013)		

(continued)

Facet descriptions	Performance criteria	Deviant behaviours	Interpersonal behaviour
Openness			
Intellectual efficiency	Training performance (Drasgow *et al.*, 2012)	–	–
Intelligent; analytical; quick at processing abstract information; interested in academics/knowledge			
Ingenuity	Adaptive performance (Woo *et al.*, 2014a)	–	Leadership (Woo *et al.*, 2014a)
Creative; inventive; good at manipulating ideas and concepts; can create something new from existing information			
Scientific curiosity	Training performance (Drasgow *et al.*, 2012)	Turnover (–) (Drasgow *et al.*, 2012)	–
Inquisitive; interested in learning about scientific principles; curious about the mechanics of how appliances/machinery work			
Tolerance	Adaptability (Drasgow *et al.*, 2012)	–	–
Broadminded; unbiased; interested in cultural events; open to differing views; endorses socially liberal values; comfortable with immersing oneself in new cultures/traditions	Overall performance (Judge *et al.*, 2013) Task performance (Judge *et al.*, 2013)		
Aesthetics	–	–	–
Appreciates art/music; artistic; interested in various art forms (music, painting, landscape, architecture)			
Depth	–	–	–
Introspective; enjoys reflecting on life and own behaviour; pursues activities aimed at self-improvement or self-actualization			
Agreeableness			
Compassion	Overall job performance (Judge *et al.*, 2013)	Counterproductivity (–) (Drasgow *et al.*, 2012)	–
Trusting; soft-hearted; generous; kind; warm; friendly; sympathetic	Contextual performance (Drasgow *et al.*, 2012; Judge *et al.*, 2013)		

(*continued*)

Table I.

Table I.

Facet descriptions	Performance criteria	Deviant behaviours	Interpersonal behaviour
Compliance Compliant; cooperative; withholds urge to speak/act in response to negative emotions; not argumentative; polite	Contextual performance (Judge et al., 2013)	–	–
Extraversion			
Dominance Assertive, directive, socially dominant, determined; forceful; natural leaders; confident; willing to take charge	Sales effectiveness (Hough, 1992) Creativity (Hough, 1992) Effort (Hough, 1992) Adaptive performance/adaptability (Drasgow et al., 2012; Huang et al., 2014) Overall performance (Judge et al., 2013) Task performance (Judge et al., 2013) Contextual performance (Drasgow et al., 2012; Judge et al., 2013) Training performance (Drasgow et al., 2012) Fitness performance (Drasgow et al., 2012)	–	Leadership effectiveness (Drasgow et al., 2012)
Sociability Outgoing; high-spirited; cheerful; entertaining; loud; craves excitement; prefers social interaction	Sales effectiveness (Hough, 1992) Creativity (–) (Hough, 1992) Contextual performance (Judge et al., 2013) Adaptability (Judge et al., 2013)	–	–
Emotional Stability			
Anxiety Prone to worry; tense; anxious; difficulty maintaining composure; vulnerable	(–) Task performance (Drasgow et al., 2012) (–) Contextual performance (Drasgow et al., 2012) (–) Adaptability (Drasgow et al., 2012)	(–) Counterproductive work behaviours (Grijalva, 2011)	–
Temperament Easygoing; in a good mood; less inclined to become irritable or annoyed; responds with composure rather than with anger or aggression	Contextual performance (Drasgow et al., 2012; Judge et al., 2013) Job performance (Grijalva, 2011)	(–) Turnover (–) Counterproductive work behaviours (Drasgow et al., 2012; Grijalva, 2011)	–
Self-concept Has positive sense of self; self-confident; strong self-esteem; resilient; secure; sees self as capable	Task performance (Grijalva, 2011) Composite performance (Grijalva, 2011) Job performance (Judge and Bono, 2001)	(–) Counterproductive work behaviours (Grijalva, 2011)	–

DeYoung *et al.*, 2007; Judge *et al.*, 2013). One factor captured proactive aspects of
Conscientiousness that are reflected in one's capacity to work hard and to do whatever it
takes to succeed at some goal. The label industriousness is often used to refer to this
factor. The other factor captured inhibitive aspects of Conscientiousness reflecting
self-control or behaving in a way that upholds personal and social standards. This factor
is often referred to as orderliness. At the sixth and lowest-order factor solution, the
proactive factors of Conscientiousness were industriousness (reflecting the tendency to be
hard working, ambitious, confident, and resourceful) and order (emphasizing the ability to
organize and plan activities). The lowest-order inhibitive factors were responsibility
(tendency to be of service to others, cooperative, and dependable), and virtue (associated
with adherence to standards of honesty, to act in accordance with accepted rules of good/
moral behaviour). The remaining two lowest-order facets were self-control (the tendency
to delay gratification, to be cautious, level headed, and patient) and traditionalism
(tendency to comply with rules, norms, expectations, and authority), both of which
reflected some proactive and inhibitive aspects of Conscientiousness.

Hough and Ones (2001) also classified Conscientiousness facet measures into six
categories labelled achievement, dependability, moralistic, cautious/impulse control,
order, and persistence, but did not provide descriptions of what these labels reflected.
The facets of achievement, dependability, cautious/impulse control, and order appeared
to be more frequently represented in personality measures compared to the moralistic
and persistence facets. In a meta-analytic investigation of Conscientiousness facets,
Dudley *et al.* (2006) focused on four facets that they believed were consistently identified
across efforts to understand the composition of Conscientiousness. These were
achievement, cautiousness, order, and dependability. Drawing upon the definitions
provided by Costa and McCrae (1994), Hough (1992), Stewart (1999), and Hough and Ones
(2001), they described achievement as the tendency to strive for success and to adopt
high standards in the accomplishment of goals, that is similar to the descriptions
provided by Roberts *et al.* (2005). Cautiousness was defined as the tendency to be
cautious, to consider all possibilities or the consequences of one's actions before acting,
and hence similar to self-control described in Roberts *et al.* (2005). Similar to Roberts
et al.'s descriptions, order was described as the tendency to plan and be well organized,
careful, and methodical. Finally, dependability was described as being reliable,
self-disciplined, and respectful of laws, authority, and regulations. This definition appears
to incorporate Roberts *et al.*'s description of traditionalism (labelled non-delinquency in
Drasgow *et al.*, 2012). In their meta-analysis of the relationship between these facets and
global Conscientiousness measures, Dudley *et al.* (2006) found that dependability was
most strongly related to global Conscientiousness ($r = 0.55$, $k = 16$), followed by order
($r = 0.47$, $k = 35$), achievement ($r = 0.43$, $k = 32$), and cautiousness ($r = 0.30$, $k = 28$).
These findings suggest that global Conscientiousness measures reflect dependability,
order, and achievement to a greater extent than they do cautiousness.

