

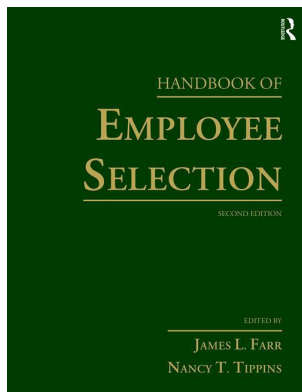
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The Business Value of Employee Selection

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THE BUSINESS VALUE OF EMPLOYEE SELECTION

WAYNE F. CASCIO AND JOHN C. SCOTT

Hiring good people is hard. Hiring great people is brutally hard. And yet nothing matters more in winning than in getting the right people on the field. All the clever strategies and advanced technologies in the world are nowhere near as effective without great people to put them to work.

Jack Welch
Winning (2005, p. 81)

Industrial and organizational (I-O) psychologists have played major roles in developing selection (or staffing) tools and implementing selection programs at every level for organizations of every size and in every industry, domestic and multinational. This chapter focuses on evaluating, monitoring, and managing the business value of employee selection. We begin by offering some general comments about the traditional model of employee selection, its focus, and its components, with particular emphasis on selection as a dynamic organizational process, the expectations of multiple stakeholders, and the need to link employee-selection goals to business imperatives. Following that discussion, we present a decision-based framework that illustrates the logic of employee selection, with particular emphasis on assessing the outcomes of selection efforts. Such outcomes may be expressed in qualitative or quantitative terms, and we illustrate both. A key focus of the chapter is to use evaluation strategically to drive effective selection programs. We then consider what managers know about employee selection, the different perspectives of I-O psychologists and managers, and what both groups should know about the value of employee selection, including technology-enhanced assessments and multimedia, immersive simulations. We conclude with a set of recommendations for managing and monitoring the business value of employee selection, including tradeoffs among managerial concerns for “better, faster, cheaper, with less adverse impact.”

TRADITIONAL MODEL OF EMPLOYEE SELECTION

I-O psychologists have developed a general approach to employee selection that has evolved over many decades (Cascio & Aguinis, 2011). Essentially, it consists of defining the work to be done, identifying individual-level characteristics that are hypothesized to predict performance with respect to the work to be done, and developing measurement instruments to assess the relative standing of job applicants on each of the individual-level characteristics (Binning & Barrett, 1989). Then applicants are rank-ordered based on their relative standing, and those with the best scores are selected for the job.

Over time, various instruments to predict future job performance have appeared, and such instruments are quite diverse, as noted in a recent review (Cascio & Aguinis, 2008a). In general, they assess information collected directly from job applicants or indirectly from other sources (e.g., past employers). Some types of measures are typically used at the beginning stages of the selection process as prescreening devices. A set of measures that is consistent with the current staffing model (Schmidt & Hunter, 1998) may include biographical data collected using application blanks (Roberts, 2011; Schmitt et al., 2007), integrity tests (Berry, Sackett, & Wiemann, 2007; Rotundo & Spector, 2017), and drug testing (Haar & Spell, 2007; Weber, 2015). Those job applicants who successfully complete the initial screening stage may be required to pass a background check (Zumbrun, 2015) and, if they do, they may be given paper-and-pencil or computer-administered tests that assess their general mental abilities (GMAs) and personality traits (Hough & Dilchert, in press; Morgeson et al., 2007; Ones, Dilchert, Viswesvaran, & Salgado, 2017), followed by an interview (Chapman & Zweig, 2005; Huffcut & Culbertson, 2011). Finally, for managerial and other high-level jobs, there may be an additional stage, including a work-sample test (Callinan & Robertson, 2000; Roth, Bobko, & McFarland, 2005) or an assessment center (Arthur & Day, 2011; Thornton, Johnson, & Church, 2017), in which applicants must demonstrate specific knowledge and skills by performing a limited number of job-related tasks in a controlled environment. With respect to work-sample tests, we do not mean to imply that they are appropriate only for high-level jobs. They can also be extremely valid predictors of performance in other jobs, such as craft jobs (electricians, plumbers, mechanics) and customer service jobs (Cascio & Aguinis, 2011).

In the past, organizations have benefited from this traditional approach of “pick good people to get good performance,” but the changing workplace is dramatically redefining personnel selection (Cascio, 2016; Economist Intelligence Unit, 2014). The next section describes some of the challenges to the business value of that approach.

CHALLENGES TO THE BUSINESS VALUE OF THE TRADITIONAL APPROACH

The following list describes seven such challenges:

1. Past behavior may not always predict future behavior (behavioral consistency), particularly if the new job differs in the types of personal characteristics necessary for successful performance. Past behavior that is relevant to future performance may predict that performance effectively.
2. Selection decisions about people and jobs are not independent events in an organization. Indeed, the broader business value of selection is often linked to other human resources (HR) processes, such as training, promotion, special assignments, staff reductions, career development, and succession planning.
3. Hiring managers do not always hire the best scorers. Validated selection techniques are rarely the only source of information for selection decision making.
4. Jobs are changing faster than we can do validation studies.
5. Assessing the business value of selection is complex, because different constituents—managers, applicants, HR professionals, and those who implement selection systems—value different outcomes.
6. The social context and social psychological processes of selection decisions are often ignored in the traditional approach. Interpersonal processes in group decision making are extremely important to the implementation of selection systems. For example, a particular decision maker’s position power, influence, and interpersonal attraction to another person may be important to understand in selecting employees.
7. Utility calculations that estimate economic returns on investments for valid selection techniques are not widely accepted or understood by business managers. Managers often do not believe the magnitude of the estimated returns because of their size and also because of the use of complex formulas with too many estimates and assumptions. To many, the dollar returns associated with improved performance are not “tangible,” and certainly less so than the dollars in one’s departmental budget. All of this suggests that few organizations, if any, view the costs related to selection as investments; rather, they consider them as expenses. Beyond that, validity coefficients of

equal size, say, 0.35, are not necessarily equally valuable to decision makers if they reference different criteria. A sales manager, for example, may or may not view a validity of .35 for predicting organizational citizenship behaviors as equal in value to a validity of .35 for predicting the dollar volume of sales.¹

The specific criteria used to establish the business value of a selection program will vary by organization. At a minimum, however, the effectiveness of any selection program can be judged by how well it (a) aligns with business strategy, (b) adapts to dynamic workforce requirements, (c) integrates with other talent-management systems, (d) meets the expectations of multiple constituents (e.g., leadership, hiring managers, HR, candidates), (e) conforms to operational requirements (e.g., validity, efficiency), and (f) contributes to valued organizational outcomes (e.g., productivity, sales, service, quality, revenue).

DYNAMIC, CONTEMPORARY APPROACH TO SELECTION AS AN ORGANIZATIONAL PROCESS

This section presents a broader framework for understanding and valuing selection as an organizational process. Rather than considering selection as an independent event whose sole purpose is to identify the best people to perform specific jobs, we propose a broader, macro approach to the business “value added” of the selection process. This contemporary approach integrates the traditional approach as a “good start” for designing selection systems (the use of validated selection tools), but certainly not “the end.” We begin our discussion by examining four contemporary drivers that frame selection as a dynamic organizational process:

1. Dynamic change and change management
2. Expectations of multiple organizational stakeholders
3. Selection beyond hiring and HR management
4. The importance of social context and interpersonal processes in selection decisions

Dynamic Change and Change Management

Selection procedures need to be flexible and adaptable to changing organizations. Significant future human capital challenges will be recruiting, staffing, and retention (Economist Intelligence Unit, 2014; Groysberg & Connolly, 2015). Previously we discussed the speed of organizational change. Numerous authors have cited the drivers of that change as shifting demographics, rapid changes in technology, higher expectations from customers, increased competition and globalization, and more intense pressure from shareholders as having the greatest impact on people and jobs (Cascio & Aguinis, 2008a; Schatsky & Schwartz, 2015).

The message is clear: The traditional, static model of selection needs to be “reinvented” or “reengineered” to select people to perform changing jobs in changing organizations. No job or career today is “safe and secure.” The value of selection for an organization is predicated on how people perform in the context of changing organizations. Several authors have presented models of job-person, team-person, and organization-person assessments (Anderson, Lievens, van Dam, & Ryan, 2004; Cascio & Aguinis, 2008b; Pearlman & Barney, 2000). Organizations have merged, acquired, downsized, and reorganized to become more flexible, adaptable, efficient, and high performing. The impact of change on talent acquisition for jobs is two fold: (a) new jobs are created and old jobs are redefined, enriched, or eliminated; and (b) people are recruited, selected, developed, or eliminated.

Pearlman and Barney (2000) noted some significant outcomes of these changes for selection processes:

- Increased use of performance competencies (variables related to overall organizational fit, as well as personality characteristics consistent with the organization’s vision (Brannick, Pearlman, & Sanchez, 2017; Schippmann, 2010; Schippmann et al., 2000; Weber & Dwoskin, 2014)

The Business Value of Employee Selection

- The value placed on intellectual capital and learning organizations
- The value of speed, process improvement, and customer services

They offered a contemporary model of work performance with two distinguishable components: (a) task performance of a specific job and (b) contextual performance—performance related to organizational and social performance activities. Contextual performance includes three levels of analysis: external, organizational, and the immediate work or job context. Table 10.1 describes their model of worker-attribute categories needed to predict success beyond job performance per se.

