Personnel Selection, Psychology of

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This article is a revision of the previous edition article by H. Schuler, volume 16, pp. 11343–11348, © 2001, Elsevier Ltd.

Abstract

Personnel selection is a very important component of human resource management toward creating and sustaining effective organizations. In this article, we argue that organizations can best build a successful workforce by using systematic selection procedures that employ approaches and methods from the field of industrial and organizational psychology. Thus, we describe job analysis to identify the performance requirements of jobs, as well as the knowledge, skills, and other personal characteristics necessary to be successful in each of these target jobs. This, in turn, drives the choice of assessments to evaluate applicants most likely to be effective employees, and we describe these kinds of assessments.

When an organization has a certain number of positions to fill and more applicants than positions, some type of selection process is necessary to place applicants in the jobs. Of course, this can be handled quite casually by conducting unstructured interviews and selecting people who seem most qualified for each position. Or, we can take a more systematic approach by conducting a job analysis for each of the target jobs, choosing or developing assessments to evaluate each applicant's predicted performance on one of these jobs, and then selecting an applicant who performs very well on the assessments and is thus presumably well qualified for the position. This more systematic approach typically involves an additional step in which the validity of the assessment process is evaluated to ensure the process is selecting individuals who do in fact perform effectively on the job.

The following sections discuss this more systematic approach to personnel selection. We first describe basic job analysis procedures and then one result of these procedures, the development of performance requirements or criteria. These criteria can inform the choice of predictors. Measurement of these criteria can also help in the predictor validation process to be described toward the end of this article.

Next, we present the variety of types of tests (e.g., personality, vocational interests) and other predictors (e.g., structured interviews). And finally, we discuss the validation process to evaluate the effectiveness of the predictors' identification of applicants who turn out to be high-performing employees.

Job and Work Analyses

Job analysis is a process of systematic inquiry aimed at discovering and documenting the essential nature of work (Brannick et al., 2007). Job analysis can be used for a variety of purposes including personnel selection, training, job design, and compensation. For personnel selection purposes, job analysis is concerned with identifying work behaviors and the knowledge, skills, abilities, and other characteristics (KSAOs) needed to perform those work behaviors. On the predictor side, job analysis is concerned with identifying the KSAOs and developing or using existing tests to measure them. On the criterion side, job analysis involves identifying job performance measures that tap the important performance requirements of the job and inform on KSAOs needed to perform effectively on the job.

Criterion Development and Measurement

It is now widely accepted that job performance is a multidimensional construct (Sackett and Lievens, 2008). The most commonly studied dimensions include task performance, citizenship performance, adaptive performance, and counterproductive work behaviors.

Task Performance

Task performance refers to the technical proficiency part of job performance (Borman et al., 2010). Task performance can be measured objectively or subjectively. Although objective measures of job performance look appealing, for most jobs they only tap into part of the criterion space. Objective criteria include production rates, sales, work samples, and job knowledge tests. Subjective criteria are the typical performance ratings usually provided by a supervisor. Performance ratings are the most commonly used criterion measures in industrial and organizational psychology research and practice.

At least six taxonomies examining the dimensionality of task performance have been proposed (e.g., Borman and Brush, 1993; Borman et al., 1994; Hunt, 1996). Borman et al. (2010) summarized the common content across the six taxonomies. All of the taxonomies involve content related to communication and productivity/proficiency. Personal qualities and skills are reflected in five taxonomies. Problem solving, organizing/planning, and leadership/supervision are represented in four taxonomies. Accordingly, these are some of the exemplars we expect to see representing task performance dimensions such as those just identified. Task performance is usually measured by asking supervisors to rate their subordinates on various behaviors relevant for the job. Several rating formats are

available including Behaviorally Anchored Rating Scales (Smith and Kendall, 1963), Behavior Summary Scales (Borman, 1979), Behavior Observation Scales (Latham and Wexley, 1981), and Computer Adaptive Rating Scales (Borman et al., 2001). To improve the quality of the ratings, raters can be trained using rater error training (which shows raters the common psychometric and perceptual errors commonly made) and frame-of-reference training (which familiarizes raters with the content of each performance dimension).