Criterion-related validity
There are a handful of studies that have empirically synthesized validity studies
examining work outcomes and the facets of Conscientiousness. Hough (1992), for
example, examined achievement (defined similarly as above) and dependability
(defined similar to Dudley *et al.*'s description of dependability, but also referred to being
well organized which is reflected in the order facet). With the exception of technical
proficiency and teamwork, achievement was related ($r \geqslant 0.10$) to most of the job
performance criteria examined by Hough (1992). These criteria included overall

job performance ($r = 0.19$, $k = 31$), irresponsible behaviour ($r = -0.19$, $k = 4$), sales effectiveness ($r = 0.27$, $k = 2$), creativity ($r = 0.14$, $k = 2$), teamwork ($r = 0.14$, $k = 3$), effort ($r = 0.21$, $k = 4$), and combat effectiveness ($r = 0.13$, $k = 1$). Dependability has associations ($r \geqslant 0.10$) with irresponsible behaviour ($r = -0.24$, $k = 69$), teamwork ($r = 0.17$, $k = 25$), and effort ($r = 0.14$, $k = 11$). Hough did not report confidence intervals (CIs), so the statistical significance of these effects in her examination cannot be determined. In a later synthesis of effects on four Conscientiousness facets by Dudley *et al.* (2006), achievement was found to have associations ($r \geqslant 0.10$ and non-zero CI) with task performance ($r = 0.13$, $k = 26$) and job dedication ($r = 0.20$, $k = 15$). Dependability, on the other hand, was related to overall job performance ($r = 0.13$, $k = 15$), job dedication ($r = 0.23$, $k = 7$), and counterproductive work behaviours ($r = -0.21$, $k = 16$). Order and cautiousness were not related ($r \leqslant 0.08$) to any of the criteria examined in Dudley *et al.* A hierarchical regression analysis with global Conscientiousness entered on the first step and all four facets on the second further confirmed the higher validities of two facets; the effect for achievement on task performance was strongest compared to the other facets, whereas dependability accounted for more variance in job dedication, interpersonal facilitation and counterproductive work behaviours compared to the other facets.

In a meta-analysis of military, police, and fire-fighter samples, Drasgow *et al.* (2012) examined the association between six Conscientiousness facets and a number of work criteria. Their findings showed that achievement was significantly related to contextual performance ($r = 0.21$, $k = 18$, non-zero CI), adaptability ($r = 0.19$, $k = 7$, non-zero CI), fitness performance ($r = 0.18$, $k = 20$, non-zero CI), leadership effectiveness ($r = 0.15$, $k = 20$, non-zero CI), and counterproductivity ($r = -0.13$, $k = 18$, non-zero CI). In their examination, contextual performance represented commendations and ratings of helping peers, working well with others, dedication, initiative, and work ethic. The order facet was significantly related to contextual performance ($r = 0.20$, $k = 14$, non-zero CI), task performance ($r = 0.16$, $k = 9$, non-zero CI), and adaptability ($r = 0.14$, $k = 5$, non-zero CI). Responsibility was significantly related only to leadership effectiveness ($r = 0.24$, $k = 3$, non-zero CI), whereas non-delinquency had significant associations with counterproductivity ($r = -0.23$, $k = 13$, non-zero CI), contextual performance ($r = 0.11$, $k = 21$, non-zero CI), turnover ($r = -0.12$, $k = 9$, non-zero CI), and fitness performance ($r = 0.13$, $k = 11$, non-zero CI). Self-control was not significantly related to any work criteria, whereas virtue was significantly related only to turnover ($r = -0.19$, $k = 1$, non-zero CI). Surprisingly, none of the facets were significantly related to training performance.

Judge *et al.* (2013) also conducted a facet-level meta-analysis focusing on overall, task, and contextual performance as criteria. They synthesized findings based on the facet nomenclature/categorization of the NEO PI-R, a gold standard measure of personality that is based on the five factor model. To facilitate a comparison across studies, findings herein are reported using Roberts *et al.*'s (2005) nomenclature and NEO PI-R facet loadings. All NEO facets that loaded onto the Roberts *et al.* industriousness/achievement (in Drasgow *et al.*, 2012) facet were found to be significantly related to overall ($0.18 \leqslant r \geqslant 0.11$), task ($0.15 \leqslant r \geqslant 0.12$), and contextual performance ($0.22 \leqslant r \geqslant 0.12$). The order facet (corresponding to the Roberts *et al.* order facet) was significantly associated only with contextual performance ($r = 0.14$, $k = 7$, non-zero CI), whereas the deliberation facet (corresponding to self-control in Roberts *et al.*) was significantly related to overall performance ($r = 0.11$, $k = 11$) and contextual performance ($r = 0.11$, $k = 3$).

Summary: Conscientiousness
The varied labels and number of facets utilized in the literature certainly poses a problem when consolidating findings. There appears to be adequate support for a four facet categorization that is used in Dudley *et al.* (2006), and also supported by Hough and Ones (2001) taxonomy that shows that Conscientiousness measures are more frequently represented by four facets. These facets are achievement, dependability, order, and cautiousness. The descriptors for these facets are based on Dudley *et al.* (2006), but they incorporate facet descriptions from Roberts *et al.* (2005). For example, dependability as described by Dudley *et al.* seems to capture Roberts *et al.*'s traditionalism. Hence, the description of traditionalism is incorporated in the description of dependability. The facet labels used in this paper are the same as those used in Dudley *et al.*, but could possibly be changed to be more reflective of the descriptors. For example, the label "compliance" may be used in lieu of "dependability" to more accurately reflect this facet's descriptors.

Openness to Experience
Facet definitions
In Barrick *et al.*'s (2001) meta-analysis, Openness to Experience was found to be most strongly related to training performance compared to the other work criteria that were examined. There has been a lot of disagreement about the make-up of this personality factor (Mount and Barrick, 1995). Some have defined it as capturing cultural aspects (e.g. broadminded, artistically sensitive), whereas others see it as presenting intellectual aspects (e.g. intelligent, original). A small, but emerging body of research suggests that at the highest level, Openness to Experience is a bi-dimensional construct, reflecting culture and intellect. For example, Griffin and Hesketh (2004) described Openness as comprising facets that reflect areas that are external or internal to the person. They explained that individuals scoring high on facets reflecting the external environment have a willingness to experience new activities and ideas, and have intellectual interests and values. Those scoring high on facets reflecting the internal environment, on the other hand, are said to be more receptive to imagination and artistic pursuits, and tend to consider emotions and inner feelings as important. Later research using multiple samples and a variety of personality scales provides further empirical support for two Openness factors, labelled intellect and aesthetics (e.g. DeYoung *et al.*, 2007; Judge *et al.*, 2013). Other researchers have described Openness in terms of openness to intellectual pursuits vs emotional ones (e.g. Colquitt *et al.*, 2002). While the former reflects an individual's tendency to be motivated by intellectual subject areas, the latter reflects an individual's tendency to thrive on emotional subject areas (Colquitt *et al.*, 2002). Still others have used labels such as objective-general (e.g. Gignac, 2005) or intelligence-culture (Digman and Takemoto-Chock, 1981) to describe the two Openness factors.