The key challenge in predicting performance at any level is that our current selection methods have demonstrated limited usefulness, despite 80 years of staffing research. Limitations of the current approach include the following (Cascio & Aguinis, 2008a): a near exclusive focus at

TABLE 10.1
Definitions and Examples of Work-Performance Model Worker-Attribute Categories

Attribute Category	Definition	Examples
Aptitude and abilities	Capacity to perform particular classes or categories of mental and physical functions	Cognitive, spatial/perceptual, psychomotor, sensory, and physical abilities
Workplace basic skills ^a	Fundamental developed abilities that are required to at least some degree in virtually all jobs	Reading, writing, and arithmetic or computational skills
Cross-functional skills	Various types of developed generic skills that are related to the performance of broad categories of work activity and that tend to occur across relatively wide ranges of jobs	Oral communication, problem analysis, interpersonal skills, negotiating, information gathering, organizing, planning, and teamwork skills
Occupation-specific skills	Developed ability to perform work activities that occur across relatively narrow ranges of jobs or are defined in relatively job- or activity-specific terms	Ability to read blueprints, to repair electrical appliances, to operate a milling machine, to operate a forklift, to do word processing
Occupation-specific knowledge	Understanding or familiarity with the facts, principles, processes, methods, or techniques related to a particular subject area, discipline, trade, science, or art; includes language proficiency	Knowledge of financial planning and analysis, fire-protection systems, computer graphics, data communication networks, patent law, Spanish, COBOL, spreadsheet software
Personal qualities (also known as personality traits, temperaments, or dispositions)	An individual's characteristic, habitual, or typical manner of thinking, feeling, behaving, or responding with respect to self and others, situations, or events	Adaptability, empathy, conscientiousness, self-esteem, autonomy, sociability, service orientation, emotional stability, integrity, honesty
Values	Goals, beliefs, or ideals an individual holds as important and that function as the standards or criteria by which he or she evaluates things	Empowerment, cooperation, achievement, initiative, work ethic
Interests	An individual's characteristic work-related preferences or likes and dislikes regarding specific (or classes of) work activities	Realistic, investigative, artistic, social, enterprising, and conventional

^aWorkplace basic skills are differentiated from aptitudes and abilities because of their significant knowledge and learning components.

Source: From Pearlman, K., & Barney, M., Selection for a changing workplace, in J. Kehoe (Ed.), *Managing selection in changing organizations: Human resource strategies*, Jossey-Bass, San Francisco, CA, 2000. Used with permission.

the level of the individual, the assumption of behavioral consistency, a focus on thin slices of behavior and behavior that may not be representative of actual performance on a job, selection systems that produce high levels of adverse impact, overestimation of expected economic payoffs from the use of valid selection procedures, and limited applicability of the traditional model when applied to executives and expatriates.

Although many existing selection methods perform well, we believe that if selection strategies are to be more useful in response to rapidly changing organizations, then we need to broaden our perspectives of the relevant criterion space and criterion constructs, from a focus on predicting task performance *per se*, to in situ performance (Cascio & Aguinis, 2008a). In situ performance reflects the broad range of effects—situational, contextual, strategic, and environmental—that may affect individual, team, or organizational performance. Such specification provides a richer, fuller, context-embedded description of the criterion space that we wish to predict. As just one example, the construct of adaptability (Pulakos, Arad, Donovan, & Plamondon, 2000) may well be a key predictor of success in a rapidly changing organization.

A related consideration for utility researchers is the meaning of the parameter t in the general utility equation (see Cascio & Boudreau, 2011a, 2011b). Traditionally, that parameter represents the average tenure of individuals in a given job. Perhaps a more nuanced view is to define t as the length of time that the constructs measured by the current selection system remain relevant. The faster that jobs and organizations change, the lower the value of t .

Expectations of Multiple Organizational Stakeholders

Since a selection program affects the business in so many ways, some customers and stakeholders will have unique expectations of its value and will generally want to have input into its ultimate direction. Therefore, these stakeholder groups should be carefully identified and solicited for input as part of the planning and implementation effort (Jayne & Rauschenberger, 2000; Scott, Rogelberg, & Mattson, 2010). These various constituents of employee selection have similar, but sometimes competing, values and expectations. Balancing these competing needs is critical to implementing successful selection systems.

The following sections discuss some typical categories of stakeholders whose input and perspective should be considered.

Executive Team

This group's primary focus is strategic and financial, and as such, they will want assurances that the selection program will deliver a high-performing workforce that can drive revenues, shareholder value, growth, competitive advantage, and long-term sustainability. The selection program will need to align with long-term business strategy and also address more immediate issues such as retention, diversity, employee engagement, and the creation of a robust talent pipeline.

Line Managers

This group is responsible for implementing business strategy, and therefore will heavily rely on practices that can support their talent management accountabilities, particularly the acquisition of top talent. Line managers value benchmarking evidence about the “best” selection systems, administrative efficiency (cycle time to fill a position), process metrics (costs and results), and process reliability to meet the needs of different organizational units (Jayne & Rauschenberger, 2000). These individuals should therefore play a critical stakeholder role in the evaluation and implementation of a selection program.

Selection-Program Managers

HR typically manages an organization’s selection program. HR managers are particularly concerned that selection systems are aligned with diversity and affirmative action goals, meet stakeholder needs, integrate with other talent management systems, and run as efficiently as possible.

Job Candidates

Candidates value administrative efficiency, company reputation, relationship of pre-hire assessments to the job, fairness of the process, and quality of the information received about the job.

Solicitation of input from the stakeholder groups listed above should occur both during the planning phase and on an ongoing basis following the implementation of the selection program. As such, it is critical to clarify the business challenges and key strategic priorities that the selection program is attempting to address. It will be particularly critical to gather input early on from the executive stakeholders to ensure that the employee-selection goals link to the organization’s business imperatives. Once an organization’s priorities have been established, a plan can be developed for how the selection program can best be leveraged to advance the business strategy. We will present specific strategies for establishing the goals, and action steps to link the selection program to these goals, later in the chapter, in the section entitled *Strategic Use of Evaluation to Drive Selection-Program Effectiveness*.

Selection: Beyond Hiring and HR Management

Employee selection is more complex than hiring a qualified employee to perform a particular job. Higgs, Papper, and Carr (2000) emphasized the important point that selection processes and techniques are often keys to the effective execution of other HR processes. Table 10.2, adapted from Higgs et al. (2000), describes how other HR processes depend on selection.

As stated earlier, selection is a key component in the overall life cycle of an individual’s employment with an organization. That life cycle includes changing jobs and changing people.

TABLE 10.2

HR Processes That Depend Upon Selection

Hiring	Multiple-stage process using various techniques and types of information for mutual selection decision by organization and candidate
Training	Selection for participation in particular training programs
Performance management	Selection for effective performance in a given assignment or role
Promotion	Selection for limited promotional opportunities or for job families or job levels with limited population sizes
Special assignments	Selection for assignments to task forces, committees, special projects
Career development	Selection for development processes, programs, or mentors
Succession planning	Selection for inclusion in replacement-planning or succession-planning databases or management-planning sessions

Source: Adapted from Higgs, A. C., Papper, E. M., & Carr, L. S., Integrating selection with other organizational processes and systems, in J. Kehoe (Ed.), *Managing selection in changing organizations: Human resource strategies*, Jossey-Bass, San Francisco, CA, 2000. Used with permission.

Importance of Social Context and Interpersonal Processes in Selection Decisions

Several authors (Cascio & Aguinis, 2008a; 2008b; Ramsay & Scholarios, 1999) have challenged the traditional I-O psychology selection process for being too micro in its orientation and for failing to integrate the social context and interpersonal processes into selection decisions. Beyond the individual differences of job applicants, these authors argue (and we agree) that the cognitive processes of key decision makers, organizational characteristics, strategic goals, group processes, and contextual factors constrain and shape a manager's actual staffing decisions.

In contrast, the traditional psychometric paradigm of selection necessarily assumes that (a) effective (and ineffective) performance in most jobs can be reduced to relatively stable, observable behaviors and static job demands; (b) intra- and inter-individual differences in human capacities (knowledge, skills, abilities, and other characteristics, or KSAOs) account for most differences in job performance; and, consequently, that (c) effective staffing decisions depend largely on the efficient processing of information about job-related human capacities.

In practice, selection decisions are made based on the social context as well as individual differences. Boudreau, Sturman, and Judge (1994) and others, including Skarlicki, Latham, and Whyte (1996), Latham and Whyte (1994), and Whyte and Latham (1997), have raised serious concerns about the ways that hiring managers actually use selection information in decision making, specifically, about how they use "rational" selection data (e.g., test scores). There may be only a weak link between rational selection information and actual selection decisions. Therefore, managers may actually ignore valid information in their decisions to adopt particular information-gathering procedures, being more receptive to other, "unscientific" sources of persuasion (Ramsay & Scholarios, 1999).

In fact, important social-psychological phenomena operate in selection decisions, including interpersonal attraction, interviewer biases in processing information, the power and influence of managers/executives to shape the perceptions of others, and the inclusion of non-job-specific behaviors (e.g., organizational citizenship and pro-social behaviors) as important selection criteria for hiring managers (Anderson et al., 2004; Dorsey, Cortina, & Luchman, 2017; Motowidlo, 2003; Organ, Podsakoff, & Podsakoff, 2011).

In light of these changes, and the contemporary view of selection as a dynamic organizational process, it is important that we articulate the rationale for evaluating the business value of employee selection. The next section considers that topic in greater detail.