Citizenship Performance

In addition to task performance, employees engage in activities that support the broader work environment. These activities constitute the contextual or citizenship performance domain (Borman and Motowidlo, 1993). Since the introduction of organizational citizenship behavior (OCB) in the early 1980s (e.g., Smith et al., 1983), researchers proposed several taxonomies and Podsakoff et al. (2000) identified more than 30 unique dimensions for OCB or contextual performance. Coleman and Borman (2000) integrated the various dimensions into a three-dimensional interpretation consisting of personal support, organizational support, and conscientious initiative. A general and commonly used distinction is made between citizenship performance activities targeted at individuals and performance activities targeted at the organization. Citizenship performance can be measured using supervisor ratings; however, peer and self-ratings are also commonly used, with some authors (e.g., Allen et al., 2000) suggesting that peers are the best source for the ratings.

Adaptive Performance

Adaptive performance refers to behaviors that meet the demands of a new or changed situation or event. Pulakos et al. (2000) developed an eight-dimension taxonomy of adaptive performance (e.g., solving problems creatively, learning new tasks and procedures). Adaptive performance is distinct from task and citizenship performance (Hesketh et al., 1996). Adaptive performance is predicted by cognitive ability, self-efficacy, and achievement motivation (Chen et al., 2005; Pulakos et al., 2000, 2002). Jobs differ in their adaptability requirements (Pulakos et al., 2000) with most of the adaptive performance research being conducted on military samples.

Counterproductive Work Behaviors

Counterproductive work behaviors (CWB) are behaviors that are intended to harm the organization and its stakeholders (Spector and Fox, 2005). The most common CWB typology distinguishes between CWB targeted at the organization and CWB targeted at the individuals (Robinson and Bennett, 1995). Spector et al. (2006) proposed a more refined taxonomy consisting of five dimensions: abuse, production deviance, sabotage, theft, and withdrawal. Due to their nature (CWB are behaviors most likely performed without observers), CWB are primarily assessed using self-reports. Alternative sources for the assessment of CWB include coworker reports (Fox et al., 2007) or objective indicators retrieved from organizational records (e.g., Ilie et al., 2012).

These and other criterion measures are used to evaluate the validity of predictors in a personnel selection context. A wide variety of tests and other predictors have been used to aid in selecting employees.

Types of Predictors

Cognitive Ability

Cognitive ability is defined as a general mental capability involving reasoning, problem solving, planning, abstract thinking, complex idea comprehension, and learning from experience (Gottfredson, 1997). Probably the most comprehensive taxonomy for cognitive abilities is the three strata model derived by Carroll (1993). The first stratum consists of specific and narrow abilities, the second includes group factors and broad abilities, and the third stratum is general intelligence or g (Ones et al., 2012).

Cognitive ability is widely considered the best predictor of job performance (Schmidt and Hunter, 1998). *Meta*-analytic reviews and primary studies link cognitive ability to job performance in both United States and European countries (Ispas et al., 2010; Ones et al., 2012). The predictive validity of cognitive ability depends on the complexity of the job with the strongest validity coefficients observed for highly complex jobs (Ones et al., 2012). Cognitive ability impacts job performance through job knowledge acquisition (Borman et al., 1991, 1993); high cognitive ability individuals are better equipped to acquire the knowledge needed to perform their jobs at the highest levels. The *meta*-analytic estimate of the general cognitive ability–overall job performance relationship is 0.51.

A small number of studies examined citizenship performance or CWB as criteria. Alonso et al. (2008) *meta*-analyzed 13 studies linking cognitive ability and citizenship performance and found an uncorrected correlation of 0.05. When using CWB as the criterion, the results show validity coefficients around −0.15 to −0.20 (Ones et al., 2012). Dilchert et al. (2007) reported a corrected correlation of −0.33 between cognitive ability and objectively measured CWB.

Personality

Until the early 1990s, the general attitude in the field of industrial and organizational psychology was that personality is not an important predictor of job performance. The emergence of the Five Factor Model (FFM) of personality and the publication of several *meta*-analytic reviews (e.g., Barrick and Mount, 1991; Tett et al., 1991) led to a renewed interest in personality in personnel selection. According to the FFM, personality can be organized into five major domains: emotional stability/neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The FFM personality domain has been linked with all of the performance domains: task, citizenship, adaptive, and CWB.