Openness is still considered to be a heterogeneous construct (Mussel *et al.*, 2011), and there is presently no consensus on the number and nature of Openness facets. Hough and Ones (2001) taxonomy lists six Openness facets that they labelled as complexity, culture/artistic, creativity/innovation, change/variety, curiosity/breadth, and intellect. However, personality measures were most frequently represented under only two facets, change/variety and intellect. Another examination (Drasgow *et al.*, 2012; Woo *et al.*, 2014b) involved a factor analysis of Openness scales from seven personality measures. Findings also provide support for six facets of Openness that were labelled as intellectual efficiency, ingenuity, curiosity, tolerance, aesthetics, and depth.

A comparison of these facets against those in Hough and Ones (2001), however, suggests a match between at least two facets; intellect is likely similar to Drasgow *et al.*'s (2012) intellectual efficiency, and reflects the tendency to be astute, knowledgeable, and intellectual. Creativity/innovation is likely to be similar to ingenuity, and reflects a tendency to be inventive, innovative, or creative. There might also be a similarity between curiosity/breadth and Drasgow *et al.*'s (2012) curiosity, and between complexity (Hough and Ones, 2001) and depth; however, there was only one personality measure within each of these two facets that was common across the two sources. A comparison of the measures that loaded on to Drasgow *et al.*'s (2012) aesthetics facet suggests a relevance of this facet to two of Hough and Ones (2001) facets (culture/artistic, change/variety). Aesthetics, as described by Drasgow *et al.* (2012), refers to the tendency to enjoy things or experiences involving art, music, or design.

In yet another attempt to understand Openness, Connelly *et al.* (2014) used a sorting technique to organize existing Openness scales into distinct categories; they identified 11 facets. But, through a meta-analysis of associations between measures representing these 11 facets and each of the personality factors in the FFM they found only four distinct facets that solely reflected Openness; the others were described as compound traits, because they were found to have strong relationships with factors other than Openness. Connelly *et al.* labelled the four unique Openness factors as openness to sensations, aesthetics, non-traditional, and introspection. Openness to sensations was described as savouring sensory (e.g. sound, light, smell) experiences, whereas aesthetics referred to being interested in artwork, natural beauty, and music. Non-traditional was described as favouring liberal values/views instead of conventional ones, and introspection was described as being interested in understanding the reasons behind one's own and others' behaviours and predicting behaviour. Connelly *et al.* (2014) indicated that these four facets, with the exception of introspection, were not previously identified by earlier factor-analytic examinations. However, a comparison of the measures loading on these facets with those in Drasgow *et al.*'s (2012) examination suggests that aesthetics and non-traditional may be conceptually similar to Drasgow *et al.*'s (2012) aesthetics and tolerance facets, respectively. Judge *et al.* (2013) also categorized varied personality scales on the basis of the six NEO PI-R Openness facets. A cursory comparison of the measures used in their categorization against those of Hough and Ones (2001) and Drasgow *et al.* (2012)/Woo *et al.* (2014b) suggests that the NEO facets of actions and aesthetics might be similar to aesthetics as described in Drasgow *et al.* (2012)/Woo *et al.* (2014b). The NEO ideas facet, on the other hand, might reflect Drasgow *et al.*'s (2012) intellectual efficiency, curiosity and ingenuity. The NEO values facet is likely to capture tolerance as described in Drasgow *et al.* (2012).

Criterion-related validity
In comparison to Conscientiousness, there is little synthesized information on the validity of Openness facets. In addition, differences in facet descriptions and labels make it even more difficult to compare findings. Even though Hough (1992) reports a synthesis of a scale called Intellectance, her definition suggests that this scale reflects the entire Openness factor instead of any one particular facet. In Drasgow *et al.*'s (2012) meta-analysis of military, police, and fire-fighter samples, the associations between Openness facets and criteria examined in their study were generally low ($r \leqslant 0.10$) and based on a handful of studies. Overall, there were more findings for intellectual

efficiency and tolerance compared to the other facets. On the other hand, ingenuity and depth were the least examined facets. The highest uncorrected correlations were observed for the facets of intellectual efficiency ($r = 0.14$, $k = 16$) and curiosity ($r = 0.13$, $k = 6$) with training performance. These associations had non-zero CIs that provide a test for the significance of the association. Curiosity was also related to turnover in the negative direction ($r = -0.14$, $k = 7$, non-zero CI). Tolerance had small associations with adaptability ($r = 0.14$, $k = 14$, non-zero CI) and contextual performance ($r = 0.11$, $k = 15$) but the 95 per cent CI suggested that the association could also be zero with the latter criterion.

In another meta-analysis by Woo *et al.* (2014a) of all available samples (it is not clear if these include the samples examined in Drasgow *et al.* (2012), the findings are not any better. The strongest uncorrected association was observed between ingenuity and adaptive performance ($r = 0.18$, $k = 6$, non-zero CI), followed by that between depth and overall performance that was based on a single sample ($r = 0.16$, $k = 1$). Ingenuity was related to task performance ($r = 0.15$, $k = 2$, non-zero CI), but based on two samples from a single study. The next strongest associations were found between task performance and intellectual efficiency ($r = 0.11$, $k = 14$) and intellect ($r = 0.11$, $k = 20$). Turnover was related to curiosity ($r = -0.12$, $k = 5$) and aesthetics ($r = 0.11$, $k = 9$), and leadership with ingenuity ($r = 0.11$, $k = 4$, non-zero CI). Surprisingly, facet associations with training performance, the criterion most strongly predicted by the general Openness factor, were lower ($r \leqslant 0.10$) with 95 per cent CIs that included zero and substantial variation in the association across samples.

Judge *et al.* (2013) also conducted a meta-analysis examining the validity of personality facets and the two higher-order facets within each FFM factor. They utilized the NEO facet descriptions/nomenclature to code/categorize personality facet measures. In examining overall job performance as the criterion, the facet of values ($r = 0.11$, $k = 14$) and fantasy ($r = -0.11$, $k = 7$) were found to have associations with non-zero CIs. Task performance was most strongly associated with values ($r = 0.12$, $k = 9$, non-zero CI), whereas contextual performance was not strongly related (i.e. $r \geqslant 0.10$) to any of the Openness facets.

Summary: Openness
As previously mentioned, there is little clarity on the number and nature of distinct Openness facets. Table II illustrates the overlap in facet descriptions across sources. Facets listed in the first three rows of the table are thought to reflect the intellect dimension of Openness, whereas the others reflect the culture/aesthetics dimension.

Drasgow *et al.* (2012) Woo *et al.* (2014b)	Hough and Ones (2001)	Connelly *et al.* (2014)	Judge *et al.* (2013)
Intellectual efficiency	Intellect	–	Ideas
Ingenuity	Creativity/innovation	–	Ideas
Scientific curiosity	Curiosity/breadth	–	Ideas
Tolerance	–	Non-traditional	Values
Aesthetics	Culture/artistic; change/variety; curiosity/breadth	Aesthetics	Actions; aesthetics
Depth	Complexity	–	–

Table II.
Facet categorizations for openness across four sources

Drasgow *et al.* (2012)/Woo *et al.*'s (2014b) categorizations is the only one that is based on empirical data; the others relied on subject matter expertise. The differences in categorizations across the sources are likely due to differences in the number and variety of Openness measures across sources, or a consideration of only pure Openness facets as in Connelly *et al.* (2014). Hence, it is difficult to choose one categorization over another. There is criterion-related validity evidence for only four of the six Openness facets. These are intellectual efficiency, ingenuity, scientific curiosity, and tolerance.

