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The Great Eight Competencies: A Criterion-Centric Approach to Validation

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The author presents results of a meta-analysis of 29 validation studies (N = 4,861) that uses the Great Eight competency factors (Kurz & Bartram, 2002) as the criterion measurement framework. Predictors of the Great Eight competencies based only on personality scales show moderate to good correlations with line-manager ratings for all 8 of the competencies. On their own, ability tests correlate with 4 of the 8 competencies, and together ability and personality data yield operational validities ranging from 0.20 to 0.44 for the 8 competencies. Operational validities for aggregated predictors with aggregated criteria were estimated to be 0.53. The value of differentiating the criterion space and of relating predictor variables to criterion variables in a one-to-one fashion is discussed.

Keywords: validation, personality, competency models, meta-analysis

This study presents a model of performance in the workplace that defines eight broad competency factors, which we refer to as the Great Eight (Bartram, Robertson, & Callinan, 2002; Kurz & Bartram, 2002). The Great Eight have emerged from factor analyses and multidimensional scaling analyses of self- and manager ratings of workplace performance, not from the predictor domain (i.e., ability tests, motivation or personality questionnaires). Thus, they provide a criterion-centric model from which to explore the validity of various potential predictors of workplace performance. This model and its associated predictor–outcome relationships are explored through a meta-analysis of 29 validity studies. The intention behind this research is not just to add to the body of data relating to the validity of personality and ability tests as predictors of workplace behavior but also to demonstrate the value of an approach that uses a model of the criterion domain as the organizing framework for meta-analysis rather than the more usual predictor domain models (e.g., the Big Five personality factors model).

Ability and Personality as Predictors of Job Performance

Ability measures have been acknowledged as good predictors of job performance and even better predictors of training performance. The early meta-analyses (e.g., Hunter & Hunter, 1984) showed the generalizability of this finding. More recently, the academic literature has begun to support the view that personality measures also predict performance at work. Studies concentrating on the Big Five personality factors have shown that Conscientiousness and Emotional Stability have broadly generalizable relationships with overall job performance (OJP; Barrick & Mount, 1991; Hough, 1992; Salgado, 1997, 1998). Barrick and Mount (1991) report corrected mean validities of r = .22 for Conscientiousness and r = .13 for Extraversion. Tett, Jackson, and Rothstein (1991) quote corrected mean validities ranging from r = .16 for Extraversion to r = .33 for Agreeableness. Salgado (1997, 1998) replicated Barrick and Mount's results with European data sets and also found evidence for the validity of Emotional Stability (corrected r = .19). More recently, Hurtz and Donovan (2000) have reported corrected correlations of r = .22 for Conscientiousness, r = .14 for Emotional Stability, and r = .09 for Extraversion. Thus, the current evidence is generally supportive of some of the Big Five in providing moderate predictions of relatively gross job performance measures.

Predictor- Versus Criterion-Centric Approaches

The traditional approach to validation has been predictor centric. Researchers have asked questions like "What does instrument *X* predict?," "How well does personality predict job performance?," and "What do ability tests predict?" As a consequence, we have seen separate literatures develop regarding the validity of personality scales and ability scales even though both types of instruments are used to predict aspects of behavior in the workplace. Through meta-analyses, there has been some pulling together of the findings within each literature. However, this has tended to be at the expense of a loss of detail, because there has been a relative lack of focus on the nature or appropriateness of the criterion measures (which are typically supervisor ratings of OJP) when studies have been drawn together for meta-analysis.

The argument presented here is that we should refocus our questions. We should be asking "How can we best predict *Y*?" where *Y* is some meaningful and important aspect of workplace behavior. Competency frameworks, when defined in terms of observable workplace behaviors, provide the basis for a differen-

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tiated criterion measurement. They support investigation of different aspects of performance, promoting a more sophisticated understanding of the factors underlying OJP. Inconsistencies in predictors of overall performance between jobs might be explained by differences between jobs in the relative importance of different aspects of performance. Differentiation of the criterion space would allow better prediction of job performance for a particular role once the competency requirements for the role were understood.

Models of the Criterion Measurement Domain

If we are to show a more complete and consistent pattern of relationships between predictors and workplace performance, we need to differentiate the criterion measures in a meaningful way. When this more differentiated approach has been adopted, a richer picture of the relationship between predictors and performance in the workplace emerges. Robertson and Kinder (1993) examined the average validity of a range of personality scales judged to be relevant for each of 12 different performance areas in a meta-analysis and found generalizable validity for 10 of them. Nyfield, Gibbons, Baron, and Robertson (1995) reported consistent patterns of correlations between each of the Big Five personality dimensions and different aspects of job performance as measured using manager's ratings. Robertson, Baron, Gibbons, MacIver, and Nyfield (2000) demonstrated that ratings of OJP that correlated highly with planning and organizing competency did show a positive correlation with Conscientiousness, as expected based on the meta-analysis literature.

The Robertson et al. study illustrates the importance of considering moderator variables in which artifact corrections leave substantial amounts of variance in the validity coefficients. As a further example, Judge, Bono, Ilies, and Gerhardt (2002) have shown how the correlations between conscientiousness and ratings of leadership qualities are moderated by sample effects: For student samples Conscientiousness is correlated with ratings of leadership qualities ($r = .36$), but this drops to $r = .17$ for people in government and military organizations and to $r = .05$ for people in business and commercial settings.

Studies like these illustrate the importance of doing more than just looking at correlations with overall measures of job performance. We need to have a well-articulated model of the domain of workplace behaviors and then evaluate the utility of our predictor instruments in terms of how well they enable us to account for variance in this domain. Campbell (1990), for example, defined performance as follows:

> Performance is behavior. It is something that people do and is reflected in the actions that people take. . .Performance is not the consequence(s) or result(s) of action; it is the action itself. . . For any job, there are a number of major performance components, distinguishable in terms of their determinants and covariation patterns with other variables. The correlations among their true scores are less than one. (p. 704)

These views are extended in a later publication:

> Performance is. . .something that people actually do and can be observed. By definition, it includes only those actions or behaviors that are relevant to the organization's goals and that can be scaled (measured) in terms of each person's proficiency (e.g., level of contribution). Performance is what the organization hires one to do, and do well. Performance is not the consequence or result of action, it is the action itself. . .Performance consists of goal-relevant actions that are under the control of the individual, regardless of whether they are cognitive, motor, psychomotor, or interpersonal. (Campbell, McCloy, Oppler, & Sager, 1993, pp. 40–41)

Similarly, Rotundo and Sackett (2002, p. 66) suggest that "job performance is conceptualized as those actions and behaviors that are under the control of the individual and contribute to the goals of the organization."

There have been a number of attempts to develop models of the criterion domain. Campbell, McHenry, and Wise (1990) described the performance of entry-level U.S. Army soldiers in terms of five dimensions: core proficiency, general soldier proficiency, effort and leadership, personal discipline, and physical fitness and military bearing. Campbell et al. (1993) also describe a general model of work performance consisting of eight factors: job-specific task proficiency, non-job-specific task proficiency, written and oral communication, demonstrating effort, maintaining personal discipline, facilitating team and peer performance, supervision and leadership, and management and administration.

Higher level categorizations of models have been proposed by Borman and Motowidlo (1993), who distinguish between contextual and task performance, and by J. Hogan and Holland (2003), who talk of "getting along" and "getting ahead" competencies.

J. Hogan and Holland's (2003) work is particularly relevant to the current research in that they emphasized the need to align predictors and criteria and explored the hypothesis that validities would increase as one moved from broad multiple-construct criteria (like OJP ratings) to more narrow single-construct criteria. In their research, this was done using predicted relations between seven personality constructs measured using the Hogan Personality Inventory (HPI) and two criteria: getting along and getting ahead. The HPI scales Adjustment, Prudence, and Ambition all provided good prediction of both criteria. HPI Likability predicted getting along (contextual performance), whereas HPI Intellectance was more related to getting ahead (task performance).

Scullen, Mount, and Judge (2003) found that general-level factor models (like the task vs. contextual performance model) fit 360 ratings data less well than more differentiated models. In particular, they showed a better fit for a four-factor model (technical skills, administrative skills, human skills, and citizenship behaviors). This supports the view that it may be necessary to use more differentiated models to fully capture the variance in the criterion. Clearly, a balance is needed between highly differentiated models that may not be generalizable and overly broad constructs that fail to capture relevant general dimensions of performance. Confirmatory factor analyses have supported the distinction between task and contextual or citizenship behaviors (Conway, 1996; Johnson, 2001), and other work has shown that, although task performance is better predicted by ability than personality, the reverse is the case with citizenship behavior (Borman, Penner, Allen, & Motowidlo, 2001; Hurtz & Donovan, 2000). Work by Borman, Buck, Hanson, Motowidlo, Stark, and Drasgow (2001) classified a wide range of citizenship behaviors into three main subcategories: personal support (helping, motivating, cooperating with and showing consideration for others), organizational support (showing loyalty, following rules and regulations, representing the organization in a positive light), and conscientious initiative (engaging in self-

development, taking initiatives, persistence, and making extra effort to complete tasks). The latter is clearly related to conscientiousness and is likely to facilitate both task and contextual performance (Motowidlo, Borman, & Schmit, 1997).

The key point from all this work is the demonstration that differentiating the criterion, if only into two broad areas, provides a considerable gain in the clarity of how personality-based predictors relate to performance. By doing this, one may capture criterion specificity effects that are lost when OJP is used as the sole criterion and treated as if it represented the same construct from study to study.

The current study proposes disaggregating the criterion further than this. Clearly, the degree to which it is possible to articulate the criterion space into distinct factors will be dependent on the range of measures available. If the only datum available is an OJP rating, then all we can do is ask about how reliable or relevant that is. Competency assessment by line managers and others typically involves a wide range of measures and, therefore, provides the potential for maximizing differentiation of the criterion space.

A Generic Competency Framework

The process adopted in developing the generic competency framework used in this study (Bartram et al., 2002; Kurz & Bartram, 2002) was similar to that described in Tett, Guterman, Bleier, and Murphy (2000), who identified 53 dimensions of job performance in managerial jobs from 12 published and practitioner models. The work done by myself and my colleagues was based on an analysis of a wide range of published and practitioner models. With a definition of competencies as "sets of behaviors that are instrumental in the delivery of desired results or outcomes" (Bartram et al., 2002, p. 7), the resulting framework distinguishes 112 component competencies at the finest level of detail. These components are clusters of similar workplace behavior, which, in practice, are not found to be further differentiated in competency models (see Appendix). These components can be thought of as building blocks that can be aggregated together to produce competencies. Sets of competencies, in turn, form competency models.