RATIONALE FOR EVALUATING THE BUSINESS VALUE OF EMPLOYEE SELECTION

As Rynes, Giluk, and Brown (2007) have noted, management is not truly a profession like medicine, education, or law. There is no requirement that managers be exposed to scientific knowledge about management, that they pass examinations to become licensed to practice, or that they pursue continuing education to be allowed to maintain their practice. Although they might not be familiar with statistical terminology and methodology, the language of science, managers tend to be very smart people who grasp ideas quickly and process information critically and analytically. To many of them, employee selection is a cost, not an investment, and, as with any other area of business, they want to minimize their costs. This is the origin of the mindset and desire of managers for selection methods that are "better, faster, cheaper, with less adverse impact."

As we shall demonstrate, many, if not most, assessments of the outcomes of employee-selection efforts are expressed in statistical terms, at least in the scientific literature. Because extremely few managers read such literature, including academic publications (Rynes, Colbert, & Brown, 2002), they are simply unaware of much of this potentially valuable information. Managers and academics exist in different "thought worlds" (Cascio, 2007); therefore, an ongoing challenge is to educate managers about the business value of selection efforts and to enable them to see those efforts as investments that will generate a stream of benefits over time. We hasten to add that the term "business value" does not imply that all outcomes must be expressed exclusively in monetary or quantitative terms. Indeed, as we shall demonstrate,

much of the business value of selection may be expressed in qualitative terms (e.g., improvements in customer service, team dynamics, or innovations).

Assessing the Outcomes of Employee Selection

In theory, there are multiple strategies for assessing the outcomes of employee selection. In general, they comprise two broad categories: quantitative (or statistical) and qualitative (or behavioral). Four common statistical approaches to evaluation are validity coefficients, effect sizes, utility analyses, and expectancy charts. Of these, validity coefficients and effect sizes are currently most popular.

Validity coefficients are typically expressed in terms of Pearson product-moment correlation coefficients that summarize the overall degree of linear relationship between two sets of scores: those on the predictor in question (e.g., a test of GMA) and a criterion (some measure of job performance). Chapters 2, 3, and 4 in this volume address the concept of validity, the validation process, and validation strategies in considerable detail, so we need not repeat that information here.

Using the methods of meta-analysis (Le, Oh, Shaffer, & Schmidt, 2007; Schmidt & Hunter, 2003; 2014) to express cumulative results across validity studies that have used the same predictor over time and situations, researchers typically have expressed their results in statistical (i.e., correlational) terms. For example, summarizing the results of 85 years of research findings in employee selection, Schmidt and Hunter (1998) reported that the top ten predictors of subsequent job performance are GMA tests (meta-correlation of .51), work-sample tests (.54), integrity tests (.41), conscientiousness tests (.31), structured employment interviews (.51), unstructured employment interviews (.38), job-knowledge tests (.48), job-tryout procedures (.44), peer ratings (.49), and ratings of training and experience (.45).

Some validity studies express outcomes in terms of effect sizes. An effect size expresses the degree to which a phenomenon is present in a population of interest, or, alternatively, the degree to which a null hypothesis is false (Cohen, 1988). The null hypothesis (“no difference”) always means that the effect size is zero, as when two tests are compared to determine which one is the better predictor of some criterion of job performance. Regardless of which statistic is used to compare the results of the tests (e.g., Pearson product-moment correlation, t , z , or F), each has its own effect-size index. The only requirement for an effect-size index is that it be a pure (dimensionless) number, one not dependent on the units of the measurement scales (Cohen, 1988). Examples include the population correlation coefficient or the difference between two means expressed in units of standard deviation. Many studies in the behavioral sciences express outcomes in terms of effect sizes (e.g., see Murphy, Myors, & Wolach, 2014).

Many operating executives may be unfamiliar with validity coefficients and effect sizes. Even when they are, they may view these indexes as too abstract from which to draw implications about the effects of employee-selection efforts on their businesses. In such situations, utility analyses and expectancy charts may be valuable, for they express the outcomes of selection in monetary terms or in terms of the likelihood of success on a job, given a particular level of performance on a selection procedure. We consider each of these approaches in the following sections.

Utility Analyses

The utility of a selection device is the degree to which its use improves the quality of the individuals selected beyond what would have occurred had that device not been used (Taylor & Russell, 1939). Because the technical details of utility analysis have been addressed elsewhere (Boudreau & Ramstad, 2003; Boudreau, 1991; Cabrera & Raju, 2001; Cascio & Boudreau, 2011a; 2011b), we focus here only on the logic of utility analysis as illustrated in Figure 10.1.

At its core, utility analysis considers three important parameters: quantity, quality, and cost. The top row of Figure 10.1 refers to the characteristics of candidates for employment as they flow through the various stages of the staffing process. At each stage, the candidate pool can be thought of in terms of the quantity of candidates, the average and dispersion of the quality

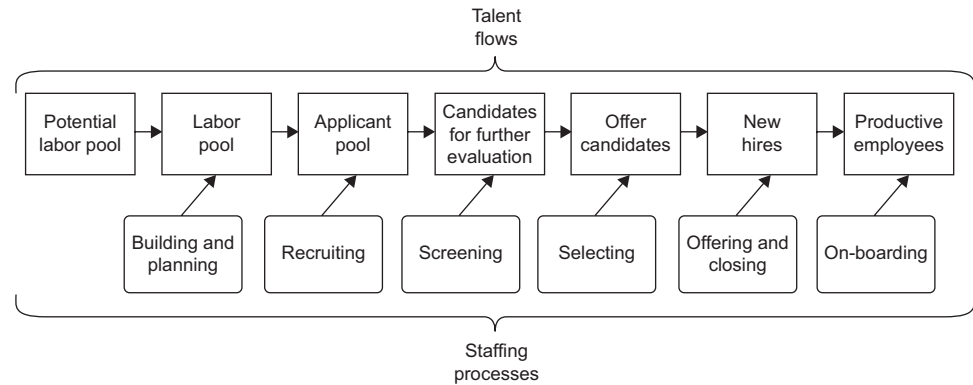


FIGURE 10.1 The Logic of Utility Analysis

(From Cascio, W., and Boudreau, J., *Investing in People: Financial Impact of Human Resource Initiatives*, 2nd ed., Pearson, New York. ©2011. Reprinted by permission of Pearson Education, Inc., New York, New York.)

of the candidates, and the cost of employing the candidates. For example, the “applicant pool” might have a quantity of 100 candidates, with an average quality value of \$75,000 per year and a variability in quality value that ranges from a low of \$50,000 to a high of \$125,000. This group of candidates might have an anticipated cost (salary, benefits, training, and so on) of 70% of their value. After screening and selection, the “offer candidates” might have a quantity of 50 who receive offers, with an average quality value of \$90,000 per year, ranging from a low of \$50,000 to a high of \$115,000. Candidates who receive offers might require employment costs of 80% of their value, because they are highly qualified and sought-after individuals. Eventually, the organization ends up with a group of “new hires” (or promoted candidates in the case of internal staffing), who can also be characterized by quantity, quality, and cost.

Similarly, the bottom row of Figure 10.1 reflects the staffing processes that create the sequential filtering of candidates. Each of these processes can be thought of in terms of the quantity of programs and practices used, the quality of the programs and practices, as reflected in their ability to improve the value of the pool of individuals that survives, and the cost of the programs and practices in each process. For example, as we have seen, the quality of selection procedures is often expressed in terms of their validity, or accuracy in forecasting future job performance. Validity may be increased by including a greater quantity of assessments (e.g., a battery of selection procedures), each of which focuses on an aspect of KSAOs that has been demonstrated to be important to successful performance on a job. Higher levels of validity imply higher levels of future job performance when the same number of candidates is selected or promoted, thereby improving the overall payoff to the organization. As a result, those candidates who are predicted to perform poorly never get hired or promoted in the first place. Decision makers naturally focus on the cost of selection procedures because costs are so vividly depicted by standard accounting systems, but the cost of errors in selecting, hiring, or promoting the wrong person is often much more important.

Utility analysis has achieved limited success in translating the value of valid selection procedures into terms that managers and organizational decision makers understand (Cascio & Boudreau, 2011b). Unfortunately, in many cases such analyses lack credibility because of complex formulas and dollar-based return-on-investment analyses that seem “too good to be true” (Ashe, 1990; Cascio, 1993; Schmitt & Borman, 1993). Indeed, one may logically ask, if the return on investment associated with such programs is so high, then why don’t all companies invest substantial amounts of resources in them? The answer is that the actual returns are likely to be considerably lower than the estimated returns, because researchers have tended to make simplifying assumptions with regard to variables like economic factors that affect payoffs and to omit others that add to an already complex mix of factors.

Economic factors include the effects of taxes, discounting, and variable costs. Other relevant factors are employee flows into and out of the workforce, probationary periods (the difference in performance between the pool of employees hired initially and those who survive a probationary period), the use of multiple selection devices, and rejected job offers. One study used computer simulation of 10,000 scenarios, each of which comprised various values of these five factors (Sturman, 2000). Utility estimates were then computed using the five adjustments applied independently. The median effect of the total set of adjustments was -91% (i.e., the adjusted values were, on average, 91% lower than the unadjusted values), with a minimum effect of -71% and negative estimates 16% of the time. Although most utility estimates for the simulated scenarios remained positive, the five modifications had sizable and noteworthy practical effects. These results suggest that although valid selection procedures may often lead to positive payoffs for the organization, actual payoffs depend significantly on organizational and situational factors that affect the quantity, quality, and cost of the selection effort.