Agreeableness
Facet definitions
At the factor level, Agreeableness is conceptualized as an interpersonal dimension of personality (Wiggins, 1979), particularly concerned with the quality of social interactions (Costa *et al.*, 1991). Not surprisingly, this personality factor has been meta-analytically summarized to have the strongest association with teamwork (Barrick *et al.*, 2001). The early work of Wiggins (1979) and McCrae and Costa (1989) indicated that individuals high in Agreeableness are primarily motivated to maintain positive relations with others. Graziano and Eisenberg's (1997) review of the theoretical perspectives on Agreeableness also suggests that there may be at least two distinct, but related, bases for this motivation. The first pertains to the effortful control or self-regulation of emotions. For example, Ode and Robinson (2007) discussed links between Agreeableness and self-control of intrapsychic urges, negative emotionality, and anger. The second basis for agreeable individuals' motivation to maintain positive emotions pertains to their tendency to give to others (status or love). This tendency is also discussed in terms of social responsiveness or prosocial behaviour which is defined as "voluntary behavior intended to benefit another" (Graziano and Eisenberg, 1997, p. 808).

Recent examinations of the structure of Agreeableness provide preliminary insight into its make-up. In DeYoung *et al.*'s (2007) factor analysis of several facet scales, they uncovered a two-factor structure of Agreeableness that they described as reflecting an emotional affiliation with others (e.g. sympathetic, warm) and a cognitively reasoned consideration of others' needs (e.g. compliance, cooperation). This two factor structure was further supported in Judge *et al.*'s (2013) meta-analytic examination of facets organized around the NEO Agreeableness facets. Specifically, the NEO facets of altruism, tendermindedness, and trust loaded on the factor labelled compassion, and the facets of compliance, modesty, and straightforwardness loaded on the factor labelled politeness. In Drasgow *et al.*'s (2012) examination of the Agreeableness construct, they also found that Agreeableness split into two intermediate facets that they labelled tendermindedness and consideration. At the lowest order, they identified three facets: cooperation and selflessness (both of which reflected tendermindedness) and consideration. They described cooperation as capturing the tendency to be trusting, cooperative, kind, and uncritical, whereas selflessness was seen as capturing the tendency to be charitable, helpful, and generous. Consideration, on the other hand, was described as reflecting the tendency to be considerate, affectionate, and sensitive towards others.

In Hough and Ones (2001) taxonomy, Agreeableness is represented by only one facet, labelled nurturance, for which no description is provided. Included under this facet were the NEO PI-R's altruism and tender-mindedness facets and the caring and sensitive scales within the Hogan Personality Inventory. A comparison of measures across the aforementioned sources suggests that all three facets in Drasgow *et al.*'s (2012) analysis appear to reflect Hough and Ones nurturance. All three facets also capture aspects of DeYoung *et al.*'s factor reflecting emotional affiliation or compassion

in Judge *et al.* (2013). Hence, the distinction between the three lowest order facets found in Drasgow *et al.* (2012) is not clear. Although the factor reflecting compliance and cooperation (DeYoung *et al.*, 2007; Judge *et al.*, 2013) was not found in Drasgow *et al.* (2012), this factor is worth considering as it reflects one of the two motivational bases underlying Agreeableness, namely, the effortful control or self-regulation of emotions. Note that Drasgow *et al.* (2012) included facet measures of Extraversion, Agreeableness, and Emotional Stability in their examination of Agreeableness that might have influenced their results. Given the above, there is presently evidence to suggest the presence of two distinct facets of Agreeableness that may be labelled compassion and compliance in this report.

Criterion-related validity
There is limited synthesized evidence for the validity of Agreeableness facets. Hough (1992) reports validities for the global Agreeableness factor rather than the facets. Schneider and Waters (2006) report an association between the Occupational Personality Questionnaire's (OPQ) caring subscale (most likely to reflect compassion/cooperation) and interpersonal sensitivity based on Robertson and Kinder's (1993) meta-analysis on the OPQ. But, the effect was negligible ($r = 0.06$). In Drasgow *et al.*'s (2012) meta-analysis involving military, police, and fire-fighter samples, the cooperation facet was the only one found to have significant associations ($r \geqslant 0.10$) with contextual performance ($r = 0.13$, $k = 6$, non-zero CI) and counterproductivity ($r = -0.18$, $k = 10$). In Judge *et al.*'s (2013) examination of the NEO facets and the two Agreeableness facets (compassion and politeness) found in DeYoung *et al.* (2007), they found that the compassion facet was associated significantly with overall job performance ($r = 0.12$, $k = 33$, non-zero CI) and contextual performance ($r = 0.11$, $k = 16$, non-zero CI). Politeness, on the other hand, was significantly associated with contextual performance ($r = 0.12$, $k = 13$, non-zero CI). Among the NEO facets that loaded on compassion, only tendermindedness was significantly related to overall job performance ($r = 0.14$, $k = 21$, non-zero CI). And, among the NEO facets that loaded on politeness, it was compliance that was significantly associated with contextual performance ($r = 0.14$, $k = 12$, non-zero CI). Although trust was also related to contextual performance ($r = 0.11$, $k = 16$), this association was not significant.

Summary: Agreeableness
There is some construct and criterion-related validity evidence supporting the consideration of only two Agreeableness facets at this time, each reflecting one of the two motivational bases of this construct. Labelled compassion and compliance, the former is thought to reflect the tendency to be trusting, soft-hearted, generous, kind, warm, friendly, and sympathetic. The latter might be seen as reflecting the tendency to be compliant, cooperative, and to withhold urges to act or speak in a manner that would offend another.

Extraversion
Facet definitions
Extraversion is also represented along with Agreeableness within Wiggins' two-dimensional circumplex of interpersonal traits (McCrae and Costa, 1989; Wiggins, 1979). Despite a general agreement that Extraversion is concerned with social situations, there is no consensus on the central underlying feature of Extraversion. Some (e.g. Lucas and Diener, 2001) have argued that the pleasantness of the social situation rather than the

social situation itself is what is rewarding to extraverts. Others (e.g. Ashton *et al.*, 2002) have suggested that the tendency to draw attention to oneself in social situations is central to Extraversion. Not surprisingly, there is no solid understanding of the facet make-up of Extraversion. Watson and Clark's (1997) hierarchical model of Extraversion presents three dimensions of Extraversion: affiliation (e.g. warm), ascendance (e.g. assertive), and venturesome (i.e. seeking excitement). Three dimensions (dominance, sociability, and activity) are also present in Hough and Ones (2001) taxonomy of Extraversion facets. Depue and Collins (1999), on the other hand, described the main dimensions of Extraversion as agency (e.g. social dominance, assertiveness), affiliation (e.g. interpersonal closeness, warmth), and impulsivity. Impulsivity, although initially indicated in Eysenck's (1967) depiction of Extraversion, has not been typically included in the general measurement of Extraversion. Across these three descriptions, Wiggins' interpersonal concepts of love and status are easily evident in affiliation/ sociability and dominance/ascendance/agency, respectively.