The FFM traits most consistently related to task performance across jobs are conscientiousness and emotional stability (Hurtz and Donovan, 2000; Barrick et al., 2001). Contextualized personality measures (created when scale items include 'at

work' to specify the intended context for the item rather than at home or in general, for example) show a higher predictive validity compared with noncontextualized measures (Shaffer and Postlethwaite, 2012).

For predicting citizenship performance, early *meta*-analyses showed that the FFM traits of conscientiousness and agreeableness had the strongest correlations (Borman et al., 2001). However, the most recent *meta*-analysis (Chiaburu et al., 2011) found that conscientiousness, agreeableness, and openness are the best predictors, and even the FFM traits of extraversion and emotional stability are important by showing incremental validity over conscientiousness and agreeableness. Overall, the FFM shows stronger associations with citizenship performance (multiple $R = 0.28$) than with task performance (multiple $R = 0.19$; Chiaburu et al., 2011).

For CWB, conscientiousness, agreeableness, and emotional stability emerge as the most consistent predictors (Berry et al., 2007; Dalal, 2005). Conscientiousness is more strongly related to CWB targeted at the organization (−0.34) than CWB targeted at individuals (−0.19), whereas Agreeableness shows the opposite pattern (−0.36 for individual CWB and −0.25 for organizational CWB). Emotional stability shows similar relationships with both interpersonal CWB (−0.20) and organizational CWB (−0.19).

In addition to the FFM domains, research has also examined the predictive validity of the facets that constitute the domains (Judge et al., 2013). The achievement striving facet of conscientiousness emerged as the best predictor with an estimated corrected correlation of 0.20 for task performance and 0.29 for citizenship performance.

Although the validities of personality tests have been criticized as being small (e.g., Morgeson et al., 2007), personality has incremental validity over cognitive ability (Schmidt and Hunter, 1998) and allows organizations to achieve diversity goals, that is, hiring more qualified minorities (Hough et al., 2001). Additionally, the validities of personality are larger when using all the FFM traits together (Barrick and Mount, 2012).

Several investigations also showed that the relationship between personality and job performance depends on the context. Meyer et al. (2009), in a *meta*-analytic review, found that the relationship between conscientiousness and job performance was stronger in weak situations (situations low in constraints, e.g., more autonomous). Additionally, some studies found evidence for a curvilinear effect of personality. For example, Grant (2013), in examining the relationship between extraversion and sales performance, found that the most successful employees in terms of sales were 'ambiverts' – those with average levels of extraversion.

In addition to the FFM of personality, several other traits have been linked to job performance. Proactive personality has been related to both task and citizenship performance (Greguras and Diefendorff, 2010). In some cases, non-FFM traits have shown stronger links with performance outcomes. One such example is trait anger which shows stronger links with CWB than any of the FFM traits (Herschovis et al., 2007; Ilie et al., 2012).

Although personality for selection purposes is primarily assessed using self-report inventories, research suggests that other reports (e.g., coworkers) can be more valid predictors of job performance (Connelly and Ones, 2010; Oh et al., 2011). Using other reports can alleviate some of the concerns such as applicant faking raised against the use of personality assessments for personnel selection.

Vocational Interests

Vocational interests are noncognitive constructs defined as relatively stable individual preferences for certain types of work (Harmon et al., 1994). An early *meta*-analysis (Hunter and Hunter, 1984) ranked interests second to last of 11 predictors relative to their predictive potential (only age was less predictive) with a mean validity of 0.10. However, the Hunter and Hunter (1984) *meta*-analysis was based on only three studies. Van Iddekinge et al. (2011a) conducted an updated *meta*-analysis across 74 studies and found mean validities of 0.14 against job performance, 0.26 for training performance, –0.19 for turnover intentions, and −0.15 for actual turnover. Furthermore, in a primary study, Van Iddekinge et al. (2011b) found that vocational interests show incremental validity over cognitive ability and personality for predicting job performance factors. Another line of research focused on using a different conceptualization of vocational interests based on profile coefficients. Following this approach, Nye et al. (2012) found even higher predictive validity ($r = 0.36$) between a congruence index and task performance. In a primary study, Iliescu et al. (in press) found that the congruence index shows incremental validity over personality for the prediction of CWB. Taken together, results of these studies should lead to a reassessment of the role vocational interests can play in personnel selection.