Expectancy Charts and Performance Differences Between High and Low Scorers

Expectancy charts allow managers to see graphically the likelihood that, for example, each quintile of scorers on an assessment procedure will perform successfully on a job. More formally, organizational or institutional expectancy charts depict the likelihood of successful criterion performance to be expected from any given level of predictor scores. Individual expectancy charts depict the likelihood of successful criterion performance to be expected by an individual score at any given level on an assessment procedure. Figure 10.2 shows these two types of expectancy charts.

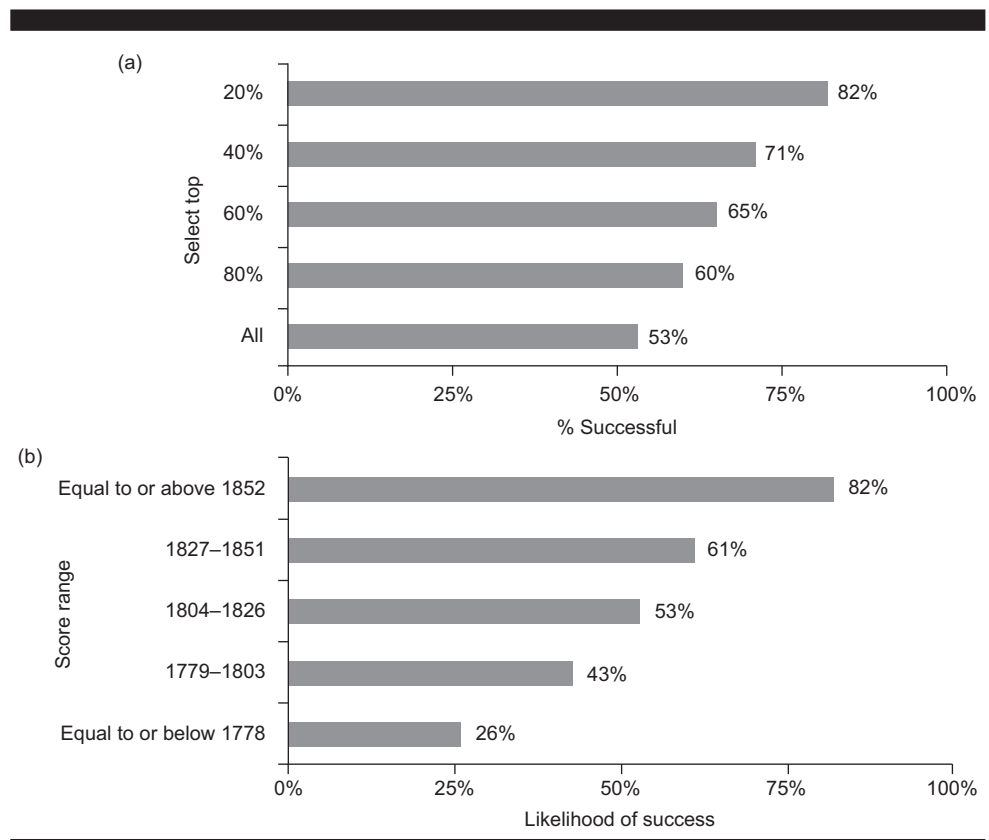


FIGURE 10.2 (a) Organizational Expectancy Chart, (b) Individual Expectancy Chart

The organizational expectancy chart provides an answer to the question, “Given a selection ratio of .20, .40, .60, etc., what proportion of successful employees can be expected if the future is like the past?” Such an approach is useful in attempting to set cutoff scores for future hiring programs. In similar fashion, the individual expectancy chart illustrates the likelihood of successful criterion performance for an individual whose score falls within a specified range on the predictor distribution.

Computational procedures for developing empirical expectancies are straightforward, and theoretical expectancy charts are also available (Lawshe & Balma, 1966). In fact, when the correlation coefficient is used to summarize the overall degree of predictor-criterion relationship, expectancy charts are a useful way of illustrating the effect of the validity coefficient on future hiring decisions. In situations in which tests have only modest validities for predicting job performance, test-score differences that appear large will correspond to modest scores on the expectancy distribution, reflecting the modest predictability of job performance from test scores (Hartigan & Wigdor, 1989).

Another way to demonstrate the business value of selection—in this case, the value of a testing program—is to compare performance differences among individuals who score at the top and bottom of the test-score distribution on job-related criteria. For example, managers can learn that a bank teller who scored in the top 80% on a test will serve 1,791 customers and refer 22 new customers in one month, compared to the bottom 20% of test scorers, who will serve only 945 customers and refer only 10 new customers (People Focus, 1998). Table 10.3 shows performance differences in job-related criteria across three companies in a Food Marketing Institute study of supermarket cashiers (Food Marketing Institute, 1985).

TABLE 10.3
Job-Performance Differences Among Supermarket Cashiers Who Score at the Top and Bottom 50% of a Test Battery

Company	Average	Score	Value
A	Amount over or under	Top 50%	1.53
		Bottom 50%	2.18
	Items per minute	Top 50%	19.15
		Bottom 50%	17.43
	Rings per minute	Top 50%	18.18
		Bottom 50%	17.33
	Number of voids	Top 50%	7.17
		Bottom 50%	9.08
B	Amount over or under	Top 50%	1.55
		Bottom 50%	2.37
	Items per minute	Top 50%	21.47
		Bottom 50%	17.67
	Rings per minute	Top 50%	18.29
		Bottom 50%	16.01
	Number of voids	Top 50%	6.84
		Bottom 50%	10.99
C	Amount over or under	Top 50%	1.47
		Bottom 50%	1.94
	Items per minute	Top 50%	21.60
		Bottom 50%	18.63
	Rings per minute	Top 50%	15.27
		Bottom 50%	15.92
	Number of voids	Top 50%	5.83
		Bottom 50%	5.73

In our opinion, expectancy charts, together with illustrations of performance differences between high- and low-scoring individuals on an assessment procedure, provide credible, tangible evidence of the business value of selection.

Qualitative (Behavioral) Approaches to Assessing the Outcomes of Employee-Selection Programs

Qualitative outcomes can help enrich our understanding of the actual operation of selection programs, including their efficiency and effectiveness. Qualitative outcomes can also contribute to the nomological network of evidence that supports the construct validity of selection instruments. That network relates observable characteristics to other observables, observables to theoretical constructs, or one theoretical construct to another theoretical construct (Cronbach & Meehl, 1955).

Information relevant either to the construct itself or to the theory surrounding the construct can be gathered from a wide variety of sources. Here is a practical example (Fisher, 2005). In 2002, J.D. Power's customer-satisfaction surveys ranked T-Mobile dead last in its industry, trailing Verizon, Cingular, Nextel, and Sprint. The first step toward improvement was to bring together T-Mobile's HR people and its marketing managers to sit down and talk. The idea was to change the company's hiring practices in an effort to improve the quality of customer service representatives who would be willing and able to follow through on the promises that marketing representatives made to customers.

Although this might sound like common sense, in practice the customer-contact people did not report to anyone in marketing or have any contact with them. Nor did anyone in HR, so HR was not able to understand the needs of managers in customer service, who, in turn, need people in place who can deliver on the marketers' message.

As a result of the in-depth discussions among representatives from customer service, HR, and marketing, T-Mobile instituted a new set of hiring criteria that emphasized traits like empathy and quick thinking. After all, customers want their problems resolved fast, in one phone call, and in a courteous manner. In addition, T-Mobile made sure that all employees knew exactly how they would be evaluated. By ensuring that HR and marketing were in sync, the company found that its employee-incentive plans also worked well, because hiring, performance management, and rewards all were linked to a common message and a common theme.

The broad-based effort paid off. By 2005, attrition and absenteeism each dropped 50% relative to 2002, while productivity tripled. As for T-Mobile's formerly exasperated customers, J.D. Power ranked T-Mobile number one in customer service for two years running. This example illustrates nicely how qualitative outcomes can help enrich our understanding of the actual operation of selection programs, including their efficiency and effectiveness. That approach certainly helped T-Mobile.

Strategic Use of Evaluation to Drive Selection-Program Effectiveness

To realize and communicate the business value of a selection program fully and effectively, it is critical to tie the program's solutions to valued organizational outcomes and to build metrics that "speak the language" of the stakeholders and decision makers. We need to establish a stream of evidence that implies a causal link between our program and desired organizational outcomes. This requires that we understand fully how an employee selection program within our organization can be leveraged to accomplish key business objectives and strategies. Our goal should be to position employee selection as a strategic tool for driving business success and achieving competitive advantage. While the specific criteria used to establish the business value of a selection program will vary by organization (based on multiple-stakeholder perspectives), a framework does exist for capturing these criteria and justifying stakeholder investment (Davidson & Martineau, 2007; Davidson, 2010).

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Drawing on the fields of program evaluation (Edwards, Scott, & Raju, 2003; Phillips, 1997) and balanced-scorecard methodology (Becker, Huselid, & Ulrich, 2001), it is possible to demonstrate a selection program's usefulness to all stakeholder groups and ensure that it is appropriately tied to valuable organizational outcomes and business imperatives (Scott et al., 2010). This strategic use of program evaluation ensures that a selection program is useful not only to those implementing and using the program but also to those responsible for driving overall business strategy (Davidson, 2010). The evaluation covers four key perspectives:

1. Strategic—How well does the selection program align with the organization's business strategy and key priorities?
2. Operational—How accurate, reliable, and efficient is the selection program in acquiring top talent? How well integrated is it with other talent-management systems?
3. Customer—To what extent are customer expectations met regarding the design, deliverables, and success criteria of the selection program?
4. Financial—To what extent does the selection program contribute to valued organizational outcomes (e.g., industry competitive advantage, robust talent pipeline) and bottom-line profitability?