In DeYoung *et al.*'s (2007) factor analysis of Extraversion facet scales of two personality measures (the NEO and AB5C[1]), they also found two main factors that they labelled, enthusiasm and assertiveness. This two-factor structure was further confirmed in Judge *et al.*'s (2013) examination of a larger number of personality measures. However, there were some differences in the NEO Extraversion facet loadings across these two studies. In Drasgow *et al.*'s (2012) factor-analytic examination, they identified three lowest order facets that they labelled, dominance/activity, sociability, and attention seeking. Activity was later separated and a fourth facet, called physical activity, was created. A comparison of the loadings of common personality scales used across these sources and those used in Lucas *et al.* (2000) suggests the presence of two distinct Extraversion facets. The first one is reflected by the labels, ascendance (Watson and Clark, 1997), agency (Depue and Collins, 1999), dominance (Drasgow *et al.*, 2012), or assertiveness (DeYoung *et al.*, 2007; Judge *et al.*, 2013). This facet captures the assertive, directive, socially dominant nature of extraverts. Another facet is reflected by the terms attention seeking (Drasgow *et al.*, 2012) or venturesomeness (Watson and Clark, 1997). This facet captures the tendency of extraverts to be outgoing, to seek/create social excitement, to be socially expressive in nature compared to their introverted counterparts. As defined, this facet includes Judge *et al.*'s (2013) enthusiasm and Drasgow *et al.*'s (2012) sociability. A possible third facet that Watson and Clark (1997) refer to as affiliation pertains to interpersonal closeness, positive emotions, and warmth. These characteristics tend to be better represented within the Agreeableness domain. In fact, Drasgow *et al.* (2012) found that the NEO Extraversion facets of warmth and positive emotions, analysed along with Agreeableness and Neuroticism facets, tended to load more strongly on a factor they interpreted as reflecting the Agreeableness domain.

In summary, the findings discussed above provide evidence for the presence of two distinct Extraversion facets labelled dominance and sociability. These labels are also used in Hough and Ones (2001) taxonomy. Dominance is defined as the tendency to engage in behaviours that are assertive, directive, and socially dominant in nature, whereas sociability refers to the tendency to be outgoing, enthusiastic, socially expressive, and to seek/create social excitement. Although Drasgow *et al.*'s findings suggest the presence of a facet labelled attention seeking and described as the tendency to engage in behaviours that attract social attention, it is difficult to isolate this facet as distinct from dominance or sociability, as attention seeking tendencies may be reflected within dominance and sociability. Indeed, Ashton *et al.* (2002) found attention seeking or social attention to be a central feature or underlying basis of the Extraversion factor.

A separate measure of social attention correlated strongly and equally with all three facets of Extraversion examined in their study (affiliation, ascendance, and venturesomeness).

Criterion-related validity
The findings presented here focus on the two Extraversion facets described in the preceding section: dominance and sociability. In Hough's (1992) synthesis of validity evidence, findings for potency and affiliation are relevant as they correspond to the definitions of dominance and sociability, respectively. Potency was found to be related to sales effectiveness ($r = 0.25$, $k = 11$), creativity ($r = 0.21$, $k = 39$), and effort ($r = 0.17$, $k = 16$). Findings for affiliation were based only on a couple of studies, and showed it to be negatively related to creativity ($r = -0.25$, $k = 2$) and positively related to sales effectiveness ($r = 0.19$, $k = 1$). Hough did not report CIs for these estimates; hence, the statistical significance of these effects cannot be determined. In Huang *et al.*'s (2014) meta-analysis of the HPI scales, ambition (relevant to dominance based on Judge *et al.*'s classification) was found to have a small correlation ($r = 0.11$, $k = 71$, non-zero CI) with adaptive performance. Judge *et al.*'s meta-analytic findings revealed assertiveness (also relevant to dominance) to be related to overall performance ($r = 0.13$, $k = 48$, non-zero CI), task performance ($r = 0.10$, $k = 41$, non-zero CI), and contextual performance ($r = 0.11$, $k = 26$, non-zero CI). Enthusiasm (relevant to sociability) was related only to contextual performance ($r = 0.16$, $k = 26$, non-zero CI). Focusing on military and para-military samples, Drasgow *et al.* (2012) found significant effects (i.e. non-zero CIs for $r \geqslant 0.10$) for dominance with contextual performance ($r = 0.13$, $k = 15$), training performance ($r = 0.11$, $k = 30$), leadership effectiveness ($r = 0.11$, $k = 17$), adaptability ($r = 0.15$, $k = 7$), and fitness performance ($r = 0.16$, $k = 9$). There were fewer studies examining sociability; it was found to be significantly related only to adaptability ($r = 0.15$, $k = 1$).

Summary: Extraversion
As reviewed above, there is evidence for two distinct Extraversion facets labelled dominance and sociability. Dominance refers to the tendency to engage in behaviours that are assertive, directive, and socially dominant in nature, whereas sociability refers to the tendency to be outgoing, enthusiastic, socially expressive, and to seek/create social excitement.

Emotional Stability[2]
Facet definitions
Slaughter and Kausel (2009) discussed the varied conceptualizations of Emotional Stability in the literature, highlighting three that have received the most attention. These are Watson and Clark's (1984) tripartite view of Emotional Stability as comprising three factors: specific anxiety, specific depression, and a non-specific factor that includes symptoms of both anxiety and depression. This view has its roots in clinical anxiety and depression. Another conceptualization is Costa and McCrae's (1995) multi-faceted view that grew of out of 40 years of empirical trait research. In this view, Emotional Stability comprises six facets: anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability. The third conceptualization of Emotional Stability views it as part of a higher order construct called core self-evaluations or positive self-concept (Judge *et al.*, 2002b). Although Slaughter and Kausel (2009) focus on Costa and McCrae's multi-faceted view of Emotional Stability in

the rest of their paper, they summarized that there is little conclusive evidence about the exact number of facets comprising Emotional Stability.

Indeed, some have failed to replicate Costa and McCrae's six facets, finding up to 10 viable facets instead (e.g. Endler *et al.*, 1997). Of these ten, only three (impulsivity, angry hostility, and anxiety) corresponded with the Costa and McCrae facets. Others like Judge *et al.* (2002a) argue that existing measures of Emotional Stability are too narrow in their measurement of the construct, and tend to focus primarily on anxiety. They suggested that this factor should be measured more broadly to include trait anxiety and aspects of positive self-concept. In Hough and Ones (2001) personality taxonomy, they organized existing measures of Emotional Stability into three facets labelled anxiety, self-esteem, and even tempered. The first two facets appear to reflect Judge *et al*'s (2002a) trait anxiety and positive self-concept, respectively, while the third refers to general temperament (e.g. being calm, patient).