Emotional Intelligence

Emotional intelligence (EI) refers to the mental processes involved in recognizing, using, understanding, and managing one's own and others' emotional states to solve problems and regulate behavior (Mayer and Salovey, 1997; Salovey and Mayer, 1990). There are two major conceptualizations of EI: ability-based EI and trait-based EI (Lievens and Chan, 2010). EI can be measured using self-reports (where the respondents indicate their agreement with descriptive statements, similar to personality tests), and ability-based tests that ask questions about emotions and have right and wrong answers. The link between EI and job performance has been examined in two recent *meta*-analytic investigations (Joseph and Newman, 2010; O'Boyle et al., 2010). In both *meta*-analyses, EI was found to predict job performance. Furthermore, EI showed incremental validity over cognitive ability and personality (O'Boyle et al., 2010), particularly for jobs high in emotional labor, that is, requiring effort to get along with others (Joseph and Newman, 2010). More recently, a primary investigation by Iliescu et al. (2012) found that an ability-based test of EI showed incremental validity over cognitive ability and FFM for jobs where social interactions are important (such as customer service and managerial jobs) and linked CEO EI to institutional performance.

Interviews

Unlike cognitive ability, personality, interests, or EI, interviews are a method not a construct (Arthur and Villado, 2008). Interviews are considered the most commonly used method for

personnel selection in all setting (Ryan et al., 1999). Huffcutt et al. (2001) examined the constructs assessed by employment interviews. They found that 35% of the questions measured personality characteristics, 26% measured social skills, 16% mental ability, 10% knowledge and skills, 4% interests and preferences, and 3% organizational fit.

An important factor that can impact the outcomes of employment interviews is their structure. Structured interviews are more valid on average in *meta*-analyses than unstructured interviews ($r = 0.51$ vs 0.38).

Validation of Predictors

Recall that in order to demonstrate the usefulness of our predictors in a performance selection context, we often empirically validate the relationship between scores on the predictors associated with applicants or job incumbents and their criterion scores assessing their job performance. A significant correlation indicates the predictors are useful in the selection process.

Until fairly recently, the process of establishing validity was conceptualized as consisting of three approaches: content validation, criterion-related validation, and construct validation. Content validation is focused on establishing that the test items are representative of the behaviors performed on the job. Criterion validation is about establishing a link between test items and the performance domain, as we have been highlighting. Construct validation is concerned with establishing that a psychological construct has meaning for job performance.

Following the publication of the most recent Standards for Educational and Psychological Tests (1999), validity is now seen as a unitary concept that requires several sources of evidence. The first source of evidence is concerned with the relationship between the predictors and other related variables. This involves convergent validity evidence (relating the predictor with other tests measuring the same construct) and discriminant validity evidence (relating the predictor with other constructs not expected to be related to the target construct). For personnel selection purposes this refers mostly to criterion-related validity evidence. (Are test scores on the predictor related to job performance measures?) Finally, we should also examine the consequences of using tests for making decisions. For personnel selection, this refers to examining whether the use of tests results in disproportionate hiring of groups (based on age, sex, race, disability level, etc.). This is usually accomplished by assessing subgroup differences in mean predictor scores.

The Society for Industrial and Organizational Psychology published a set of Principles for the Validation and Use of Personnel Selection Procedures (2003). The purpose of the principles is to "established scientific findings and generally accepted professional practice in the field of personnel selection psychology in the choice, development, evaluation, and use of personnel selection procedures designed to measure constructs related to work behavior with a focus on the accuracy of the inferences that underlie employment decisions." The main idea from these Principles is that selection predictor measures should be related to performance on the job.

Conclusion

Personnel selection can be very important for screening applicants out of and *into* jobs. Getting people into jobs where they are qualified and can be successful is obviously desirable for both the hiring organization and the employee. Personnel selection thrives in today's organization under the umbrella of talent management. This concept recognizes that selection is a critical part of building organizational human capital capabilities, in concert with training and performance management initiatives. In sum, personnel selection has a highly important role in human resource management, and, more broadly, in enhancing organizational effectiveness.

See also: Behavior Analysis, Applied; Emotions and Work; Industrial–Organizational Psychology: Science and Practice; Job Analysis and Work Roles, Psychology of; Job Satisfaction; Organizational Citizenship Behavior; Organizational Commitment; Performance Appraisal and Evaluation; Personality and Values at Work; Program Evaluation; Work Motivation.

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