Within the current framework, one general purpose model is defined, with 20 competencies. However, the important level for the current research is the more general model, which aggregates the 112 components under eight general factors (Kurz, Bartram, & Baron, 2004). It is this framework on which the current research is based. These factors have been labeled the Great Eight because they appear to occupy a position within the work performance domain (Table 1) similar to the Big Five in the personality predictor domain.

The Great Eight structure provides an articulation of the work performance domain that is consistent with a wide range of models used by practitioners in competency practice and supported empirically by the way in which competency ratings cluster when subjected to factor analysis (e.g., Gotoh, 1999; Kurz, 1999; Kurz et al., 2004). For example, Kurz et al. (2004) report an analysis of

Table 1
Titles and High-Level Definitions of the Great Eight Competencies

Factor	Competency domain title	Competency domain definition	Hypothesized Big Five, motivation, and ability relationships[a]
1	Leading and Deciding	Takes control and exercises leadership. Initiates action, gives direction, and takes responsibility.	Need for power and control, extraversion
2	Supporting and Cooperating	Supports others and shows respect and positive regard for them in social situations. Puts people first, working effectively with individuals and teams, clients, and staff. Behaves consistently with clear personal values that complement those of the organization.	Agreeableness
3	Interacting and Presenting	Communicates and networks effectively. Successfully persuades and influences others. Relates to others in a confident, relaxed manner.	Extraversion, general mental ability
4	Analyzing and Interpreting	Shows evidence of clear analytical thinking. Gets to the heart of complex problems and issues. Applies own expertise effectively. Quickly takes on new technology. Communicates well in writing	General mental ability, openness to new experience
5	Creating and Conceptualizing	Works well in situations requiring openness to new ideas and experiences. Seeks out learning opportunities. Handles situations and problems with innovation and creativity. Thinks broadly and strategically. Supports and drives organizational change.	Openness to new experience, general mental ability
6	Organizing and Executing	Plans ahead and works in a systematic and organized way. Follows directions and procedures. Focuses on customer satisfaction and delivers a quality service or product to the agreed standards.	Conscientiousness, general mental ability
7	Adapting and Coping	Adapts and responds well to change. Manages pressure effectively and copes well with setbacks.	Emotional stability
8	Enterprising and Performing	Focuses on results and achieving personal work objectives. Works best when work is related closely to results and the impact of personal efforts is obvious. Shows an understanding of business, commerce, and finance. Seeks opportunities for self-development and career advancement.	Need for achievement, negative agreeableness

Note. More detailed definitions of each of the Great Eight are provided by the competency component level of the SHL Universal Competency Framework™ (see Appendix).

[a] Where more than one predictor is shown, the second is expected to be of lesser importance than the first. The competency titles and definitions are taken from the SHL Universal Competency Framework™ Profiler and Designer Cards (copyright © 2004 by SHL Group plc, reproduced with permission of the copyright holder). These titles may be freely used for research purposes subject to due acknowledgment of the copyright holder.

data from 365 managers drawn from four U.K. organizations in different industry sectors and from a wide range of functional areas. Two aptitude tests from the SHL Management and Graduate Item Bank were used: Verbal Critical Reasoning (VMG2) and Numerical Critical Reasoning (NMG2). In addition, two questionnaires were administered: the Occupational Personality Questionnaire (Concept Model, OPQ CM4.2; SHL Group, 1993b), which measures 30 scales in an ipsative (forced-choice) format, and the Inventory of Management Competencies (IMC; SHL Group, 1993a), which measures 16 generic competency dimensions using a combined Likert-type and forced-choice format. A composite 180° performance score for each IMC competency was calculated by averaging self- and boss ratings. These 16 performance scores were entered together with selected marker scales from the OPQ and the ability scales into a principal-components factor analysis to ascertain the underlying factor structure of the competency performance and competency potential variables. Eight factors reached an eigenvalue greater than 1, accounting for 68% of the variance. The factor structure was largely in line with that predicted by the Great Eight model. Factor scores generated from these data were relatively independent; the strongest correlations were just over 0.3. Other analyses on different data sets have produced similar degrees of fit to the model (e.g., Gotoh, 1999; Kurz, 1999). Multidimensional Scaling analyses of criterion IMC competency ratings produce a circumplex pattern, with pairs of scales clustering together according to their proximity as defined by their expected Great Eight content loadings.

Factor analyses of Great Eight predictor or criterion data sets tend to produce higher level solutions. In the predictor domain, these reflect a broad motivational factor, general ability, and two broad personality factors (Digman, 1997). For the criterion domain, two factors tend to emerge corresponding generally to Hogan's getting along and getting ahead distinction or Borman's contextual and task performance distinction.

The choice of the Great Eight as the level of analysis (rather than either higher level constructs or more detailed competency models) was driven by the need to provide a degree of differentiation of the criterion space that reflected the range of attributes that managers and practitioners distinguish in practice, while retaining sufficient generality to enable the same model to be applied across a wide range of studies involving diverse competency models and predictor instruments.

Our approach to validation views predictor instruments as valuable insofar as they can provide valid measures of competency potential. The current research concerns the relationship between measures of competency potential (based on personality and ability tests) and competencies (as assessed through supervisor ratings of performance on various aspects of a competency model), with both sets of measures being mapped onto the generic Great Eight level of description.

Table 1 gives the "headline" definitions of the Great Eight competency factors. Further details can be obtained by studying the competency components that underpin each high-level factor (see Appendix). Table 1 also summarizes a range of hypotheses concerning the expected relationships between high level factors in the predictor domain and the Great Eight competencies. These hypotheses are based on an analysis of the content of the competencies and judged relevance of the various underlying traits.

General mental ability is expected to relate most strongly to Analyzing & Interpreting competencies, because the content of these are heavily loaded on general mental ability ("g"). On the basis of the content of the competencies, we would also expect general mental ability measures to correlate with the adjacent factors of Presenting & Interacting as well as Creating & Conceptualizing. It is these three areas of competency, especially Analyzing & Interpreting, that contain competency components that are underpinned by job knowledge and skills and hence are most likely to be well predicted by measures of general mental ability (see Appendix, especially the Applying Expertise & Technology and Writing & Reporting components). Organizing & Executing is also likely to be correlated with general ability, but more weakly than the other three competency factors.

In relation to personality, the relationship between the Great Eight and the Big Five is not exact. A clearer pattern of results can be obtained if some aspects of the Big Five are differentiated. Notably, Big Five Conscientiousness combines both dependability and achievement; and Extraversion combines aspects of interacting with others on the one hand and dominance or potency on the other (Hough, 1992; Hough, Ones, & Viswesvaran, 1998). In the Great Eight competency model, we would expect the trait of dependability to relate to Organizing & Executing while achievement relates to Enterprising & Performing; the trait of sociability should relate to Interacting & Presenting, while dominance and potency aspects of extraversion should relate to Leading & Deciding and Interacting & Presenting competencies.

Although there is clearly some overlap between the current model and that described by Campbell et al. (1993), the current model has the advantage of being elaborated in terms of the 112 component competencies, which, in turn, are linked both to competency assessment measures and to personality, motivation, and ability scales in the predictor domain. As such, the model provides a single framework for making predictions from measures of competency potential (ability, personality, and motivation) to ratings of actual work performance.

Hypotheses

On the basis of the rationale underlying the mapping of competency ratings and competency potential measures to the Great Eight model and from the results of previous meta-analysis research, summarized previously, the data were examined to explore a number of hypotheses:

> *Hypothesis 1*: Correlations between matched pairs of Great Eight competency ratings and competency potential scores will be higher than for unmatched pairs.

For example, the correlation between the prediction of Leading & Deciding, based on personality measures, and managerial ratings of Leading & Deciding competencies should be higher than the correlations between this predictor and managerial ratings on any of the other seven Great Eight competencies.

> *Hypothesis 2*: Personality-based predictors will show nonzero relationships with all eight of the areas of line manager's competency ratings, whereas ability-based predictors will only relate to those areas of competency that are underpinned by job knowledge and skill acquisition.

In terms of the Great Eight model, we expect the strongest association with ability measures to be found for Analyzing & Interpreting and Creating & Conceptualizing. Less strong relationships would be expected for Interacting & Presenting and Organizing & Executing.

Method

A total of 29 studies were collected from various client organizations. They came from the United Kingdom and a number of other European countries, Turkey and the Middle East, South Africa, the Far East, and the United States and cover a wide range of different industry sectors and jobs (although supervisory and managerial positions predominate). The 29 studies, only 5 of which have been included in any previous published validation reports (Nyfield et al., 1995), have a total sample size of 4,861 people (*Mdn* = 125/study). Criterion data consist of line-manager ratings on either standardized work performance competency instruments or client-specific measures.

Nineteen of the 29 studies used one of several standardized competency rating instruments. The Inventory of Management Competencies (IMC; SHL Group, 1993a) includes 16 competency scales and 160 items. The items are presented in sets of four. Each item has to be rated on a scale ranging from 1 to 5, and the rater also has to select which of each set of four items is most true and least true of the target subject. IMC scoring involves a weighted sum of the scores obtained from the rating and forced-choice measures. The Customer Contact Competency Inventory (CCCI; SHL Group, 1997) also has 16 competency scales and follows the same mixed-item style format as IMC. It has a total of 128 items arranged in 32 quads. The Work Styles Competency Inventory (WSCI; SHL Group, 1999b) has 16 competency scales based on 96 items, which are responded to on a rating scale ranging from 1 to 5. Perspectives on Management Competencies (PMC; SHL Group, 1994) has 36 competency scales based on 144 items, which are responded to on a rating scale ranging from 1 to 5. These were all developed for use as self- and other-rating instruments of performance at work. For the current study, only line-manager ratings were used as data. Ten of the 29 studies used client-specific rating instruments.

The predictor measures include a number of different instruments from the Occupational Personality Questionnaire (OPQ) family. OPQ Concept Model (30 scales plus Consistency or Social Desirability scale; SHL Group, 1993b) is the precursor to OPQ32 (32 scales plus Consistency or Social Desirability scale; SHL Group, 1999a). OPQ CM4.2 and OPQ32i are the forced-choice format versions of OPQ Concept Model and OPQ32, whereas OPQ CM5.2. and OPQ32n are the Likert-type versions. The Customer Contact Styles Questionnaire (CCSQ; SHL Group, 1997) is a version of OPQ designed for use in customer service and sales settings and is available in both a Likert-type rating scale (CCSQ5.2: 16 scales plus Social Desirability scale) and a combined rating and forced-choice (CCSQ7.2: 16 scales plus Consistency scale) form. Finally, the Work Styles Questionnaire (SHL Group, 1999b) is a Likert-type questionnaire for use in production and lower level service positions (WSQn: 17 scales plus Social Desirability scale). In addition to these personality instruments, a wide range of ability tests (both verbal and numerical reasoning) were used. For the purposes of this study, these are treated as equivalent measures of either verbal or numerical reasoning.