DeYoung *et al.*'s (2007) factor-analysis of two major personality inventories yielded two intermediate Emotional Stability factors labelled volatility (reflecting irritability, difficulty controlling emotions) and withdrawal (reflecting negative affect, anxiety). Given that the NEO facets of anxiety, depression, self-consciousness, and vulnerability loaded on the withdrawal factor (Judge *et al.*, 2013), it is plausible that at the next lower order, this factor could potentially be divided to reflect anxiety/depression and aspects of positive self-evaluation (e.g. self-confidence). This is similar to what Drasgow *et al.* (2012) found in their factor-analysis of seven personality measures. Of their two intermediate factors (labelled positive/negative affect and even tempered), positive/negative affect split into two lower order facets labelled optimism and adjustment. A comparison of the measures/loadings in Drasgow *et al.* (2012) and Hough and Ones (2001) taxonomy suggests that adjustment (Drasgow *et al.*, 2012) and anxiety (Hough and Ones, 2001) are likely similar. There is also some correspondence between the facets labelled even tempered in both sources. However, there appears to be little or no overlap in the facets identified as optimism (Drasgow *et al.*, 2012) and self-esteem (Hough and Ones, 2001). Drasgow *et al*'s (2012) optimism contains measures of well-being, happiness, and depression, whereas Hough and Ones (2001) self-esteem contains measures of self-esteem, self-confidence, and self-assurance, that are more reflective of Judge *et al*'s (2002a) positive self-concept. In another related meta-analysis by Grijalva (2011) who utilized the Drasgow *et al.* (2012) three-facet categorization, this facet was re-labelled well-being and it included additional measures such as self-confidence (Personal Characteristics Inventory) and optimism (OPQ), making the facet more reflective of Judge *et al*'s (2002a) positive self-concept.

Hence, all available evidence suggests three aspects of Emotional Stability that may form the basis for each of its three facets. These may be labelled anxiety, temperament, and self-concept. Based on descriptions provided in the sources cited above, anxiety is described as a pervasive susceptibility to be worried, nervous, tense, and anxious. Temperament refers to the tendency to maintain composure, being less inclined to become irritable, annoyed or respond with anger or aggression. Self-concept is seen as the tendency to see oneself as capable, as having control, and a positive sense of self. Such individuals are generally self-confident and have strong self-esteem.

Criterion-related validity
The focus in this section is on estimating the validity of three facets described in the preceding paragraph: anxiety, self-concept, and temperament. In Drasgow *et al*'s (2012) meta-analysis of findings from military and para-military samples, adjustment (similar to anxiety defined above) was found to have correlations ($r \geqslant 0.10$) with non-zero 95 per cent

CIs with outcomes such as task performance ($r = 0.10$, $k = 12$), contextual performance ($r = 0.17$, $k = 3$), and adaptability ($r = 0.23$, $k = 2$). Even tempered (corresponds with temperament described above) was related to contextual performance ($r = 0.20$, $k = 3$, non-zero CI), counterproductivity ($r = -0.10$, $k = 4$, non-zero CI), turnover ($r = -0.11$, $k = 2$, non-zero CI), and adaptability ($r = 0.12$, $k = 2$, non-zero CI). Drasgow *et al.*'s (2012) findings for optimism (capturing well-being, happiness, and depression) are not presented here as their conceptualization of this facet does not correspond with the description of self-concept used in the present paper. In Grijalva's (2011) meta-analytic examination, the no anxiety facet (relevant to anxiety in the present paper) was significantly negatively associated only with counter productive work behaviours ($r = -0.15$, $k = 4$, non-zero CI). Even-temperedness (similar to temperament in the present paper) was significantly negatively related to counterproductive work behaviours ($r = -0.22$, $k = 7$, non-zero CI) and positively with composite job performance ($r = 0.13$, $k = 20$, non-zero CI). Finally, well-being (corresponds to some degree with self-concept) was related significantly to task performance ($r = 0.12$, $k = 5$, non-zero CI), counter-productive work behaviours ($r = -0.21$, $k = 3$, non-zero CI), and composite job performance ($r = 0.12$, $k = 30$, non-zero CI). In Judge and Bono's (2001) examination of the positive self-concept construct (relevant to self-concept in this paper), they reported significant meta-analytic correlations in the range of 0.14-0.19 ($k = 10$-40) between job performance and self-esteem, generalized self-efficacy, and internal locus of control. Of the Neuroticism facets examined in Judge *et al.* (2013), volatility appears to correspond most closely with temperament in the present paper. Volatility was significantly related to contextual performance ($r = -0.16$, $k = 13$, non-zero CI). Adjustment, examined in Huang *et al.*'s (2014) meta-analysis on adaptive performance, is considered to be a global measure of Emotional Stability (Hough and Ones, 2001); hence, those findings are not reported here.

Summary: Emotional Stability
As indicated earlier, there is evidence for the presence of three facets. In this paper, these are labelled anxiety, temperament, and self-concept. Anxiety is similar to trait anxiety that is reflected in most global measures of Emotional Stability; it captures the tendency to be worried, nervous, tense, and anxious. Temperament reflects the tendency to be generally in a good mood, to be less inclined to become irritable, annoyed or respond with anger or aggression. Self-concept is seen as the tendency to see oneself as capable and have a positive sense of self. Such individuals are generally self-confident and have strong self-esteem. These facets are described in a way to minimize overlap in their nature to ensure their distinctness from each other.

Summary and conclusion
Our review identified a total of 15 facets: four for Conscientiousness, four for Openness, two for Agreeableness, two within Extraversion, and three for Emotional Stability that have criterion related validity in the prediction of organizationally relevant outcomes. These 15 facets are, in the aggregate related to job performance, organizational deviance, and interpersonal behaviours in the workforce. By far, the majority of the empirical evidence supports the criterion related validity of facets as predictors of job performance with less evidence for the prediction of deviance and even less predicting team and leadership behaviours. We suggest that these data provide some guidance for the identification of personality facets and their measurement, depending on the criteria of

interest to an organization. Conceptually and pragmatically we believe that this is a useful approach.

Conceptually, organizations are rarely interested in predicting a single criterion (e.g. job performance). Rather, organizations are interested not only in selecting high performers, but also those who will integrate well within a team, as well as those who would act with integrity. Hence, the information in this paper allows for a criterion-centric approach in the identification of facets that is essential to ensuring the utility of any resulting personality measure (Bartram, 2005).

Pragmatically, advances in testing technology are prompting organizations to move towards the development of computer adaptive assessments in the evaluation of personality. For example, the US Army recently developed the Tailored Adaptive Personality Assessment System which assesses approximately 15 facets. Given the large number of test items required per facet in the development of such measures (Embretson and Reise, 2000) this review presents a good starting point for organizations embarking on such a task by facilitating the identification of those facets most likely to predict criteria of interest to an organization.

This review is also useful in the development of compound personality scales, a rising trend in the field. Rather than have separate inventories to measure different aspects of personality, purposefully built compound measures contain items reflecting various personality facets which can be combined to yield a single composite score (O'Neill and Paunonen, 2013). For example, if one were interested in predicting leadership effectiveness, the information in Table I could be used to inform the identification of relevant facets. For example, the facets of achievement (Conscientiousness), ingenuity (Openness), and dominance (Extraversion) may be combined to form a compound personality measure that would likely be most useful in the prediction of leadership effectiveness.