When designing a selection program, it is critical to work with key stakeholders so that each of these perspectives is taken into account. We have found that one of the most effective ways to accomplish this and proceed through the design of a selection program is to develop a logic map. A logic map provides a structured way to establish the business case, articulate stakeholder goals, detail the steps in the process, and make course corrections along the way.

An example of a logic map is shown in Table 10.4 for a leadership-selection program.

In this case, we can see that one of the organization's long-term goals is to establish a pipeline of leaders who can broaden the business's product portfolio across diverse geographies. The short- and medium-term outcomes serve as milestones that lead to the achievement of the long-term outcomes.

For instance, in order to establish this pipeline of leaders, it is first necessary to assess a targeted group of individuals from across the enterprise (medium-term outcome). In order for these medium-term outcomes to occur, it is necessary to ensure that the leadership-competency model is aligned with business strategy and that the requirements associated with the key roles are documented (short-term outcome).

The program elements identify how these outcomes will be achieved and by whom. For example, it is necessary to involve subject matter experts from senior leadership to define the role requirements and from Talent Acquisition to validate the selection tools.

The assumed inputs in the first column identify the conditions that are necessary for the success of the program (Davidson & Martineau, 2007). A logic map like the one presented here (Table 10.4) will clarify for each stakeholder group how its objectives will be met, along with the relevant metrics against which the success of a selection program can be judged. This approach helps overcome barriers caused by statistical language by providing evidence of business value in the vernacular of the key stakeholders. By addressing the priorities of each stakeholder group—using their own metrics—it becomes a straightforward matter to justify a selection program's investment.

WHAT MANAGERS KNOW (AND DO NOT KNOW) ABOUT EMPLOYEE SELECTION

Here are six well-established findings in the field of I-O psychology regarding employee selection. A study of nearly 1,000 HR vice presidents, directors, and managers found that more than 50% of them actively disagreed with or did not know about the findings (Rynes, Colbert, & Brown, 2002).

1. Intelligence predicts job performance better than conscientiousness (Schmidt & Hunter, 1998).
2. Screening for intelligence results in higher job performance than screening for values or values fit (Meglino & Ravlin, 1998; Schmidt & Hunter, 1998).
3. Being very intelligent is not a disadvantage for performing well on a low-skilled job (Hunter, 1986; Schmidt & Hunter, 1998).

TABLE 10.4

Logic Model for Leadership Assessment and Development Program

	↑ ↓	↑	Short	Medium	Long		
	↑ ↓	↑	Participation	Activities	Short	Medium	Long
<ul style="list-style-type: none"> • Vision: Strategically select & manage talent at enterprise level 	↑ ↓	↑	<ul style="list-style-type: none"> • Industry thought leaders to frame long-term vision for leadership skills 	<ul style="list-style-type: none"> • Conduct job analysis to define competencies and leadership role requirements 	<ul style="list-style-type: none"> • Competency model and assessment tools aligned with business imperatives 	<ul style="list-style-type: none"> • Assessment of targeted group of talent across each business sector 	<ul style="list-style-type: none"> • Pipeline of leaders in place to grow broader product portfolio across diverse geographies
<ul style="list-style-type: none"> • Support: Executive sponsorship for leadership assessment and development program 	↑ ↓	↑	<ul style="list-style-type: none"> • Talent Acquisition leadership and staff to serve as project liaison 	<ul style="list-style-type: none"> • Validate strategic competency models 	<ul style="list-style-type: none"> • Assessment and development processes implemented; linked to development and succession plans 	<ul style="list-style-type: none"> • Differentiated Acceleration pools filled 	<ul style="list-style-type: none"> • Outperform competitors in selection, development, and retention of high-potential leaders
<ul style="list-style-type: none"> • Talent Pools: Robust and diverse global candidate pools 	↑ ↓	↑	<ul style="list-style-type: none"> • Senior leadership to serve as subject matter experts 	<ul style="list-style-type: none"> • Develop and validate assessment tools 	<ul style="list-style-type: none"> • All leadership roles documented against competency, experience, and contextual requirements 	<ul style="list-style-type: none"> • Development plans created and shared with leaders of all high-potential managers 	<ul style="list-style-type: none"> • Strong leadership reputation and outstanding financial performance
<ul style="list-style-type: none"> • Resources: Approved budget and resources to create evidence-based leadership assessment program; cadre of senior leaders ready to act 	↑ ↓	↑	<ul style="list-style-type: none"> • Business sector leaders and HR generalists to execute mapping 	<ul style="list-style-type: none"> • Map existing talent into Acceleration Pools based on validated assessment program 	<ul style="list-style-type: none"> • Metrics and tracking system implemented to accurately assess bench strength and other "leading indicators" 	<ul style="list-style-type: none"> • Truly differentiated multiyear development for C-Suite talent 	<ul style="list-style-type: none"> • Company established as World's #1 Talent Management Company
<ul style="list-style-type: none"> • Tools & Technology: Leadership-selection philosophy, framework, tools, and programs well established 	↑ ↓	↑	<ul style="list-style-type: none"> • Key stakeholder groups, Talent Analytics, and Finance functions 	<ul style="list-style-type: none"> • Establish strategic, operational, customer, and financial metrics 	<ul style="list-style-type: none"> • Philosophy and strategy around identification and retention of talent broadly communicated 		

Source: Adapted from Scott, J. C., Rogelberg, S. G., & Mattson, B. W. (2010). Measuring and managing the talent management function. In R. Silzer & B. Dowell (Eds.), *Strategy-Driven talent management*. Alexandria, VA: Jossey-Bass/Pfeiffer. Used with permission

4. Personality inventories vary considerably in terms of how well they predict applicants' job performance (Barrick & Mount, 1991; Gardner & Martinko, 1996).
5. Integrity tests successfully predict whether someone will steal, be absent, or otherwise take advantage of employers, although individuals can "fake good" on them (Ones, Viswesvaran, & Reiss, 1996; Ones, Viswesvaran, & Schmidt, 1993).
6. Integrity tests do not have adverse impact on racial minorities (Ones & Viswesvaran, 1998).

Needless to say, the Rynes et al. (2002) findings are disturbing, for they indicate that HR vice presidents, directors, and managers live in a very different world from that of I-O psychologists. To bridge that gap, the Society for Human Resource Management (SHRM) Foundation commissions reviews of the professional literature in key HR areas (e.g., performance management, employee selection, retention, reward strategies, employee engagement, and commitment) by knowledgeable professionals, and has them "translate" the results of published research into practical guidelines. An academic and a practitioner review each draft of the report to ensure that it is well organized and jargon-free, the findings are presented clearly, and the implications of the findings for professional practice are highlighted. The name of this initiative is "Effective Practice Guidelines," and each report may be downloaded in PDF form from <http://www.shrm.org/about/foundation/Pages/default.aspx>.

We know that senior-level managers are extremely aware of the importance of hiring the right people for their organizations. Groysberg and Connolly (2015), for example, reported that the top three concerns of CEOs of firms both large and small, in order, were (1) talent management, (2) operating in a global marketplace, and (3) regulation/legislation. With respect to talent management, CEOs identified three major issues: (1) finding the right talent (especially during periods of change or growth), (2) developing high-potential employees (particularly with respect to using mobility to enable those employees acquire the breadth of expertise and experience required of senior executives), and (3) developing talent pipelines to meet changing business demands.

These results suggest that, whether an organization is purely domestic or international in its scope of operations, CEOs recognize the critical importance of employee selection ("finding the right people") to the achievement of their strategic objectives. There is therefore a pressing need and a ripe opportunity for I-O psychologists to have a major impact on organizations by demonstrating the business value of employee selection. Executives need this information to make informed decisions about selection tools and processes, and they have never been more receptive to it than now, in light of the key human capital challenges they are facing.

Benchmarking Current Practices

Scott and Lezotte (2012) recently highlighted how assessment practices have evolved over the past decade due to rapid advances in technology and the ability to leverage the internet's explosive growth (see also Chapters 39–44 in this Handbook). The authors cited several key features of technology-enhanced assessment tools that create significant advantages over more traditional measurement practices, including (a) increased efficiency in administration, data warehousing, and analytics; (b) enhanced access to a more global and diverse candidate pool; (c) expanded construct coverage, with an ability to measure an almost limitless array of attributes using more true-to-life item types; (d) optimized ability to deploy more advanced measurement theories and applications, leading to increased accuracy, precision, and shorter testing time; and (e) bottom-line impact and demonstrated value in achieving key organizational goals. The authors also noted that there is an unprecedented level of assessment activity across all organizational levels, as companies seek to leverage assessment-technology solutions to upgrade their workforces and drive key talent initiatives. While the search for the latest technological application has, at times, presented some challenges to good testing practice, advancements in measurement theory, revised professional standards, and the application of core measurement principles have served as the beacon for this evolution.

A recent online survey of talent-assessment trends included more than 1,400 global human resource professionals. It focused on, among other things, the nature of assessment use in organizations and how technology has been incorporated into recruitment and selection (Kantrowitz, 2014). The survey found that assessments are fairly common across all job levels, ranging from 55% use for first-line supervisors to 72% use for middle managers. Assessments are used most for external hiring (76%), internal hiring (65%), and leadership development (56%). The survey also revealed an increasing focus on assessments as part of succession planning and talent analytics.