All the studies have personality data from one or another of the instruments just discussed. Eighteen of the 29 studies have data relating to one or more ability tests. Seven of the studies were predictive validity designs, and 21 were concurrent; no details were available for 1. Total samples sizes and data about the studies, job types, industry sectors, and other demographics are presented in Tables 2–6.

Table 2
Number of Studies and Total Sample Sizes Having Criterion Data and Predictor Data for Each of the Great Eight Competencies

	Criteria		Predictors	
Competency	No. studies	*n*	Ability	Personality
Leading/Deciding	28	3,869	2,697	4,455
Supporting/Cooperating	26	3,778	2,697	4,459
Interacting/Presenting	28	3,874	2,697	4,458
Analyzing/Interpreting	27	3,771	2,697	4,457
Creating/Innovating	21	3,280	2,697	4,455
Organizing/Executing	29	3,971	2,697	4,458
Adapting/Coping	25	3,664	2,697	4,453
Enterprising/Performing	27	3,742	2,697	4,458
No. studies			18	29

Mapping Scales to the Competencies

A standard set of mappings of personality and ability scales onto the Great Eight competencies had been defined for each of the predictor instruments (personality and ability tests) and for the standardized competency rating instruments (IMC, CCCI, PMC, and WSCI). These mappings are in the form of linear weighted composites and were defined a priori on the basis of ratings of construct overlap between traits (individual scales) and each of the 112 competency components in the framework. As described earlier, in this framework each of the Great Eight competency factors is composed of a subset of the 112 competency components. The relevance of each competency component for each personality scale had been initially estimated using independent judgments of three subject matter experts. Each possible scale–component relationship was rated on a scale ranging from 0 (*not relevant*) to 4 (*highly relevant*). (The scale was anchored to expectations of correlations between scales and items of between 0 and 0.40 for the 0 to 4 ratings.) Judgments were reviewed and a final set of component relevancies agreed on. The outcome of this process is a large matrix of components by scales, populated by relevance ratings in the range of −4 to + 4. Scale weights for producing Great Eight scores from, for example, OPQ32 scales were then defined by aggregation of the relevant sets of component weights into a single linear equation.

The validation of this approach is described in Bartram (2001). Further research has also demonstrated the robustness of this approach of aggregating measures at the component level. For the current study, aggregation of scale–component relations up to the Great Eight factor level was used to provide the basis for identifying a small number of marker scales (generally no more than three scales) for each of the eight factors. Typically, this aggregation process results in a small number of scales having large weights (i.e., aggregated relevancies) and a larger number having small weights. Discarding the lower weighted scales reduces the correlations between composites without adversely affecting their validities. The outcome of this process was that for the OPQ32, for example, each of the Great Eight competencies is measured by three scales (see Table 7 for list of marker scales used in predictor measures of each of the Great Eight competencies), with different scales being used for each of the Great Eight (i.e., 24 of the 32 available scales are used in all). For WSQ and CCSQ, it was not possible to avoid some overlap of scale content, given the need to ensure good coverage of the content of each competency domain. However, this had relatively little impact on correlations among the final overall set of eight composites (see Table 8).

It is important to note that the personality instruments used in these studies have a broader coverage than Big Five instruments. In particular, the OPQ model covers aspects of motivation and cognitive style as well as the more traditional areas of personality. For example, Table 7 lists scales such as Controlling, Achieving, and Competitive. Others that load on competencies like Leading & Deciding or Enterprising & Performing include scales such as Persuasive and Energetic. In the area of cognitive style, the OPQ model includes scales such as Evaluative and Data Rational.

Table 3
Summary of Individual Study Details

Ref. no.	Country	*N*	Predictors: Personality inventory	Predictors: Verbal ability	Predictors: Numerical ability	Criteria-manager ratings: Competency model	Criteria-manager ratings: OJP	Type of study
1	UK	128	OPQ CM4.2	VMG2	NMG2	IMC	Y	Concurrent
2	UK	35	OPQ CM4.2	VMG2	NMG2	IMC	Y	Concurrent
3	UK	92	OPQ CM4.2	VMG2	NMG2	IMC	Y	Concurrent
4	UK	139	OPQ CM4.2	VMG2	NMG2	IMC	Y	Concurrent
5	UK	68	OPQ CM4.2	VMG2	NMG2	IMC	Y	Concurrent
6	Belgium	83	OPQ CM4.2			IMC		Predictive
7	UK	88	OPQ CM4.2	VA3	NA4	Client		Concurrent
8	UK	449	OPQ CM4.2			IMC	Y	Predictive
9	S Africa	72	OPQ CM4.2	VC1.1	NC2.1	IMC		Predictive
10	USA	175	OPQ CM4.2	VMG1		IMC	Y	Concurrent
11	Turkey	503	OPQ CM4.2	VMG1	NMG1	IMC	Y	Concurrent
12	France	491	OPQ32i			IMC		Concurrent
13	Korea	366	OPQ CM4.2	VMG1	NMG1	IMC	Y	Concurrent
14	Germany	132	CCSQ 7.2			CCCI	Y	Concurrent
15	S Africa	165	CCSQ 5.2	VCC3		CCCI		Concurrent
16	UK/USA	236	OPQ32n			PMC		Concurrent
17	UK	54	CCSQ 5.2			CCCI		Concurrent
18	UK	53	CCSQ 5.2			CCCI		Concurrent
19	UK	61	WSQn			WSCI		No details
20	UK	64	WSQn			WSCI		Concurrent
21	UK	101	OPQ CM5.2			Client		Concurrent
22	UK	42	OPQ CM4.2	VC1.1	NMG1	Client		Predictive
23	Belgium	166	OPQ CM4.2			Client		Predictive
24	UK/Egypt	60	OPQ32i	VMG1	NMG1	Client	Y	Concurrent
25	UK	133	OPQ CM5.2	VMG3	NMG3	Client	Y	Concurrent
26	Netherlands	543	OPQ CM4.2	VA1	NIT2	Client	Y	Predictive
27	UK	144	CCSQ 5.2	VCC3	NCC4	Client		Predictive
28	UK	93	OPQ CM4.2	VMT1	NMG2	Client		Concurrent
29	UK	125	OPQ CM4.2	VMG1	NMG1	Client		Concurrent

Note. See text for further information on the competency models and predictor measures. Complete data were not available for all samples. OJP = overall job performance ratings; *N* = maximum number in each sample; Y = yes; IMC = Inventory of Management Competencies; CCCI = Customer Contact Competency Inventory; PMC = Perspectives on Management Competencies; WSCI = Work Styles Competency Inventory.

For client competency models, mapping to the Great Eight was carried out post hoc by two subject matter experts on the basis of the content and the definitions given to the competencies in the client model. From these definitions, it was possible to map these models to the 20 dimension levels of the framework and then aggregate the results up to the Great Eight level. There was generally insufficient detail available on the nature of the competencies from client models to permit an analysis in terms of the 112 components. Most of the client models covered a subset of the Great Eight competencies. As a consequence, the total number of studies having data on each competency factor varies for each of the Great Eight competencies (see Table 2).

All scale scores (both predictor and criterion) were transformed into *z* scores before being weighted and combined into Great Eight scores. The

Table 4
Sample Breakdown by Country

Country	Frequency	Percentage
Belgium	249	5.12
Egypt	60	1.23
France	491	10.10
Germany	132	2.72
Holland	543	11.17
Korea	366	7.53
Saudi Arabia	237	4.87
Turkey	503	10.35
United Kingdom	1,869	38.45
United States	411	8.46
Total	4,861	100.00

Table 5
Sample Breakdown by Job Type

Job type	Frequency	Percentage
Account executives	144	2.96
Broker consultants	165	3.39
Collections staff	54	1.11
Executives	166	3.41
Managers	3,243	66.72
Sales reps	132	2.72
Sales staff	53	1.09
Shop floor staff	64	1.32
System developers	236	4.86
Trainees	543	11.17
Unknown	61	1.25
Total	4,861	100.00

Table 6
Sample Breakdown by Industry Sector

Industry sector	Frequency	Percentage
Banking	186	3.83
Call center	107	2.20
Distribution	139	2.86
Engineering	366	7.53
Finance	92	1.89
Food manufacturing	491	10.10
Hospitality	328	6.75
Insurance	309	6.36
Information technology	543	11.17
Manufacturing	870	17.90
Pharmaceuticals	88	1.81
Public sector	165	3.39
Retail	265	5.45
Telecommunications	236	4.86
Unknown	61	1.25
Various	615	12.65
Total	4,861	100.00

Great Eight scores were then transformed into *z* scores. In each case, standard score transformations were carried out using all those people in the combined set of studies having data on the respective measures.

OJP Ratings

Some of the studies also had data on ratings of OJP (13 studies). In most cases, these ratings used a six-item rating instrument used in the International Validation Study reported by Nyfield et al. (1995). The reliability of this scale was 0.70.

Meta-Analysis Procedures

The procedures used in the meta-analysis were as described by Hunter and Schmidt (1990); individual corrections were carried out on each study. Meta-analysis adjustments included corrections for criterion reliability and predictor range restriction. The criterion reliability of the Great Eight competencies based on the standardized competency instruments was set at 0.75, whereas that for client competency models was set at 0.52. The latter value is taken from Hermelin and Robertson's (2001) artifact distribution estimates, whereas the former takes account of published data on the reliability of ratings using the standardized instruments IMC (SHL Group, 1993a), PMC (SHL Group, 1994), and CCCI (SHL Group, 1997). Range restriction was calculated for each study on the basis of differences between the composite score predictor standard deviations for the selected samples and the standard deviations for the relevant applicant groups when these data were available. When applicant data were not available (about 50% of the cases), a relevant norm group was used (i.e., one based on similar applicant samples rather than on the general population) to estimate degree of range restriction for the underlying scales of the composites. Because range restriction tended to be uniform across scales for personality, range restrictions for composites in this case were estimated on the basis of the average range restrictions across the relevant scales. The average ratio of restricted standard deviations to unrestricted standard deviations was 0.80 (0.045 *SD* across studies) for the personality measures and 0.80 (0.062 *SD* across studies) for ability tests.