Barrick *et al.* (2001) advocated the need for a taxonomic framework to allow for the systematic accumulation of personality research. This review is a step towards that goal. Although various frameworks currently do exist (e.g. Hough and Ones, 2001), they do not include the most recent personality research and resulting empirical evidence for the construct and criterion-related validity of personality facets within the Big Five structure. By conducting a systematic review of the empirical literature, this paper advances personality research by presenting a snapshot of those personality facets and criteria that could benefit from further research.

Notes

1. A measure of personality based on Hofstee *et al.*'s (1992) Abridged Big Five Dimensional Circumplex model of personality.

2. Also referred to as Neuroticism in the literature; Emotional Stability and Neuroticism are terms used to refer to pole opposites of the same factor.

References

Ashton, M.C. (1998), "Personality and job performance: the importance of narrow traits", *Journal of Organizational Behavior*, Vol. 19 No. 3, pp. 289-303.

Ashton, M.C., Lee, K. and Paunonen, S.V. (2002), "What is the central feature of extraversion?: social attention versus reward sensitivity", *Journal of Personality and Social Psychology*, Vol. 83 No. 1, pp. 245-251.

Barrick, M.R., Mount, M.K. and Judge, T.A. (2001), "Personality and performance at the beginning of the new millennium: what do we know and where do we go next?", *International Journal of Selection and Assessment*, Vol. 9 No. 1, pp. 9-30.

Bartram, D. (2005), "The great eight competencies: a criterion-centric approach to validation", *Journal of Applied Psychology*, Vol. 90 No. 6, pp. 1185-1203.

Bateman, T.S. and Crant, J.M. (1993), "The proactive component of organizational behaviour: a measure and correlates", *Journal of Organizational Behaviour*, Vol. 14 No. 2, pp. 103-118.

Cohen, J. (1992), "A power primer", *Psychological Bulletin*, Vol. 112, pp. 155-159.

Colquitt, J.A., Hollenbeck, J.R., Ilgen, D.R., LePine, J.A. and Sheppard, L. (2002), "Computer-assisted communication and team decision-making performance: the moderating effect of openness to experience", *Journal of Applied Psychology*, Vol. 87 No. 2, pp. 402-410.

Connelly, B.S., Ones, D.S., Davies, S.E. and Birkland, A. (2014), "Opening up openness: a theoretical sort following critical incidents methodology and a meta-analytic investigation of the trait family measures", *Journal of Personality Assessment*, Vol. 96 No. 1, pp. 17-28.

Costa, P.T. and McCrae, R.R. (1994), *Revised NEO Personality Inventory (NEO-PI-R) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual*, Psychological Assessment Resources, Odessa, FL.

Costa, P.T. and McCrae, R.R. (1995), "Domains and facets: hierarchical personality assessment using the revised NEO personality inventory", *Journal of Personality Assessment*, Vol. 64 No. 1, pp. 21-50.

Costa, P.T., McCrae, R.R. and Dye, D.A. (1991), "Facet scales for agreeableness and conscientiousness: a revision of the NEO personality inventory", *Personality and Individual Differences*, Vol. 12 No. 9, pp. 887-898.

Depue, R.A. and Collins, P.F. (1999), "Neurobiology of the structure of personality: dopamine, facilitation of incentive motivation and extraversion", *Behavioral and Brain Sciences*, Vol. 22 No. 3, pp. 491-569.

DeYoung, C.G., Quilty, L.C. and Peterson, J.B. (2007), "Between facets and domains: 10 aspects of the Big Five", *Journal of Personality and Social Psychology*, Vol. 93 No. 5, pp. 880-896.

Digman, J.M. and Takemoto-Chock, N.K. (1981), "Factors in the natural language of personality: re-analysis, comparison, and interpretation of six major studies", *Multivariate Behavioral Research*, Vol. 16 No. 2, pp. 149-170.

Drasgow, F., Stark, S., Chernyshenko, O.S., Nye, C.D., Hulin, C.L. and White, L.A. (2012), "Development of the Tailored Adaptive Personality Assessment System (TAPAS) to support army selection and classification decisions", Technical Report No. 1311, US Army Research Institute, Fort Belvoir, VA.

Dudley, N.M., Orvis, K.A., Lebiecki, J.E. and Cortina, J.M. (2006), "A meta-analytic investigation of conscientiousness in the prediction of job performance: examining the intercorrelations and the incremental validity of narrow traits", *Journal of Applied Psychology*, Vol. 91 No. 1, pp. 40-57.

Embretson, S.E. and Reise, S.P. (2000), *Item Response Theory for Psychologists*, Lawrence Erlbaum Associates Publishers, Mahwah, NJ.

Endler, N.S., Rutherford, A. and Denisoff, E. (1997), "Neuroticism: how does one slice the PI(e)?", *European Journal of Personality*, Vol. 11 No. 2, pp. 133-145.

Eysenck, H.J. (1967), *The Biological Basis of Personality*, Charles C Thomas, Springfield, IL.

Gignac, G.E. (2005), "Openness to experience, general intelligence and crystallized intelligence: a methodological extension", *Intelligence*, Vol. 33 No. 2, pp. 161-167.

Goldberg, L.R. (1993), "The structure of phenotypic personality traits", *American Psychologist*, Vol. 48 No. 1, pp. 26-34.

Graziano, W.G. and Eisenberg, N. (1997), "Agreeableness: a dimension of personality", in Hogan, R., Johnson, J. and Briggs, S. (Eds), *Handbook of Personality Psychology*, Academic Press, New York, NY, pp. 795-817.

Griffin, B. and Hesketh, B. (2004), "Why openness to experience is not a good predictor of job performance", *International Journal of Selection and Assessment*, Vol. 12 No. 3, pp. 243-251.

Grijalva, E.J. (2011), "Is facet-level emotional stability useful in predicting job performance? A meta-analytic investigation of facet-level emotional stability", unpublished doctoral dissertation, University of Illinois at Urbana-Champaign, Urbana, IL.

Hofstee, W.K.B., de Raad, B. and Goldberg, L.R. (1992), "Integration of the Big Five and circumplex approaches to trait structure", *Journal of Personality and Social Psychology*, Vol. 63, pp. 146-163.

Hough, L.M. (1992), "The 'Big Five' personality variables – construct confusion: description versus prediction", *Human Performance*, Vol. 5 No. 1, pp. 139-155.

Hough, L.M. and Ones, D.S. (2001), "The structure, measurement, validity, and use of personality variables in industrial, work, and organizational psychology", in Anderson, A.R., Ones, D.S., Sinangil, H.K. and Viswesvaran, C. (Eds), *International Handbook of Work and Organizational Psychology*, Sage, Thousand Oaks, CA, pp. 233-377.

Huang, J.L., Ryan, A., Zabel, K.L. and Palmer, A. (2014), "Personality and adaptive performance at work: a meta-analytic investigation", *Journal of Applied Psychology*, Vol. 99 No. 1, pp. 162-179.

Judge, T.A. and Bono, J.E. (2001), "Relationship of core self-evaluations traits self-esteem, generalized self-efficacy, locus of control, and emotional stability with job satisfaction and job performance: a meta-analysis", *Journal of Applied Psychology*, Vol. 86 No. 1, pp. 80-92.