The types of tests that organizations use for pre-hire applications are shown in Table 10.5. The table shows that the most frequently used tests are skills/knowledge tests, followed by personality and cognitive-ability tests.

On the question of assessment-delivery modes, the Kantrowitz (2014) survey found that online assessment is the most prevalent (81%), followed by paper-and-pencil assessment (37%), and computer-based testing with offline scoring (35%). Mobile assessment was reported at only 4% usage. The author indicates that the use of paper-and-pencil or computer-based testing with offline scoring is more common in emerging economies. This survey also addressed the extent to which social media are used to establish job fit for candidates. Although 54% of the respondents value its use as a recruiting tool, fewer (40%, up from 29% in 2013) view it as useful for establishing candidate fit. Only 20% of the respondents have confidence in the quality of these data, and roughly 25% have policies in place governing its use.

Another recent benchmarking study was conducted on assessment practices for high potentials and leaders, drawing upon a group of 100 large, multinational organizations—most of whom were ranked among *Fortune* Magazine’s Top Companies for Leaders (Church & Rotolo, 2013). This study revealed that 70% of the respondents use assessments, and of that group, 90% assess their senior executives and 75% focus on high potentials. In reviewing these data, the authors conclude that organizations appear to be structuring their talent initiatives by identifying individual leadership potential at lower levels, while applying more selectivity and precision at the highest layers in their company, where leadership mistakes can have serious consequences. Church, Rotolo, Ginther, and Levine (2015) conducted a follow-up study on 80 top leadership companies and found that talent management leaders from two-thirds of these companies perceived assessments as having a moderate (5–9% improvement) to significant (10–20% improvement) impact on the business performance of high-potentials and senior-executive participants.

TABLE 10.5
Pre-Hire Assessment Use

Assessment Types	2014	2014 Rank
Skills/knowledge tests	73%	1
Personality tests	62%	2
Cognitive ability/general problem-solving tests	59%	3
Job-fit tests	47%	4
Specific ability tests	47%	4
Situational judgment	43%	6
Assessment centers	41%	7
Job-specific solutions	39%	8
Biodata (life history information)	37%	9
Culture-fit tests	33%	10
Job simulations	32%	11
Interest assessments	23%	12

Source: Tracy M. Kantrowitz Ph.D., 2014 Global Assessment Trends Report (2014), p. 28 © 2014 CEB. All rights reserved.

LOOKING TO THE FUTURE: THE NEED FOR IMPROVED SELECTION PROCESSES**Flaws in the Traditional Selection Model**

Earlier in the chapter we discussed the fact that the traditional I-O psychology selection process generally fails to take into account the social context and interpersonal processes as part of staffing decisions, and that all too frequently hiring managers override valid selection tools in favor of potentially non-job-related factors. While this sort of behavior can result in poor hiring decisions and successful legal challenges, it is important to reflect on why this behavior occurs. As previously discussed, one key reason for this could be that our selection processes are simply too narrow in scope and don't adequately measure the multidimensional facets of work that exist in most organizations. Hiring-manager stakeholders may simply be reacting to the fact that they are not being provided with the full set of data necessary to make informed staffing decisions. Outtz (2010) contends that these sorts of limitations in our traditional selection model lead to flawed selection decisions that negatively impact our ability to advance organizational goals and to treat candidates fairly. Even though a selection tool may be validated, if it does not measure all or even most of the important facets of job performance, it can result in imperfect decisions, illusory benefits, adverse impact, and legal challenges. As previously emphasized in this chapter, there is a pressing need to expand the relevant criterion space addressed by our selection programs and to target our predictions on *in situ* performance (Cascio & Aguinis, 2008a).

Practical limits are always placed on the number of assessment tools that can be implemented as part of any selection program. Organizations want to control costs and minimize administration time to manage the candidate experience. It is not uncommon for organizations to demand that the full assessment-test battery take no more than 20–30 minutes to administer, particularly in high-volume hiring situations. This drive for expediency can, and often does, lead to the implementation of a limited number of measures that may not capture the full range of attributes needed for success in the targeted roles. Selection of the highest scorers on a predictor battery that is designed for expediency and isn't necessarily measuring the most important facets of performance has little probability of producing the desired outcomes. Outtz (2010) emphasized that research over the years showing cognitive tests to be the best predictor of performance across all jobs can be misleading, since the best predictors for a particular job can only be gleaned through an understanding of the full range of attributes required for job success, including knowledge of the relative importance of those attributes.

To ensure that our selection programs are measuring the most important and relevant facets of job performance, it is essential that they be based on a comprehensive job analysis that identifies performance domains reflective of the 21st-century workplace. When conducting a job analysis in the context of rapidly changing organizations, we must look beyond the responsibilities and competencies of a particular role, and also account for situational and contextual factors that impact individual, team, and organizational performance. This means taking into account the overall business environment (e.g., global, economic, competitive, and market challenges anticipated to impact this type of company in the future); the organizational structure (how work gets done); culture (social and demographic environment); and the organization's strategic objectives (Cascio & Aguinis, 2008a). The incorporation of these critical factors into the job analysis allows us to expand our assessment tools and more accurately predict the full range of job performance against the backdrop of a dynamic work environment. Once a job analysis is conducted, a selection blueprint can be created that links assessment tools to each of the targeted attributes. This allows us to prioritize the relevant attributes that should be assessed, an especially critical concern when practical constraints limit the number of selection tools at our disposal (see Chapter 6 in this volume).

Moving forward, technology-enhanced assessments can be leveraged to address the practical constraints around testing time and better meet stakeholder needs for greater construct coverage. For example, computer adaptive testing (CAT) is becoming more widely available within

large testing programs (Gibby, Ispas, McCloy, & Biga, 2009). Using this approach, candidates are presented with only a limited number of items that are needed to determine proficiency or standing on the targeted attribute. The items presented to applicants are tailored to each applicant's "ability" based on responses to previous items. This allows for a greater number of attributes to be assessed within a limited time period. That being said, regardless of the approach taken in deploying the assessment tools, a job analysis remains a fundamental requirement to ensure that the right attributes are used to select the right candidates for the right roles.

Leveraging the Value of Multimedia Immersive Simulations

Advances in technology, measurement theory, and cognitive science have provided many new opportunities for innovative test design and deployment (Reynolds & Rupp, 2010). As a result, organizations are able to leverage multimedia technology to assess a more comprehensive range of candidate attributes with greater speed and precision, using more true-to-life item formats (see Chapters 39–44 in this Handbook). While many large-scale, high-volume selection programs still rely on multiple-choice assessments for the sake of expediency, positions that require the measurement of more complex attributes (e.g., leadership roles)—and have lower-volume hiring requirements—can take advantage of innovative formats that more closely simulate the work environment and evoke a demonstration of higher-order skills (Scott & Lezotte, 2012). Organizations engaged in leadership selection and development programs have realized tremendous time, cost, and resource savings as a result of new technologies and innovative approaches designed to select, develop, and retain high-potential leaders.

Multimedia assessments can be developed as theatrical, first-person stories that immerse candidates in the fictional world of an organization—complete with organizational and situational backstory, robust and compelling narratives, and strong story resolutions. Most web-based assessment systems support virtual environments that place the candidate in realistic job scenarios. Multimedia technology blends film or animation with other stimuli that are presented through e-mails, voicemails, annual reports, analyst research reports, marketing/sales presentations, and any number of other business and role-related materials. Candidates must absorb and act on this information in order to make decisions and take actions. The immersive quality of the simulation helps the participants engage, and it creates a sense of urgency and psychological involvement in the assessment. The story (or dramatic narrative) is designed to drive the simulation, help ensure an engaging simulation experience, and leave candidates with a sense of accomplishment and resolution. This approach predicts future in situ performance and also elicits the candidate's best performance as he or she is drawn into the storyline's sense of reality and challenge. A number of organizations have found that immersive simulations have been quite effective at breaking through what Church and Rotolo (2013) term the "assessment glass ceiling," where top organizational leaders, for a variety of reasons (e.g., skepticism, perceived loss of control), resist taking formal assessments. Immersive simulations not only capture the attention of senior leaders but also hold it long enough to elicit meaningful information about their capabilities. The assessment becomes a seamless component of a dynamic, engaging, and job-relevant narrative.

The benefits of multimedia assessments are also particularly impactful for the deployment of large-scale and multinational selection programs. With today's advanced server technologies, and the advent of cloud computing, multimedia assessments can be administered simultaneously around the globe to hundreds of thousands of candidates to measure an almost limitless array of attributes, in any language, for any position, with almost instantaneous results. Multimedia technology also allows organizations to expand the range, depth, and fidelity of assessments, which results in greater measurement precision and an ability to assess a fuller range of job-performance criteria. As organizations increasingly understand the value of assessment and development for driving sustainable business success, new technologies and immersive simulations will serve as the foundation for their effectiveness.

CONCLUSIONS: HOW SHOULD WE VALUE THE SUCCESS OF SELECTION IN ORGANIZATIONS?

Earlier in this chapter we argued that the traditional approach of developing valid selection methods to predict individual job performance is only “the start” of selection as an organizational process. To move the field forward, we believe that it is important to adopt a broader perspective of successful selection processes. Those processes should be assessed in terms of criteria that include empirical validity, face validity, selection ratios, marketability of the selection effort, demonstration of the business value of selection using quantitative as well as qualitative metrics, the effectiveness of the management of selection processes, candidate reactions to those processes, overall expense, and the timeliness with which selection decisions can be made.