Results

Relationships Between Variables Within the Personality-Based Predictor Set and the Criterion Set

The average correlation between the eight predictor composites was .07, whereas for the criteria it was 0.45 (see Table 8 for the

Table 7
Personality Inventory Scales Used to Generate Competency Potential Scores

G8 factor	Competency domain title	OPQ32	OPQ CM	CCSQ	WSQ
1	Leading & Deciding	Controlling, Persuasive, Decisive	Controlling, Persuasive, Decisive	Persuasive, Results Oriented	Assertive, Achieving, Decisive
2	Supporting & Cooperating	Caring, Democratic, Affiliative	Caring, Democratic, Affiliative	Empathic, Participative, Self-Control	Considerate, Team-Oriented, Dependable
3	Interacting & Presenting	Socially Confident, Outgoing, Modest (-ve)	Socially Confident, Outgoing, Modest (-ve)	Sociable, Modest (-ve), Persuasive	Socially Confident, Assertive, Adaptable
4	Analyzing & Interpreting	Evaluative, Data Rational, Conceptual	Critical, Data Rational, Conceptual	Analytical, Structured, Innovative	Practical, Organized, Innovative
5	Creating & Conceptualizing	Innovative, Independent, Conventional (-ve)	Innovative, Independent, Traditional (-ve)	Innovative, Flexible, Analytical	Innovative, Adaptable, Achieving
6	Organizing & Executing	Conscientious, Detail Conscious, Forward Planning	Conscientious, Detail Conscious, Forward Planning	Conscientious, Detail Conscious, Structured	Dependable, Detail Conscious, Organized
7	Adapting & Coping	Tough-minded, Relaxed, Optimistic	Tough-minded, Relaxed, Optimistic	Resilience, Self-Control, Flexible	Resilient, Emotionally Controlled, Optimistic
8	Enterprising & Performing	Achieving, Competitive, Vigorous	Achieving, Competitive, Active	Results Oriented, Competitive, Energetic	Achieving, Competitive, Active

Note. In each case, the first scale received a weight of two and the other scale(s) were unit weighted. In some instances for the WSQ and CCSQ, the same scales load on two Great Eight competencies. Although this introduces a necessary degree of correlation between these Great Eight predictors (see Table 8), the overlap was included to ensure sufficient breadth of coverage of the relevant constructs. OPQ = Occupational Personality Questionnaire; CM = Concept Model; CCSQ = Customer Contact Styles Questionnaire; WSQ = Work Styles Questionnaire.

Table 8
Average Intercorrelations (Uncorrected) for Great Eight Competency Manager Ratings (Above Diagonal) and Great Eight Predictors Based on Personality Data Only (Below Diagonal)

Variable	L/D	S/C	I/P	A/I	C/C	O/E	A/C	E/P
L/D	—	0.41	0.57	0.47	0.52	0.56	0.47	0.61
N		3,798	3,895	3,873	3,391	3,992	3,684	3,769
S/C	−0.08	—	0.43	0.28	0.26	0.37	0.51	0.36
N	4,846		4,016	3,814	3,522	4,012	3,848	3,783
I/P	0.44	0.13	—	0.50	0.47	0.37	0.40	0.48
N	4,845	4,849		3,912	3,606	4,193	3,987	3,882
A/I	0.09	−0.16	−0.04	—	0.58	0.56	0.31	0.50
N	4,844	4,848	4,847		3,403	4,008	3,700	3,897
C/C	0.27	−0.11	0.20	0.33	—	0.46	0.35	0.55
N	4,842	4,846	4,845	4,844		3,600	3,516	3,372
O/E	−0.07	0.01	−0.16	0.20	−0.05	—	0.35	0.56
N	4,845	4,849	4,848	4,847	4,845		3,983	3,980
A/C	0.04	0.04	0.08	−0.09	0.05	0.00	—	0.43
N	4,840	4,844	4,843	4,842	4,840	4,843		3,753
E/P	0.36	−0.23	0.20	0.09	0.23	0.09	−0.04	—
N	4,845	4,849	4,848	4,847	4,845	4,848	4,843	

Note. L/D = Leading/Deciding; S/C = Supporting/Cooperating; I/P = Interacting/Presenting; A/I = Analyzing/Interpreting; C/C = Creating/Conceptualizing; O/E = Organizing/Executing; A/C = Adapting/Coping; E/P = Enterprising/Performing.

complete matrix). The overall positive correlation for the criteria is not surprising because these are line-manager rating data. However, this analysis does show that there is a good degree of independence between the eight predictors. For the predictors, the main correlations are between Analyzing & Presenting and Creating & Innovating on the one hand ($r = .33$) and between Leading & Deciding, Interacting & Presenting, and Enterprising & Performing on the other (average $r = .33$).

In line with previous work, principal-components analyses of the predictor and criterion matrices produced three- and two-factor solutions, respectively. For the predictors the three factors accounted for 55.48% of the variance, and for the criteria the two factors accounted for 65.03%. Varimax-rotated loadings are shown in Table 9. For the criteria, these factors broadly represent task (Factor 1) versus contextual behaviors (Factor 2), whereas for the predictors the meaning of the factors is less clear.

Table 9
Varimax Rotated Loadings From Principal-Components Analyses of the Eight Predictors and Eight Criteria

	Predictors: rotated factor loadings			Criteria: rotated factor loadings	
Variable	1	2	3	1	2
Leading/Deciding	.79	−.07	.02	.68	.44
Supporting/Cooperating	−.16	−.10	.75	.15	.86
Interacting/Presenting	.69	−.27	.34	.57	.45
Analyzing/Interpreting	.20	.74	−.18	.82	.08
Creating/Conceptualizing	.60	.36	−.03	.80	.11
Organizing/Executing	−.17	.73	.15	.73	.26
Adapting/Coping	.11	.08	.59	.23	.80
Enterprising/Performing	.60	.12	−.32	.73	.33

The Validity of Personality Data for the Prediction of Supervisor-Rated Competencies

Sample-weighted average predictor–criterion correlations for each of the cells of the 8 × 8 matrix of predictors and competencies across all the studies are shown in Table 10. The diagonal cells are the hypothesized relationships (Hypothesis 1). It can be seen that these are all nonzero and are the largest values in each row or column in all cases but one. For the personality-based predictor of Leading & Deciding, the correlation with Leading & Deciding competency ratings is equal to that with Interacting & Presenting and only slightly higher than that with Enterprising & Performing.

The results presented in Table 10 support Hypothesis 1, because the average correlation of the hypothesized relationship is .16, whereas the average correlation of the nonhypothesized relationships (the off-diagonal cells in Table 10) is .02.

These results can be compared to use of the Big Five as a framework for structuring the predictor scales. Standard Big Five equations for OPQ32 and OPQ CM were applied to these instruments to produce Big Five predictor scores. These equations are based on correlations between OPQ and the NEO Personality Inventory–Revised (NEO-PI-R; SHL Group, 1999a). Table 11 shows the correlations between Big Five and Great Eight predictors of competency potential and provides an empirical underpinning to the assignments noted in Table 1. There is close concordance among Extraversion, Agreeableness, Conscientiousness, and Neuroticism (negative) on the one hand and Interacting & Presenting, Supporting & Cooperating, Organizing & Executing, and Adapting & Coping on the other. Extraversion is also correlated with Leading & Deciding, whereas Agreeableness correlates negatively with Enterprising & Performing. Openness to New Experience correlates with both Analyzing & Interpreting and Creating & Conceptualizing. In general, these results show that the Big Five relate to the Great Eight in the manner expected (as described in Table 1).

Table 10
Sample-Weighted Average Correlations (Uncorrected) Between Great Eight Competency Boss Ratings and Predictors Based on Personality Data Only, With Hypothesized (Diagonal) and Nonhypothesized (Mean Off-Diagonal) Values

Predictor	Example OPQ32 marker scales	Competency ratings									
		L/D	S/C	I/P	A/I	C/C	O/E	A/C	E/P	Hypothesized	Nonhypothesized
L/D	Controlling, Decisive	0.18	−0.02	0.17	0.04	0.11	0.02	0.00	0.17	0.18	0.07
S/C	Caring, Affiliative	−0.02	0.11	−0.03	−0.10	−0.10	−0.04	0.03	−0.07	0.10	−0.04
I/P	Socially Confident, Outgoing	0.11	0.06	0.19	0.00	0.08	−0.03	0.04	0.08	0.19	0.05
A/I	Evaluative, Data Rational	0.02	−0.07	0.02	0.16	0.12	0.07	−0.03	0.02	0.16	0.02
C/C	Innovative, Independent	0.07	−0.03	0.08	0.09	0.18	0.00	−0.02	0.06	0.18	0.04
O/E	Conscientious, Forward Planning	0.00	−0.03	−0.07	0.05	−0.04	0.15	−0.02	0.03	0.14	−0.01
A/C	Tough-minded, Relaxed	0.00	0.02	−0.02	−0.01	−0.01	−0.01	0.12	−0.01	0.12	−0.01
E/P	Achieving, Competitive	0.11	−0.03	0.10	0.07	0.11	0.04	0.02	0.19	0.19	0.06
	M									0.16	0.02

Note. Number of studies = 29; sample size range = 3,280–3,971. OPQ32 = Occupational Personality Questionnaire-32. L/D = Leading/Deciding; S/C = Supporting/Cooperating; I/P = Interacting/Presenting; A/I = Analyzing/Interpreting; C/C = Creating/Conceptualizing; O/E = Organizing/Executing; A/C = Adapting/Coping; E/P = Enterprising/Performing.

Table 12 indicates that Big Five predictors have the expected pattern of correlations with the Great Eight competencies. As one would expect, however, they do not fit as well as the predictors designed specifically to measure the competencies on a one-to-one basis. The average of the absolute values of the correlations predicted for the five Great Eight criteria hypothesized to relate most strongly to the Big Five is .11, which is somewhat lower than the average correlation for the Great Eight (.16) for the pairwise predictions shown in Table 10. The Big Five show much weaker predictions of Leading & Deciding, Enterprising & Performing, and Analyzing & Interpreting. As noted earlier, this is likely because OPQ instruments provide coverage of aspects of motivation (specifically, need for achievement and need for power and control) and cognitive style that lie outside the Big Five domain.

Meta-Analysis of the Great Eight Predictor–Criterion Pairs for Personality-Based Predictors

Corrections for criterion reliability and range restriction were carried out only on the hypothesized correlations (i.e., those shown in the diagonal of Table 10). None of the off-diagonal (see Table 10) correlations were included in the meta-analyses. The resulting corrected correlations (Table 13) for the personality-based predictions of the Great Eight are moderate to high for all eight factors, ranging from 0.16 to 0.28. The largest values obtained are, in fact, for the motivation- and extraversion-driven factors (Leading & Deciding, Interacting & Presenting, and Enterprising & Performing competencies).