Judge, T.A., Bono, J.E., Ilies, R. and Gerhardt, M.W. (2002a), "Personality and leadership: a qualitative and quantitative review", *Journal of Applied Psychology*, Vol. 87 No. 4, pp. 765-780.

Judge, T.A., Erez, A., Bono, J.E. and Thoresen, C.J. (2002b), "Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct?", *Journal of Personality and Social Psychology*, Vol. 83 No. 3, pp. 693-710.

Judge, T.A., Rodell, J.B., Klinger, R.L., Simon, L.S. and 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*, Vol. 98 No. 6, pp. 875-925.

Lucas, R.E. and Diener, E. (2001), "Understanding extraverts' enjoyment of social situations: the importance of pleasantness", *Journal of Personality and Social Psychology*, Vol. 81 No. 2, pp. 343-356.

Lucas, R.E., Diener, E., Grob, A., Suh, E.M. and Shao, L. (2000), "Cross-cultural evidence for the fundamental features of extraversion", *Journal of Personality and Social Psychology*, Vol. 79 No. 3, pp. 452-468. doi: 10.1037//0022-3514.79.3.452.

McCrae, R.R. and Costa, P.T. Jr (1989), "The structure of interpersonal traits: Wiggins' circumplex and the five factor model", *Journal of Personality and Social Psychology*, Vol. 56 No. 4, pp. 586-595.

Morgeson, F.P., Campion, M.A., Dipboye, R.L., Hollenbeck, J.R., Murphy, K. and Schmitt, N. (2007), "Reconsidering the use of personality tests in personnel selection contexts", *Personnel Psychology*, Vol. 60 No. 3, pp. 683-729.

Mount, M.K. and Barrick, M.R. (1995), "The Big Five personality dimensions: implications for research and practice in human resource management", in Rowland, K.M. and Ferris, G. (Eds), *Research in Personnel and Human Resources Management*, Vol. 13, JAI Press, Greenwich CT, pp. 153-200.

Mussel, P., Winter, C., Gelléri, P. and Schuler, H. (2011), "Explicating the openness to experience construct and its subdimensions and facets in a work setting", *International Journal of Selection and Assessment*, Vol. 19 No. 2, pp. 145-155.

Ode, S. and Robinson, M.D. (2007), "Agreeableness and the self-regulation of negative affect: findings involving the neuroticism/somatic distress relationship", *Personality and Individual Differences*, Vol. 43 No. 8, pp. 2137-2148.

O'Neill, T.A. and Paunonen, S.V. (2013), "Breadth in personality assessment: implications for understanding and prediction of work behavior", in Christiansen, N.D. and Tett, R.P. (Eds), *Handbook of Personality At Work*, Routledge, New York, NY, pp. 299-332.

Ones, D.S. and Viswesvaran, C. (1996), "Bandwidth–fidelity dilemma in personality measurement for personnel selection", *Journal of Organizational Behavior*, Vol. 17 No. 6, pp. 609-626.

Paunonen, S.V. and Ashton, M.C. (2001), "Big Five factors and facets and the prediction of behavior", *Journal of Personality and Social Psychology*, Vol. 81 No. 3, pp. 524-539.

Poropat, A.E. (2009), "A meta-analysis of the five-factor model of personality and academic performance", *Psychological Bulletin*, Vol. 135 No. 2, pp. 322-338.

Roberts, B.W., Chernyshenko, O.S., Stark, S. and Goldberg, L.R. (2005), "The structure of conscientiousness: an empirical investigation based on seven major personality questionnaires", *Personnel Psychology*, Vol. 58 No. 1, pp. 103-139.

Robertson, I.T. and Kinder, A. (1993), "Personality and job competencies: the criterion-related validity of some personality variables", *Journal of Occupational and Organizational Psychology*, Vol. 66 No. 3, pp. 225-244.

Salgado, J.F. (1997), "The five-factor model of personality and job performance in the European Community", *Journal of Applied Psychology*, Vol. 82 No. 1, pp. 30-43.

Salgado, J.F. (2002), "The Big Five personality dimensions and counterproductive behaviours", *International Journal of Selection and Assessment*, Vol. 10 No. 1, pp. 117-125.

Schneider, R. and Waters, S. (2006), "Identification and literature-based evaluation of potential NCAPS constructs", in Houston, J.S., Borman, W.C., Farmer, W.F. and Bearden, R.M. (Eds), *Development of the Navy Computer Adaptive Personality Scales (NCAPS) (NPRST-TR-06-2)*, Navy Personnel Research, Studies, and Technology Division, Millington, TN, pp. 2-1-2-54.

Seibert, S.E. and Kraimer, M.L. (2001), "The Five-Factor Model of personality and career success", *Journal of Vocational Behavior*, Vol. 58 No. 1, pp. 1-21.

Slaughter, J.E. and Kausel, E.E. (2009), "The neurotic employee: theoretical analysis of the influence of narrow facets of neuroticism on cognitive, social, and behavioral processes relevant to job performance", in Buckley, M.R., Halbesleben, J.R.B. and Wheeler, A.R. (Eds), *Research in Personnel and Human Resources Management*, Vol. 28, Emerald Group Publishing Ltd., Bingley, pp. 265-341.

Stewart, G.L. (1999), "Trait bandwidth and stages of job performance: assessing differential effects for conscientiousness and its subtraits", *Journal of Applied Psychology*, Vol. 84 No. 6, pp. 959-968.

Tett, R.P., Jackson, D.N. and Rothstein, M. (1991), "Personality measures as predictors of job performance: a meta-analytic review", *Personnel Psychology*, Vol. 44 No. 4, pp. 703-742.

Watson, D. and Clark, L.A. (1984), "Negative affectivity: the disposition to experience aversive emotional states", *Psychological Bulletin*, Vol. 96 No. 3, pp. 465-490.

Watson, D. and Clark, L.A. (1997), "Extraversion and its positive emotional core", in Hogan, R., Johnson, J. and Briggs, S. (Eds), *Handbook of Personality Psychology*, Academic Press, San Diego, CA, pp. 767-793.

Wiggins, J.S. (1979), "A psychological taxonomy of trait-descriptive terms: the interpersonal domain", *Journal of Personality and Social Psychology*, Vol. 37 No. 3, pp. 395-412.

Woo, S.E., Chernyshenko, O.S., Stark, S.E. and Conz, G. (2014a), "Validity of six openness facets in predicting work behaviors: a meta-analysis", *Journal of Personality Assessment*, Vol. 96 No. 1, pp. 76-86.

Woo, S.E., Chernyshenko, O.S., Longley, A., Zhang, Z., Chiu, C. and Stark, S.E. (2014b), "Openness to experience: its lower level structure, measurement, and cross-cultural equivalence", *Journal of Personality Assessment*, Vol. 96 No. 1, pp. 29-45.

Zimmerman, R.D. (2008), "Understanding the impact of personality traits on individual's turnover decisions: a meta-analytic path model", *Personnel Psychology*, Vol. 61 No. 2, pp. 309-348.

Corresponding author
Professor E. Kevin Kelloway can be contacted at: kevin.kelloway@smu.ca