Recommendations and Future Directions

I-O psychologists need to do more as professionals than simply develop selection systems characterized by sound psychometric qualities. Our role cannot be limited to that of technicians, because our responsibility does not end after developing a valid selection system. It does little good to say, “I developed a valid selection system, but the organization misused it.” We need to be better scientists/practitioners in integrating selection systems into organizations. Beyond traditional technical psychometric competencies, we need to provide facilitation and process-consulting skills within the business context. As selection-system developers, we need to implement change-management techniques (e.g., overcoming resistance to change) and practices (e.g., involvement and participation) when implementing these systems. We need to extend our role as scientists/practitioners to achieve successful *implementation* of selection systems within the context of specific organizational characteristics, social contexts, and interpersonal processes. The Society for Industrial and Organizational Psychology (SIOP) could provide education and skill development (e.g., workshops for which the objectives are to develop business acumen as well as learning skills and techniques to facilitate the implementation of selection systems in organizational contexts). Graduate training and internships could require students to demonstrate competencies in facilitation and process-consulting skills related to implementing selection systems. Beyond that, graduate students in I-O psychology need a deeper understanding of how businesses work. They need not earn MBA degrees, but they should, at the very least, understand fundamental concepts in disciplines such as strategic management, marketing, macro- and micro-economics, accounting, and corporate finance.

Consider a real-world example that is based on the direct involvement of one of the authors. The organization in question is a major fashion retailer that has used a recruitment/selection system for more than 10 years to hire college graduates from the most prestigious universities for a management-development program. The continued success of this program can be attributed to some fundamental development and implementation practices, including the following:

1. Involvement of managers, executives, decision makers, and HR in selection-technique development and implementation. This includes job analysis, simulations, and interviews.
2. Updating job and competency requirements and selection techniques to meet the requirements of changing management jobs.

College-graduate candidates are screened on college campuses, with interviews targeted to management competencies and organizational success factors. Candidates who pass the on-campus screen are invited to a one-day assessment at the corporate headquarters. This one-day assessment includes (a) learning financial analysis skills, (b) participating in a group-based leadership exercise to improve retail-store effectiveness, and (c) two panel-group interviews. All assessors are trained to evaluate candidate performance using behavioral benchmarks and standards. Independent and consensus ratings standards and guidelines are required. An assessor conference is held after the one-day assessment. Selection-technique data, including ratings and behavioral observations, are reported to the assessors, who include managers, executives,

incumbents, and HR staff. Guidelines are provided to establish bands of scores and to make successful decisions.

Observations of why this selection system has been successful in predicting job success and in becoming integrated into the culture of the business include the following:

1. The original development and updates to the selection system have involved multiple organizational participants, including executives, managers, job incumbents, and representatives from recruitment, staffing, and training.
2. Hiring decisions are made in a one-day session with all key decision makers involved.
3. Selection techniques are developed in the business context and are updated at least every three years. Interviews contain behavior-description questions and situational questions. The leaderless-group-competition exercise requires candidates to visit company and competitors' stores and to read consumer information regarding trends and the latest company strategies for business development.
4. Assessors self-monitor and also monitor each other to evaluate candidates using behaviors/benchmarks related to competencies and success factors.

In our opinion, the key to successful implementation of a selection system is to involve decision makers and stakeholders. Development of selection techniques is therefore a necessary, but not a sufficient, condition for their successful acceptance and use by decision makers. Implementation is an ongoing challenge.

NOTE

1. We would like to thank Jerard F. Kehoe for suggesting these last two points.

REFERENCES

- Anderson, N., Lievens, F., van Dam, K., & Ryan, A. M. (2004). Future perspectives on employee selection: Key directions for future research and practice. *Applied Psychology: An International Review*, *53*, 487–501.
- Arthur, W., Jr., & Day, E. A. (2011). Assessment centers. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 2, pp. 205–236). Washington, DC: American Psychological Association.
- Ashe, R. L., Jr. (April 1990). *The legality and defensibility of assessment centers and in-basket exercises*. Paper presented at the meeting of the Society for Industrial and Organizational Psychology, Miami Beach, FL.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology*, *44*, 1–26.
- Becker, B. E., Huselid, M. A., & Ulrich, D. (2001). *The HR scorecard: Linking people, strategy and performance*. Boston, MA: Harvard Business School Press.
- Berry, C. M., Sackett, P. R., & Wiemann, S. (2007). A review of recent developments in integrity test research. *Personnel Psychology*, *60*, 271–301.
- Binning, J. F., & Barrett, G. V. (1989). Validity of personnel decisions: A conceptual analysis of the inferential and evidential bases. *Journal of Applied Psychology*, *74*, 478–494.
- Boudreau, J. W. (1991). Utility analysis for decisions in human resource management. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 2, pp. 621–745). London, England: SAGE Publications.
- Boudreau, J. W., & Ramstad, P. M. (2003). Strategic industrial and organizational Klimoski (Vol. Eds.), *Handbook of psychology, Vol. 12, Industrial and organizational psychology* (pp. 193–221). Hoboken, NJ: Wiley.
- Boudreau, J. W., Sturman, M. C., & Judge, T. A. (1994). Utility analysis: What are the black boxes, and do they affect decisions? In N. Anderson & P. Herriot (Eds.), *Assessment and selection in organizations. Methods and practice for recruitment and appraisal* (pp. 77–96). New York, NY: John Wiley.
- Brannick, M., Pearlman, K., & Sanchez, J. (2017). Work analysis. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.
- Cabrera, E. F., & Raju, N. S. (2001). Utility analysis: Current trends and future directions. *International Journal of Selection and Assessment*, *9*, 92–102.
- Callinan, M., & Robertson, I. T. (2000). Work sample testing. *International Journal of Selection and Assessment*, *8*(4), 248–260.

- Cascio, W. F. (1993). Assessing the utility of selection decisions: Theoretical and practical considerations. In N. Schmitt & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 310–340). San Francisco, CA: Jossey-Bass.
- Cascio, W. F. (2007). Evidence-based management and the marketplace for ideas. *Academy of Management Journal*, *50*, 1009–1012.
- Cascio, W. F. (2016). *Managing human resources: Productivity, quality of work life, profits* (10th ed.). New York, NY: McGraw-Hill.
- Cascio, W. F., & Aguinis, H. (2008a). Staffing 21st-century organizations. *Academy of Management Annals*, *2*, 133–165.
- Cascio, W. F., & Aguinis, H. (2008b). Research in I/O psychology from 1963–2007: Changes, choices, and trends. *Journal of Applied Psychology*, *93*, 1062–1081.
- Cascio, W. F., & Aguinis, H. (2011). *Applied psychology in human resource management* (7th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Cascio, W. F., & Boudreau, J. W. (2011a). *Investing in people: Financial impact of human resource initiatives* (2nd ed.). Upper Saddle River, NJ: Pearson.
- Cascio, W. F., & Boudreau, J. W. (2011b). Utility of selection systems: Supply-chain analysis applied to staffing decisions. In S. Zedeck (Ed.), *Handbook of I/O psychology* (Vol. 2, pp. 421–444). Washington, DC: American Psychological Association.
- Chapman, D. S., & Zweig, D. I. (2005). Developing a nomological network for interview structure: Antecedents and consequences of the structured selection interview. *Personnel Psychology*, *58*, 673–702.
- Church, A. H., & Rotolo, C. T. (2013). How are top companies assessing their high-potential and senior executives? A talent management benchmark study. *Consulting Psychology Journal: Practice and Research*, *65*(3), 199–223.
- Church, A. H., Rotolo, C. T., Ginther, N. M., & Levine, R. (March 2015). How are top companies designing and managing their high-potential programs? A follow-up talent management benchmark study. *Consulting Psychology Journal: Practice and Research*, *67*(1), 17–47.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, *52*, 281–302.
- Davidson, E. J. (2010). Strategic evaluation of the workplace assessment program. In J. C. Scott, & D. H. Reynolds (Eds.), *The handbook of workplace assessment: Evidence-based practices for selecting and developing organizational talent* (pp. 729–756). San Francisco, CA: Jossey-Bass/Pfeiffer.
- Davidson, E. J., & Martineau, J. W. (2007). Strategic uses of evaluation. In K. M. Hannum, J. W. Martineau & C. Reinelt (Eds.), *The handbook of leadership development evaluation* (pp. 433–463). San Francisco, CA: Jossey-Bass.
- Dorsey, D., Cortina, J. M., & Luchman, J. (2017). Adaptive and citizenship-related behaviors at work. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.
- Economist Intelligence Unit. (February 2014). *What's next: Future global trends affecting your organization. Evolution of work and the worker*. Alexandria, VA: Society for Human Resource Management Foundation.
- Edwards, J. E., Scott, J. C., & Raju, N. S. (Eds.) (2003). *The human resources program-evaluation handbook*. Newbury Park, CA: Sage.
- Fisher, A. (November 28 2005). For happier customers, call HR. *Fortune*, p. 272.
- Food Marketing Institute. (1985). *Cashier test battery administrator's manual*. Washington, DC: Author.
- Gibby, R. E., Ispas, D., McCloy, R. A., & Biga, A. (2009). Moving beyond the challenges to make unproctored Internet testing a reality. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *2*, 64–68.
- Gardner, W. L., & Martinko, M. J. (1996). Using the Myers-Briggs type indicator to study managers: A literature review and research agenda. *Journal of Management*, *22*, 45–83.
- Groysberg, B., & Connolly, K. (March 2015). The three things CEOs worry about the most. *Harvard Business Review*. Downloaded from <https://hbr.org/2015/03/the-3-things-ceos-worry-about-the-most>.
- Haar, J. M., & Spell, C. S. (2007). Factors affecting employer adoption of drug testing in New Zealand. *Asia Pacific Journal of Human Resources*, *45*, 200–217.
- Hartigan, J. A., & Wigdor, A. K. (Eds.) (1989). *Fairness in employment testing: Validity generalization, minority issues, and the general aptitude test battery*. Washington, DC: National Academy Press.
- Higgs, A. C., Papper, E. M., & Carr, L. S. (2000). Integrating selection with other organizational processes and systems. In J. Kehoe (Ed.), *Managing selection in changing organizations: Human resource strategies* (p. 94). San Francisco, CA: Jossey-Bass.
- Hough, L. M., & Dilchert, S. (2017). Personality: Its measurement and validity for employee selection. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.