The Validity of Ability Test Data as Predictors of Supervisor-Rated Competencies

Ability tests were predicted to correlate most strongly with Analyzing & Interpreting competencies and to show relationships with Creating & Conceptualizing and with Interacting & Presenting. The results of the meta-analysis carried out on ability tests only are presented in Table 13 and clearly show the expected pattern. The strongest relationship (ρ = .40) is, as expected, with Analyzing & Interpreting competencies, which are strongly underpinned in the competency framework by components relating to

Table 11
Correlations Between Big Five and Great Eight Personality-Based Composite Predictors

Personality-based Great Eight predictor	Example OPQ32 marker scales	Big Five predictors				
		Extraversion	Agreeableness	Openness	Conscientiousness	Neuroticism
Leading/Deciding	Controlling, Decisive	**0.37**	−0.15	0.04	−0.12	−0.13
Supporting/Cooperating	Caring, Affiliative	0.17	**0.90**	−0.05	−0.06	0.06
Interacting/Presenting	Socially Confident, Outgoing	**0.89**	0.01	0.09	−0.22	−0.17
Analyzing/Interpreting	Evaluative, Data Rational	−0.10	−0.18	**0.39**	0.16	0.06
Creating/Conceptualizing	Innovative, Independent	0.17	−0.18	**0.61**	−0.12	−0.10
Organizing/Executing	Conscientious, Forward Planning	−0.23	0.00	−0.10	**0.96**	0.06
Adapting/Coping	Tough-minded, Relaxed	−0.02	0.02	−0.11	−0.06	**−0.86**
Enterprising/Performing	Achieving, Competitive	0.13	**−0.41**	0.01	0.06	0.01

Note. *N* varies by rows from 4,222 to 4,226. OPQ32 = Occupational Personality Questionnaire-32. Boldface numbers indicate hypothesized Great Eight–Big Five relationships.

Table 12
Average Correlations Between Big Five Personality-Based Predictors and Great Eight Competency Criteria

Variable	Great Eight competency criterion ratings							
	Leading/ Deciding	Supporting/ Cooperating	Interacting/ Presenting	Analyzing/ Interpreting	Creating/ Conceptualizing	Organizing/ Executing	Adapting/ Coping	Enterprising/ Performing
N	3,236	3,142	3,309	3,221	2,757	2,845	3,103	3,200
Big Five predictors								
Extraversion	**0.09**	0.06	**0.18**	0.00	0.07	−0.05	0.00	0.09
Agreeableness	−0.01	**0.09**	−0.05	−0.06	−0.08	−0.01	0.01	**−0.07**
Openness	0.01	−0.03	0.04	**0.09**	**0.13**	−0.02	−0.02	−0.01
Conscientiousness	0.00	−0.06	−0.07	0.06	−0.06	**0.15**	−0.03	−0.01
Neuroticism	−0.01	−0.01	−0.01	0.00	−0.02	0.04	**−0.09**	−0.02

Note. Boldface numbers indicate hypothesized Great eight–Big five relationships.

job knowledge and job skills. Overall, there are relationships between ability and the middle four competencies (from Interacting & Presenting to Organizing & Executing). As expected (Hypothesis 2), the first and last pairs of Great Eight competencies (see Table 1) show no relationships with ability.

The Validity of Combined Personality and Ability Test Data as Predictors of Supervisor-Rated Competencies

Personality and ability test predictions were combined using regression weights (see Table 14). Regression analyses, with composite personality and composite ability measures as the two predictors and competency ratings as the criterion, were performed for each of the Great Eight for those cases in which there were data on both personality and ability tests. In cases in which there were verbal and numerical reasoning tests (rather than just one or the other), an equal-weighted composite of these was used as the estimate of general ability. For ability tests there is, of course, only one predictor for each of the Great Eight competencies, whereas for the personality data each of the Great Eight has a distinct personality-based predictor. It was decided not to use the standardized regression weights given in Schmidt and Hunter (1998), because these relate to the effect of adding measures of conscientiousness to general mental ability and relate to validity studies in which the criteria were overall measures of job performance. The ratio of ability to personality regression weights from Schmidt and Hunter is 1.65. For the current study, it is 1.85 for Analyzing & Interpreting (the most g-loaded competency) but less than 1.0 for the rest of the Great Eight.

Table 13
Meta-Analysis Results for Great Eight Competencies Based on Personality-Only Predictors and Ability-Only Predictors for All Those Cases Having Data on Either One or the Other or Both Sets of Measures

Predictor	No. studies	*N*	*r*	ρ	$SD\rho$	%var	10% CrI
Personality only							
Leading/Deciding	28	3,595	0.181	0.267	0.054	84.98	0.197
Supporting/Cooperating	26	3,470	0.109	0.161	0.159	38.97	−0.043
Interacting/Presenting	28	3,568	0.187	0.277	0.134	47.12	0.105
Analyzing/Interpreting	27	3,554	0.164	0.244	0.125	50.64	0.084
Creating/Conceptualizing	21	2,994	0.182	0.260	0.079	67.93	0.159
Organizing/Executing	29	3,670	0.150	0.218	0.177	35.06	−0.009
Adapting/Coping	25	3,366	0.122	0.175	0.108	57.67	0.036
Enterprising/Performing	27	3,561	0.189	0.275	0.061	80.54	0.197
Ability only							
Leading/Deciding	18	2,166	0.044	0.075	0.190	35.62	−0.168
Supporting/Cooperating	16	2,128	0.008	0.024	0.102	64.11	−0.107
Interacting/Presenting	18	2,170	0.147	0.216	0.159	42.75	0.012
Analyzing/Interpreting	17	2,131	0.276	0.404	0.198	26.70	0.150
Creating/Conceptualizing	12	1,730	0.172	0.241	0.096	59.88	0.118
Organizing/Executing	18	2,170	0.105	0.158	0.160	43.76	−0.047
Adapting/Coping	15	1,986	0.050	0.075	0.044	90.31	0.018
Enterprising/Performing	16	2,057	0.029	0.053	0.163	40.63	−0.156

Note. r = sample-weighted average of uncorrected correlations; ρ = sample-weighted average of correlations corrected for artifacts; $SD\rho$ = standard deviation of corrected correlations; 10%CrI = lower 10% boundary of 80% credibility interval; %var = percentage variance accounted for by artifact corrections for corrected correlation distribution.

Table 14
Standardized Regression Weights Used to Combine Personality- and Ability-Based Predictors of the Great Eight

Great Eight criterion competency	Correlation: personality with ability	Personality		Ability		Ratio of βs	*R*
		β	*p* <	β	*p*		
Leading/Deciding	0.017	0.160	.001	0.053	.05	0.331	0.169
Supporting/Cooperating	−0.139	0.127	.001	0.028	*ns*	0.220	0.127
Interacting/Presenting	−0.008	0.221	.001	0.158	.001	0.715	0.271
Analyzing/Interpreting	0.259	0.122	.001	0.226	.001	1.852	0.283
Creating/Conceptualizing	0.186	0.186	.001	0.153	.001	0.823	0.262
Organizing/Executing	−0.109	0.183	.001	0.117	.001	0.639	0.206
Adapting/Coping	−0.056	0.127	.001	0.049	.05	0.386	0.133
Enterprising/Performing	0.380	0.166	.001	0.011	*ns*	0.066	0.166

Note. N = 1,727–2,157. Number of studies = 12–18.

The results of meta-analysis of predictor–criterion relationships conducted using only those studies that included both personality and ability predictors are presented in Table 15. This shows the outcome of the analysis of combining personality and ability data and also the results for each alone for the same subset of cases from the data set. The validity of predictions of Interacting & Presenting, Analyzing & Interpreting, Creating & Conceptualizing, and, to a lesser degree, Organizing & Executing is increased by the addition of ability test information. For the others, addition of ability test data results in little or no change of validity. The final sample-weighted average corrected validities for the combined measures range from 0.20 for Supporting & Cooperating to 0.44 for Analyzing & Interpreting.

Table 15
Meta-Analysis Results for Great Eight Competencies Based on Personality-Only Predictors, Ability-Only Predictors, and Combined Personality and Ability Predictors for All Those Cases Having Data on Both Personality and Ability

Variable	No. studies	*N*	*r*	ρ	*SD*ρ	%var	10% CrI
Personality only							
Leading/Deciding	18	2,152	0.164	0.245	0.072	78.77%	0.153
Supporting/Cooperating	16	2,114	0.130	0.197	0.159	40.00%	−0.007
Interacting/Presenting	18	2,157	0.221	0.329	0.106	60.36%	0.192
Analyzing/Interpreting	17	2,121	0.179	0.264	0.144	45.68%	0.079
Creating/Conceptualizing	12	1,727	0.213	0.305	0.062	77.41%	0.226
Organizing/Executing	18	2,156	0.163	0.238	0.139	49.65%	0.060
Adapting/Coping	15	1,977	0.115	0.164	0.114	57.06%	0.019
Enterprising/Performing	16	2,051	0.162	0.237	0.047	88.61%	0.177
Ability only							
Leading/Deciding	18	2,152	0.043	0.074	0.188	36.30%	−0.167
Supporting/Cooperating	16	2,114	0.007	0.022	0.120	55.97%	−0.132
Interacting/Presenting	18	2,157	0.150	0.219	0.155	44.09%	0.021
Analyzing/Interpreting	17	2,121	0.276	0.404	0.198	26.67%	0.150
Creating/Conceptualizing	12	1,727	0.173	0.242	0.094	60.98%	0.122
Organizing/Executing	18	2,156	0.104	0.156	0.157	44.70%	−0.045
Adapting/Coping	15	1,977	0.051	0.076	0.054	86.41%	0.007
Enterprising/Performing	16	2,051	0.028	0.051	0.160	41.78%	−0.154
Personality and ability							
Leading/Deciding	18	2,152	0.171	0.257	0.034	94.25%	0.213
Supporting/Cooperating	16	2,114	0.133	0.201	0.164	38.19%	−0.009
Interacting/Presenting	18	2,157	0.270	0.397	0.134	46.29%	0.225
Analyzing/Interpreting	17	2,121	0.299	0.438	0.177	30.31%	0.210
Creating/Conceptualizing	12	1,727	0.253	0.357	0.054	80.48%	0.287
Organizing/Executing	18	2,156	0.205	0.302	0.065	81.30%	0.219
Adapting/Coping	15	1,976	0.128	0.180	0.099	63.59%	0.053
Enterprising/Performing	16	2,051	0.163	0.240	0.028	95.48%	0.204

Note. r = sample-weighted average of uncorrected correlations; ρ = sample-weighted average of correlations corrected for artifacts; *SD*ρ = standard deviation of corrected correlations; 10%CrI = lower 10% boundary of 80% credibility interval; %var = percentage variance accounted for by artifact corrections for corrected correlation distribution.

Validity Generalizability and Situational Specificity

Examination of Table 15 shows considerable variance in the corrected correlations for some competencies. For the combined personality and ability predictors, the percentage of variance accounted for passes the 75% rule in 50% of the cases, whereas for personality alone this is only true for three of the eight competencies (Leading & Deciding, Creating & Innovating, and Enterprising & Performing) and for ability alone just one (Adapting & Coping) of the eight. However, in the case of ability and Adapting & Coping competencies, the average validity is close to zero, implying that ability is never a valid predictor for this aspect of competency. In their study of meta-analyses, Hermelin and Robertson (2001) noted that the average percentage of variance accounted for across studies tends to be nearer to 50% than 75%, indicating the presence of genuine moderating effects. The average variance accounted for across the eight competencies (for the results presented in Table 15) is 66.24%, which is higher than the Hermelin and Robertson estimate but well below the 75% cutoff.

Combining personality and ability as predictors has some unexpected effects on generalizability. Although the three competencies that are above the 75% cutoff for Personality alone remain so for the combined predictors, Organizing & Executing passes the 75% cutoff for the combined predictors but not for either on its own. Adapting & Coping, which was generalizable according to the ability data, is not generalizable according to the combined data. It is difficult to explain these anomalies from examination of the data. One possibility is that they arise through instability of the estimates of variance accounted for. This is likely to be especially true when the average correlation is small and the between-study variance is also small.

Relationships Between Aggregated Criteria and Aggregated Predictors

All the analyses reported previously focus on the individual pairwise relationships between each of the Great Eight predictor–criterion pairs. In practice, selection decisions are made on the basis of aggregation of information from multiple sources (such as predictors of each of the Great Eight competencies) and are best evaluated in terms of their overall relationship with aggregated criteria. An estimate of the upper limit on the overall relationship between optimally weighted aggregated sets of criterion and predictor measures can be obtained by examining the canonical correlation between the predictor and criterion vectors. Canonical components for personality only (eight predictors and eight criterion measures) and personality and ability (nine predictors and eight criterion measures) for the same set of cases accounted for 28.87% of the variance for personality only ($R = .54$) and 30.66% of the variance for personality and ability combined ($R = .55$). Although these figures provide an estimate of the validity obtainable with aggregated multiple criteria, the following should be noted:

1. These results are based on the uncorrected correlation matrices and as such are underestimates of the covariance between predictor and criterion sets.

2. Canonical correlation, like multiple regression, capitalizes on chance and provides us with a best fitting solution for this data set. Thus, the covariance accounted for in new data sets by the canonical equations developed from this data set would show shrinkage.

The extent to which this level of correlation is obtainable in practice can be estimated by assuming that ratings of OJP provide an indication of the relative weights an organization places on the eight criterion competencies. By regressing the OJP measures, when these are available, onto the Great Eight criterion competency ratings, it will be possible to create aggregated criterion competency scores using the regression beta values as weights. Multiple regression can then be used to see how the predictor competency potential scores relate to this aggregate for each study.

Predicting OJP

Data on OJP ratings were available for 13 studies. Of these, only 10 also had ratings on all eight of the criterion competencies. The current analysis is restricted to those 10 studies ($N = 1{,}864$). Regression analyses were carried out on the raw data (with no corrections for artifacts) for each study. Individual study beta weights and multiple correlations, and sample-weighted average beta weights are shown in Table 16.

Of the eight competency ratings, those most strongly related to OJP ratings, in order of importance (see Table 16), are Analyzing & Interpreting, Organizing & Executing, Enterprising & Performing, Leading & Deciding, and Creating & Conceptualizing. The more contextual competencies (Supporting & Cooperating, Adapting & Coping, Interacting & Presenting) are less strongly related. This suggests that OJP ratings are primarily influenced by task performance competencies. However, the data do show considerable differences in patterns between studies, with the standard deviation of the beta weights across studies averaging about 0.15. This suggests that the competency factors that influence judgments of OJP do vary from situation to situation. Unfortunately, there is insufficient information available about the individual studies to establish whether these variations are meaningful in terms of differences in job content or organizational culture.

The model underlying the Great Eight competencies (Kurz & Bartram, 2002) is consistent with Spencer and Spencer's (1993) causal flow model, which postulates that personal characteristics predict OJP achievement through competencies. The regression weights shown in Table 16 were used to construct a single-weighted aggregate competency criterion for each study. The composite competency criterion variables were then regressed on the eight predictor competencies (weighted composites of personality and ability for eight of the studies and personality only for two). The average multiple correlation across the 10 studies was .35 (unweighted) or .27 (weighted by sample size; Table 17). As a cross-validation, the sample-weighted average beta weights from Table 16 were used to create composite criterion scores for 4 additional studies ($N = 440$), when there were data on all eight of the criterion competencies. The same process was then used to regress these composite criterion variables on the eight predictors. For these 4 studies, mean $R = .35$ (both unweighted and weighted by sample size). Across all 14 studies, the sample-weighted mean $R = .28$, and the average unweighted $R = .35$. Given that the impact of correcting for artifacts (range-restriction and criterion reliability) for these data is to increase obtained coefficients by

Table 16
Beta Weights and R Values for Regression of OJP on Line-Manager Competency Ratings

Line-manager competency ratings	Study no.										β[a]	
	1	2	3	4	5	8	10	11	13	14	*M*	*SD*
Leading/Deciding	0.13	0.45	0.16	0.37	−0.01	0.11	0.30	0.22	0.02	0.17	0.16	0.15
Supporting/Cooperating	0.09	0.11	0.00	−0.01	0.28	0.10	0.33	0.11	−0.02	−0.32	0.06	0.18
Interacting/Presenting	0.02	−0.16	0.05	0.00	0.11	0.20	−0.11	−0.07	0.01	0.42	0.04	0.17
Analyzing/Interpreting	0.12	0.15	0.24	0.09	0.17	0.18	0.32	0.29	0.50	0.00	0.26	0.14
Creating/Conceptualizing	0.20	−0.05	0.09	0.19	0.12	0.11	−0.06	0.19	0.12	−0.08	0.12	0.11
Organizing/Executing	0.36	0.44	0.40	0.25	0.30	0.18	0.10	0.22	0.06	−0.01	0.19	0.15
Adapting/Coping	0.08	−0.40	0.23	−0.01	−0.21	0.15	0.01	−0.09	0.10	0.03	0.03	0.18
Enterprising/Performing	0.03	0.11	0.00	−0.01	0.19	0.11	0.25	0.15	0.43	0.29	0.18	0.14
R	0.63	0.85	0.72	0.63	0.67	0.77	0.78	0.84	0.93	0.68		
N[b]	114	35	91	132	65	378	86	503	362	98		

Note. Mean beta values are sample weighted. All correlations are uncorrected for effects of artifacts. OJP = overall job performance.
[a] Total mean $\beta \pm SD = 0.13 \pm 0.15$.
[b] Total sample size = 1,864.

between 47% and 60% (average increase = 51%: see Tables 13–15), one can estimate that operational validities for aggregated predictor and aggregated criterion measures would be in the range of 0.42 to 0.53.

Finally, the predictor composite scores were correlated with the OJP ratings (Table 18). The average (uncorrected) correlation was .27 (unweighted) or .22 (weighted by sample size).

The pattern of results for the prediction of the composite competency criterion from personality and ability-based competency predictors (see Table 17) is what one would expect from previous research: The strongest predictor is Organizing & Executing (which is related to Big Five Conscientiousness in the predictor domain). The other main predictors are Leading & Deciding, Creating & Conceptualizing, Analyzing & Reporting, and Interacting & Presenting, which are most strongly related to general mental ability and Extraversion in the predictor domain. Beta weights for Supporting & Cooperating are negative or near zero.

Meta-Analysis of Relationships Between Combined Personality and Ability Predictors and OJP

Meta-analysis of the eight competency potential scores as direct predictors of OJP was carried out for the 10 studies examined previously. For this analysis, the reliability of the OJP criterion was set at 0.70 for the seven studies using the six-item OJP rating scale and at 0.52 (as recommended by Hermelin & Robertson, 2001) for the remaining three studies, which used single-item ratings of OJP. No correction for range restriction was carried out. The results (Table 19) show a similar pattern to that reported previously: Leading & Deciding and Organizing & Executing have the strongest average relationships but have low generalizability. Analyzing & Interpreting, in contrast, although having a lower level of average correlation, shows high generalizability (with artifact corrections actually overcorrecting for between-study variance).

Table 17
Beta Weights and R Values for Regression of Aggregated Great Eight Line-Manager Competency Ratings on Great Eight Competency Potential Predictors[a]

Competency potential predictors	Study										β[b]	
	1	2	3	4	5	8	10	11	13	14	*M*	*SD*
Leading/Deciding	−0.02	0.01	0.04	0.11	−0.25	0.08	0.01	0.05	0.13	0.27	0.07	0.13
Supporting/Cooperating	0.02	−0.26	−0.19	−0.20	0.00	0.00	−0.06	0.00	−0.15	−0.05	−0.06	0.10
Interacting/Presenting	0.05	0.20	0.05	0.08	−0.01	0.05	0.31	−0.09	−0.01	0.19	0.02	0.12
Analyzing/Interpreting	−0.02	0.33	0.39	−0.28	0.04	0.01	0.25	0.07	0.05	−0.17	0.04	0.21
Creating/Conceptualizing	−0.07	−0.36	−0.32	0.29	0.36	0.00	−0.24	0.16	−0.03	0.33	0.05	0.27
Organizing/Executing	0.11	0.41	−0.21	0.19	0.19	0.04	−0.02	0.06	0.18	−0.01	0.08	0.16
Adapting/Coping	−0.03	−0.32	−0.08	−0.03	−0.29	0.06	−0.08	0.02	−0.01	−0.14	−0.02	0.13
Enterprising/Performing	−0.12	−0.06	0.05	−0.02	0.22	0.02	0.02	0.02	0.03	0.00	0.02	0.09
R	0.18	0.57	0.30	0.34	0.55	0.11	0.35	0.24	0.29	0.57		
N	114	35	91	132	65	378	86	503	362	98		

Note. All correlations are uncorrected for effects of artifacts. Mean beta values are sample weighted.
[a] Personality and Ability composites, except for Study 8 and Study 14, which had personality data only.
[b] Unweighted total mean = 0.35; sample-weighted total mean = 0.27.

Table 18
Correlations Among Great Eight Aggregated Competency Potential Predictors (AggPred), Great Eight Aggregated Line Manager–Rated Competencies (AggCrit), and Overall Job Performance (OJP)

Study	AggPred w/AggCrit	AggCrit w/OJP	AggPred w/OJP	*N*
1	0.18	0.63	0.14	114
2	0.57	0.85	0.35	35
3	0.30	0.72	0.29	91
4	0.34	0.63	0.18	132
5	0.55	0.67	0.36	65
8	0.11	0.77	0.16	378
11	0.35	0.78	0.21	86
12	0.24	0.84	0.16	503
14	0.29	0.93	0.26	362
15	0.57	0.68	0.59	98
Sample weighted mean	0.27	0.79	0.22	
Unweighted mean	0.35	0.75	0.27	

Note. All correlations are uncorrected for effects of artifacts. Total sample = 1,864.