- Huffcut, A. I., & Culbertson, S. S. (2011). Interviews. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 2, pp. 185–204). Washington, DC: American Psychological Association.
- Hunter, J. E. (1986). Cognitive ability, cognitive aptitudes, job knowledge, and job performance. *Journal of Vocational Behavior*, *29*, 340–362.
- Jayne, M. E. A., & Rauschenberger, J. M. (2000). Demonstrating the value of selection in organizations. In J. Kehoe (Ed.), *Managing selection in changing organizations: Human resource strategies* (pp. 123–157). San Francisco, CA: Jossey-Bass.
- Kantrowitz, T. M. (2014). *2014 global assessment trends report*. Retrieved September 20, 2015 from <http://www.cebglobal.com/shl/images/uploads/GATR-042014-UKeng.pdf>
- Latham, G. P., & Whyte, G. (1994). The futility of utility analysis. *Personnel Psychology*, *47*, 31–46.
- Lawshe, C. H., & Balma, M. J. (1966). *Principles of personnel testing* (2nd ed.). New York, NY: McGraw-Hill.
- Le, H., Oh, I., Shaffer, J., & Schmidt, F. L. (2007). Implications of methodological advances for the practice of personnel selection: How practitioners benefit from meta-analysis. *Academy of Management Perspectives*, *21*, 6–15.
- Meglino, B. G., & Ravlin, E. C. (1998). Individual values in organizations: Concepts, controversies, and research. *Journal of Management*, *24*, 351–389.
- Morgeson, F. P., Campion, M. A., Dipboye, R. L., Hollenbeck, J. R., Murphy, K., & Schmitt, N. (2007). Reconsidering the use of personality tests in personnel selection contexts. *Personnel Psychology*, *60*, 683–729.
- Motowidlo, S. J. (2003). Job performance. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Comprehensive handbook of psychology: Industrial and organizational psychology* (Vol. 12, pp. 39–53). New York, NY: Wiley.
- Murphy, K. R., Myers, B., & Wolach, A. (2014). *Statistical power analysis* (4th ed.). New York, NY: Routledge.
- Ones, D. S., Dilchert, S., Viswesvaran, C., & Salgado, J. F. (2017). Cognitive abilities. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.
- Ones, D. S., & Viswesvaran, C. (1998). Gender, age, and race differences on overt integrity tests: Results across four large-scale job applicant data sets. *Journal of Applied Psychology*, *83*, 35–42.
- Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. *Journal of Applied Psychology*, *81*, 660–679.
- Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. *Journal of Applied Psychology*, *78*, 679–703.
- Organ, D. W., Podsakoff, P. M., & Podsakoff, N. P. (2011). Expanding the criterion domain to include organizational citizenship behavior: Implications for employee selection. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 2, pp. 281–324). Washington, DC: American Psychological Association.
- Ottz, J. L. (2010). Addressing the flaws in our assessment decisions. In J. C. Scott & D. H. Reynolds (Eds.), *The handbook of workplace assessment: Evidence-based practices for selecting and developing organizational talent* (pp. 711–727). San Francisco, CA: Jossey-Bass/Pfeiffer.
- Pearlman, K., & Barney, M. (2000). Selection for a changing workplace. In J. Kehoe (Ed.), *Managing selection in changing organizations: Human resource strategies* (pp. 3–72). San Francisco, CA: Jossey-Bass.
- People Focus. (1998). *Bank of America new hire assessment predictive validation report*. Pleasant Hill, CA: Author.
- Phillips, J. J. (1997). *Handbook of training evaluation* (3rd ed.). Houston, TX: Gulf.
- Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, *85*, 612–624.
- Ramsay, H., & Scholarios, D. (1999). Selective decisions: Challenging orthodox analyses of the hiring process. *International Journal of Management Reviews*, *1*, 63–89.
- Reynolds, D. H., & Rupp, D. E. (2010). Advances in technology-facilitated assessment. In J. C. Scott & D. H. Reynolds (Eds.), *Handbook of workplace assessment: Selecting and developing organizational talent* (pp. 609–641). San Francisco, CA: Jossey Bass.
- Roberts, B. (February 2011). Close-up on screening. *HR Magazine*, *56*(2), 23–29.
- Roth, P. L., Bobko, P., & McFarland, L. A. (2005). A meta-analysis of work sample test validity: Updating and integrating some classic literature. *Personnel Psychology*, *58*, 1009–1037.
- Rotundo, M., & Spector, P. E. (2017). Counterproductive work behavior and withdrawal. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.
- Rynes, S. L., Colbert, A. E., & Brown, K. G. (2002). HR professionals' beliefs about effective human resource practices: Correspondence between research and practice. *Human Resource Management*, *41*, 149–174.
- Rynes, S. L., Giluk, T. L., & Brown, K. G. (2007). The very separate worlds of academic and practitioner periodicals in human resource management: Implications for evidence-based management. *Academy of Management Journal*, *50*, 987–1008.

- Schatsky, D., & Schwartz, J. (2015). *Global human capital trends 2015: Leading in the new world of work*. Deloitte University Press. Available at <http://dupress.php.islsandbox.com/periodical/trends/human-capital-trends-2015/page/2/>
- Schippmann, J. S. (2010). Competencies, job analysis, and the next generation of modeling. In J. C. Scott & D. H. Reynolds (Eds.), *The handbook of workplace assessment: Evidence-based practices for selecting and developing organizational talent* (pp. 197–231). San Francisco, CA: Jossey-Bass/Pfeiffer.
- Schippmann, J. S., Ash, R. A., Battista, M., Carr, L., Eyde, L. D., Hesketh, B., et al. (2000). The practice of competency modeling. *Personnel Psychology, 53*, 703–740.
- Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*, 262–274.
- Schmidt, F. L., & Hunter, J. E. (2003). History, development, evolution, and impact of validity generalization and meta-analysis methods, 1975–2002. In K. R. Murphy (Ed.), *Validity generalization: A critical review* (pp. 31–66). Hillsdale, NJ: Lawrence Erlbaum.
- Schmidt, F. L., & Hunter, J. E. (2014). *Methods of meta-analysis: Correcting error and bias in research findings* (3rd ed.). Thousand Oaks, CA: Sage.
- Schmitt, N., & Borman, W. C. (Eds.) (1993). *Personnel selection in organizations*. San Francisco, CA: Jossey-Bass.
- Schmitt, N., Oswald, F. L., Kim, B. H., Imus, A., Merritt, S., Friede, A., & Shivpuri, S. (2007). The use of background and ability profiles to predict college student outcomes. *Journal of Applied Psychology, 92*, 165–179.
- Scott, J. C., & Lezotte, D. V. (2012). Web-based assessments. In N. Schmitt (Ed.), *The Oxford handbook of personnel assessment and selection* (pp. 485–516). New York, NY: Oxford University Press.
- Scott, J. C., Rogelberg, S. G., & Mattson, B. W. (2010). Measuring and managing the talent management function. In R. Silzer & B. Dowell (Eds.), *Strategy-driven talent management* (pp. 503–547). Alexandria, VA: Jossey-Bass/Pfeiffer.
- Skarlicki, D. P., Latham, G. P., & Whyte, G. (1996). Utility analysis: Its evolution and tenuous role in human resource management decision making. *Canadian Journal of Administrative Sciences, 13*, 13–21.
- Sturman, M. C. (2000). Implications of utility analysis adjustments for estimates of human resource intervention value. *Journal of Management, 26*, 281–299.
- Taylor, H. C., & Russell, J. T. (1939). The relationship of validity coefficients to the practical effectiveness of tests in selection. *Journal of Applied Psychology, 23*, 565–578.
- Thornton, G. C., III, Johnson, S. K., & Church, A. (2017). Executive selection: Assessing leadership and high potential. In J. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (Revised ed.). New York, NY: Routledge.
- Weber, L. (June 3 2015). Drug use is on the rise among workers in U.S. *The Wall Street Journal*, pp. B1, B7.
- Weber, L., & Dwoskin, E. (September 30 2014). As personality tests multiply, employers are split. *The Wall Street Journal*, pp. A1, A2.
- Welch, J. (2005). *Winning*. New York, NY: HarperBusiness.
- Whyte, G., & Latham, G. (1997). The futility of utility analysis revisited: When even an expert fails. *Personnel Psychology, 50*, 601–610.
- Zumbrun, J. (June 19 2015). Behind lingering job listings. *The Wall Street Journal*, A3.