As noted in the earlier analyses, there is a negative correlation between OJP and Supporting & Cooperating (which is mainly Big Five Agreeableness in the predictor domain), suggesting that people who are high on Big Five Agreeableness are judged less favorably on their OJP than those who are lower on this attribute. Other studies have noted small negative correlations between agreeableness and job performance (e.g., Hunthausen, Truxillo, Bauer, & Hammer, 2003), but the reported effects are usually less than −0.1.

Summary

The results support the validity of point-to-point relationships between Great Eight competencies and their predictors. The obtained correlations were consistently higher than those between unmatched pairs of predictors and criteria. Although personality-based predictors showed moderate to high validities for all of the Great Eight, ability tests only added to the prediction of criteria for four of the eight competencies. As hypothesized, ability is most strongly predictive of competencies in the areas of Analyzing & Interpreting and Creating & Conceptualizing. The correlation between aggregated multiple predictors and aggregated multiple criteria was, as one would expect, substantially higher than the relationships between the predictors and OJP would suggest.

Discussion

The current results show that when there is a strong rationale defining the predictors and the criterion, and when these can then be matched on a one-to-one basis (rather than the traditional many predictors to one or many to few criteria), a clear pattern of results is found, which is consistent with the hypotheses presented early in this article. The results confirm the hypothesized Great Eight pairwise predictor–criterion competency relationships. Not only are the relationships between matched predictor–competency pairs substantially higher than those between unmatched pairs, but it was also shown that personality and ability together and in isolation predict competency performance ratings in a meaningful manner. Specifically, ability tests predict four of the Great Eight; the strongest relationship between ability and competencies occurred for the Analyzing & Interpreting competencies. Personality provides a far broader coverage of the competency domain than ability, but ability data add to the level of prediction one obtains from personality measures on their own in those areas where ability is relevant.

The results show that when Big Five measures are used as predictors, they also provide good coverage of the Great Eight criterion competency model. However, the evidence suggests that applying the Great Eight competency model to the predictor domain provides a clearer and stronger pattern of relationships than using a mixed model with the Big Five as predictors and the Great Eight as criteria. Mapping the predictor domain to the Great Eight definitions rather than the Big Five accounts for more of the criterion variance and also provides a stronger practitioner focus by concentrating on what is being predicted rather than what is doing the prediction.

The main advantage of the Great Eight model is that it provides (a) a framework for integrating measures in the predictor domain, such as ability, personality, and motivation scales, and (b) a clear set of a priori hypotheses regarding the expected eight one-to-one

Table 19
Correlations (Operational Validities) Between Combined Personality- and Ability-Based Predictions of Competencies and Independent Ratings of Overall Job Performance

Variable	No. studies	*N*	*r*	ρ	$SD\rho$	%var	10% CrI
Leading/Deciding	10	1864	0.10	0.14	0.14	37.01%	−0.04
Supporting/Cooperating	10	1864	−0.11	−0.16	0.13	37.50%	−0.33
Interacting/Presenting	10	1864	0.05	0.07	0.12	43.16%	−0.09
Analyzing/Interpreting	10	1864	0.06	0.09	0.00	100.00%	0.09
Creating/Conceptualizing	10	1864	0.06	0.08	0.09	56.90%	−0.04
Organizing/Executing	10	1864	0.09	0.12	0.09	59.20%	0.01
Adapting/Coping	10	1864	0.00	−0.01	0.00	100.00%	−0.01
Enterprising/Performing	10	1864	0.06	0.09	0.13	38.95%	−0.08

Note. r = sample-weighted average of uncorrected correlations; ρ = sample-weighted average of correlations corrected for artifacts; $SD\rho$ = standard deviation of corrected correlations; 10% CrI = lower 10% boundary of 80% Credibility interval; %var = percentage variance accounted for by artifact corrections for corrected correlation distribution.

predictor–criterion relationships. The contribution of the Great Eight model for understanding of job performance is clear. Each of the eight predictors was shown to predict a different area of job performance consistently across jobs, measurement instruments, and cultural contexts.

The correlation of these predictors with OJP was lower than one would expect from the combination of the eight pairwise predictor–criterion relationships: The average uncorrected correlation across studies between aggregated predictor competencies and OJP was between .22 (weighted) and .25 (unweighted), whereas the average uncorrected correlation between aggregated predictor and criterion competencies was between .27 (weighted) and .35 (unweighted). The average uncorrected correlation between aggregated criterion competency ratings and OJP, however, was between .75 (weighted) and .79 (unweighted). These results are consistent with the causal flow model (Spencer & Spencer, 1993): Personality and ability act to predict the related behaviors as rated by line managers as competencies, and these ratings of competencies are, in turn, related to OJP ratings. Considering job performance in an undifferentiated manner (as ratings of OJP do) hides the pattern of relationships between predictors and more specific competency factors. This suggests that the current meta-analysis literature may be underestimating the capacity for personality measures and ability test data to add value to assessment procedures by enhancing their overall predictive power and providing more detailed diagnostic information on performance.

The levels of correlation obtained in the current meta-analysis are quite high for personality-based predictors in comparison with other meta-analysis studies (and clearly substantive in practical terms). These results have been obtained using personality instruments that adopt a clear work-related frame of reference (FOR). As Hunthausen et al. (2003) have shown, instruments that have a world-of-work FOR do yield higher validities than those that are more general. Ones and Viswesvaran (2001) have reviewed the use of "criterion-focused occupational personality scales (COPS)" in selection and have also noted the higher validities associated with scales that directly address issues of relevance in the workplace compared with more general personality assessment instruments. It should be noted that the OPQ instruments were developed as work-related measures of personality, and the item content and scales were developed through working with people in industry. It was as a consequence of this that different instruments were developed to cover general graduate and managerial use (OPQ), customer service roles (CCSQ), and blue-collar jobs (WSQ). Because the development process was centered on covering all aspects of personality that are considered to be of relevance in the workplace, the OPQ inventories cover a wider range of personal attributes than instruments developed from a personality theory focus, such as the five-factor model. In particular, aspects of motivation are covered. This greater breadth becomes important when one is attempting to cover the full range of personal attributes assessed by line managers in their competency ratings.

The results for OJP show that this is not predicted equally by all eight of the personality-based predictors, by ability, or by personality–ability combinations. OJP is predicted mainly by Organizing & Executing, Leading & Deciding, and Analyzing & Interpreting, with a negative association with Supporting & Cooperating competencies. This may have more to say about what factors drive managers' general ratings of job performance than anything else. It suggests a pattern whereby managers favor people who are dependable, high achieving, and focused on the task rather than those who display the prosocial behaviors of helping and supporting others. Further work is needed to determine whether actual productivity or other outcome measures are more strongly related to aggregated multiple criteria or to single OJP ratings. For the current data, at least, the relationship between the eight predictors and eight criteria shows how much stronger validities can be obtained by aggregation of multiple criteria than by the use of single overall rating measures.

Contextual and Task Performance

The analyses of the Great Eight predictors and criteria (see Table 9) indicate a more general level of description that ties this work in closely with the literature on contextual versus task-related performance constructs, reviewed earlier here. For the criterion measures, the first principal component is loaded by competencies that are closely tied to task performance and that are best predicted by motivation, general ability, conscientiousness, and openness to new experience. The second principal component is related to competencies associated with supporting and cooperating with others and coping and adapting to change. The distinction between these is very similar to that described by R. Hogan (1983) and J. Hogan and Holland (2003) as dynamism, or "getting ahead," and social propriety, or "getting along."

The personality-based Great Eight predictors provide some more differentiation, in that the "getting ahead" competencies are divided into two principal components in terms of potential. The first reflects motivation, extraversion, and openness to new experience, whereas the second represents the configuration of variables that one sees emerging as consistent predictors of performance across a wide range of studies: conscientiousness and related aspects of thinking styles (e.g., Barrick & Mount, 1991; Salgado, 1997, 1998; Schmidt & Hunter, 1998).

Approaches to the criterion domain reflect the same issues that we have seen in the personality field in terms of how differentiated the domain needs to be. Lexical analysis studies and research on self-report personality measures have provided evidence for a number of ways of looking at the domain space. At the most general level, there is single personality factor, which differentiates between desirable and undesirable attributes (Boies, Lee, Ashton, Pascal, & Nicol, 2001; Goldberg & Somer, 2000; Saucier, 1997). This is analogous in the criterion domain to ratings of OJP, which typically reflect broad evaluations of how good or bad a person is. Also well established is the two-factor solution (Boies et al., 2001; Digman, 1997; Paulhus & John, 1998; Saucier, 1997), in which the first factor relates to positive dynamic attributes and individual ascendancy and the second to social propriety and community cohesion. Bakan (1966) described these factors as agency and communion. They also clearly relate to task and contextual performance factors in the criterion domain.

The Big Five level of analysis is the one focused on here, in that the Great Eight competencies are designed to represent a level of generality comparable to that represented by the Big Five in the personality domain. Factor analyses of the OPQ produces five-factor solutions that map onto the Big Five. Six- and seven-factor solutions can also be found that provide a differentiation similar to that of the HPI and that differentiate achievement from depend-

ability (these tend to be combined as Conscientiousness in most Big Five models) and that differentiates sociability from impulsivity (often combined as Extraversion). However, the argument as to whether there are five, six, or seven factors is primarily one about the scope of the domain rather than the level of aggregation. Whichever solution one adopts, it is then possible to disaggregate these factors into facets or more specific subscales (just as the OPQ32 resolves them into 32 scales, and the NEO-PI-R into 30-facet scales). However, the main thrust of the current argument is that it is more useful to map predictor instruments onto criterion models for the purposes of validation rather than to map the criterion models onto predictor models. To do this, the level of aggregation of the predictor scales should match that of the criterion.

If sufficient data are available, it would be better to operate at a more detailed level of description (e.g., in terms of the 20 competencies presented in the Appendix) with comparable, more specific composites of personality and ability tests as predictors. This was not possible for the current research, because insufficient information was available on the criterion competencies to allow mapping to a more detailed level than the Great Eight.

For the current research, the ability test data that were available (verbal reasoning or numerical reasoning or both) were treated as providing an estimate of general mental ability. At the Great Eight level of description, it is probably not appropriate to consider the differential impact of specific abilities. Examination of the component level of Analyzing & Interpreting (see Appendix) shows, however, that one would expect different patterns of validity for more specific ability tests at more detailed levels of description within the framework. For example, Component 4.2.7 relates to "demonstrating spatial awareness" and Component 4.2.5 to "demonstrating physical and manual skills." One would expect to find tests of spatial ability having higher validities than other ability tests for jobs in which this component was relevant. We would also expect tests of creative thinking to increase levels of prediction for Creating & Conceptualizing, whereas tests of oral comprehension and expression should relate to Interacting & Presenting. For the current set of studies, however, the emphasis on service and managerial positions and the focus on the general Great Eight level of aggregation entails that general mental ability, as assessed by verbal and numerical reasoning, is likely to account for most of the ability-related variance. Future research needs to consider whether the levels of prediction found here would be increased by the use of more differentiated competency models and the use of a wider range of more specific ability tests.

Limitations

The studies reported here were collected from corporate archives. It was not possible to exercise control, in retrospect, over data collection, supervisor rating procedures, and other design factors. In many cases, study design details were not available. The total sample of studies, however, included five U.K. samples (Studies 1–5 in Table 3) where there was good independent control over the design of the studies and the data collection. These supervised studies (previously reported in Nyfield et al., 1995) provide a benchmark against which the quality of the data from the other studies can be evaluated. Removal of these supervised studies from the data set generally resulted in a lowering of average validities for the remaining studies. However, the overall pattern of results was not affected.

On the issue of statistical power, Murphy (1997) suggested that caution should be used in interpreting tests of situational specificity when the average sample size is less than 100 to 200 or when the number of studies (*k)* is less than 15 to 20. The current data set has a median sample size of 125, with *k* generally in the 20+ range. On that basis, this collection of studies seems to have sufficient power to detect situational specificities.

The samples examined here are predominantly from management or are graduates in technical or sales positions or management training. Although some of the data came from blue-collar positions, their influence on the overall results will be quite small. It is quite possible that the pattern of these results will vary for different types and levels of job. In particular, we might expect to find greater emphasis on the competency area most closely related to job knowledge and skills (Analyzing & Interpreting) in lower level jobs. The language used to define the competencies within the current framework fits most easily with the way these behaviors are described for management positions. However, the framework is intended to be generic. Future research needs to explore the degree to which it is possible to produce better operational definitions of the competencies in the framework for different job levels.

Finally, all the data presented here have used predictor instruments from one publisher (although they have included a variety of instruments with a variety of response formats) with competency measurement tools that were either from the same source or from client-constructed measures of unknown psychometric quality. Although all the personality instruments and much of the competency ratings data were collected using instruments from a single publisher, there is no direct content or construct overlap between the models underlying the personality instruments and the competency instruments. Indeed, one reason for developing a generic competency framework was to be able to map between competency models like IMC, CCCI, and PMC, which are otherwise very different in structure and content as well as in item type and format.

Future work on the Great Eight would benefit from research that mapped other predictor instruments and other criterion measurement procedures onto this structure to test its generalizability and robustness.

Conclusions

Perhaps we have been preoccupied for too long with the wonderful personality questionnaires and ability tests we have constructed to measure all sorts of aspects of human potential. In so doing, we may have lost sight of why it is important to be able to measure these characteristics. As a consequence, practitioners have often had difficulty explaining to their clients the value of what we have to offer. We need to realize that this inability may be due in no small part to our failure to address the issues that actually concern clients: performance at work and the outcomes of that performance. The Big Five and other classifications of personality factors, for example, are classifications focused on the predictor domain. In this article, we have endeavored to show the value of changing this focus to the criterion domain while still providing the same level of differentiation within that domain.

Although the Great Eight provides an analogue in that domain to "g," motivation measures, and the Big Five of the predictor domain, it has the advantage of addressing directly the issues that are of prime practical importance in selection testing: what it is that is being predicted.

By differentiating performance in the criterion domain in this way, we can better articulate the value of what we can provide as predictors of work-related behaviors from a practice point of view and better understand why particular patterns of predictor–criterion relationships occur. To facilitate this, practitioners need to encourage their clients to adopt more differentiated appraisal tools. This would be not only of scientific value in improving the quality of validity studies but also of value to the client in providing more reliable and more valid measures of people's performance. By comparing measures of actual performance on the Great Eight or similar criterion classification models with measures of potential on the same constructs (using personality and ability tests as predictors), clients would be better able to identify those areas in which people would benefit most from learning opportunities and developmental experiences.

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Appendix

Great Eight, 20 Competency Dimension and 112 Competency Component titles from the SHL Universal Competency Framework

1 Leading and Deciding
- 1.1 Deciding & Initiating Action
  - 1.1.1 Making Decisions
  - 1.1.2 Taking Responsibility
  - 1.1.3 Acting with Confidence
  - 1.1.4 Acting on Own Initiative
  - 1.1.5 Taking Action
  - 1.1.6 Taking Calculated Risks
- 1.2 Leading and Supervising
  - 1.2.1 Providing Direction and Coordinating Action
  - 1.2.2 Supervising and Monitoring Behavior
  - 1.2.3 Coaching
  - 1.2.4 Delegating
  - 1.2.5 Empowering Staff
  - 1.2.6 Motivating Others
  - 1.2.7 Developing Staff
  - 1.2.8 Identifying and Recruiting Talent

2 Supporting and Cooperating
- 2.1 Working with People
  - 2.1.1 Understanding Others
  - 2.1.2 Adapting to the Team
  - 2.1.3 Building Team Spirit
  - 2.1.4 Recognizing and Rewarding Contributions
  - 2.1.5 Listening
  - 2.1.6 Consulting Others
  - 2.1.7 Communicating Proactively
  - 2.1.8 Showing Tolerance and Consideration
  - 2.1.9 Showing Empathy
  - 2.1.10 Supporting Others
  - 2.1.11 Caring for Others
  - 2.1.12 Developing and Communicating Self-knowledge and Insight
- 2.2 Adhering to Principles and Values
  - 2.2.1 Upholding Ethics and Values
  - 2.2.2 Acting with Integrity
  - 2.2.3 Utilizing Diversity
  - 2.2.4 Showing Social and Environmental Responsibility

3 Interacting and Presenting
- 3.1 Relating & Networking
  - 3.1.1 Building Rapport
  - 3.1.2 Networking
  - 3.1.3 Relating Across Levels
  - 3.1.4 Managing Conflict
  - 3.1.5 Using Humor
- 3.2 Persuading and Influencing
  - 3.2.1 Making an Impact
  - 3.2.2 Shaping Conversations
  - 3.2.3 Appealing to Emotions
  - 3.2.4 Promoting Ideas
  - 3.2.5 Negotiating
  - 3.2.6 Gaining Agreement
  - 3.2.7 Dealing with Political Issues
- 3.3 Presenting and Communicating Information
  - 3.3.1 Speaking Fluently
  - 3.3.2 Explaining Concepts and Opinions
  - 3.3.3 Articulating Key Points of an Argument
  - 3.3.4 Presenting and Public Speaking
  - 3.3.5 Projecting Credibility
  - 3.3.6 Responding to an Audience

4 Analyzing and Interpreting
- 4.1 Writing and Reporting
  - 4.1.1 Writing Correctly
  - 4.1.2 Writing Clearly and Fluently

- 4.1.3 Writing in an Expressive and Engaging Style
- 4.1.4 Targeting Communication
- 4.2 Applying Expertise and Technology
  - 4.2.1 Applying Technical Expertise
  - 4.2.2 Building Technical Expertise
  - 4.2.3 Sharing Expertise
  - 4.2.4 Using Technology Resources
  - 4.2.5 Demonstrating Physical and Manual Skills
  - 4.2.6 Demonstrating Cross Functional Awareness
  - 4.2.7 Demonstrating Spatial Awareness
- 4.3 Analyzing
  - 4.3.1 Analyzing and Evaluating Information
  - 4.3.2 Testing Assumptions and Investigating
  - 4.3.3 Producing Solutions
  - 4.3.4 Making Judgments
  - 4.3.5 Demonstrating Systems Thinking

5 Creating and Conceptualizing
- 5.1 Learning and Researching
  - 5.1.1 Learning Quickly
  - 5.1.2 Gathering Information
  - 5.1.3 Thinking Quickly
  - 5.1.4 Encouraging and Supporting Organizational Learning
  - 5.1.5 Managing Knowledge
- 5.2 Creating and Innovating
  - 5.2.1 Innovating
  - 5.2.2 Seeking and Introducing Change
- 5.3 Formulating Strategies and Concepts
  - 5.3.1 Thinking Broadly
  - 5.3.2 Approaching Work Strategically
  - 5.3.3 Setting and Developing Strategy
  - 5.3.4 Visioning

6 Organizing and Executing
- 6.1 Planning and Organizing
  - 6.1.1 Setting Objectives
  - 6.1.2 Planning
  - 6.1.3 Managing Time
  - 6.1.4 Managing Resources
  - 6.1.5 Monitoring Progress
- 6.2 Delivering Results and Meeting Customer Expectations
  - 6.2.1 Focusing on Customer Needs and Satisfaction
  - 6.2.2 Setting High Standards for Quality
  - 6.2.3 Monitoring and Maintaining Quality
  - 6.2.4 Working Systematically
  - 6.2.5 Maintaining Quality Processes
  - 6.2.6 Maintaining Productivity Levels
  - 6.2.7 Driving Projects to Results
- 6.3 Following Instructions and Procedures
  - 6.3.1 Following Directions
  - 6.3.2 Following Procedures
  - 6.3.3 Time Keeping and Attending
  - 6.3.4 Demonstrating Commitment
  - 6.3.5 Showing Awareness of Safety Issues
  - 6.3.6 Complying with Legal Obligations

7 Adapting and Coping
- 7.1 Adapting and Responding to Change
  - 7.1.1 Adapting
  - 7.1.2 Accepting New Ideas
  - 7.1.3 Adapting Interpersonal Style
  - 7.1.4 Showing Cross-cultural Awareness
  - 7.1.5 Dealing with Ambiguity
- 7.2 Coping with Pressure and Setbacks
  - 7.2.1 Coping with Pressure
  - 7.2.2 Showing Emotional Self-control
  - 7.2.3 Balancing Work and Personal Life
  - 7.2.4 Maintaining a Positive Outlook
  - 7.2.5 Handling Criticism

8 Enterprising and Performing
- 8.1 Achieving Personal Work Goals and Objectives
  - 8.1.1 Achieving Objectives
  - 8.1.2 Working Energetically and Enthusiastically
  - 8.1.3 Pursuing Self-development
  - 8.1.4 Demonstrating Ambition
- 8.2 Entrepreneurial and Commercial Thinking
  - 8.2.1 Monitoring Markets and Competitors
  - 8.2.2 Identifying Business Opportunities
  - 8.2.3 Demonstrating Financial Awareness
  - 8.2.4 Controlling Costs
  - 8.2.5 Keeping Aware of Organizational Issues

Note that each component is further defined within the framework in terms of negative and positive behavioral indicators.

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