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Predictors of self-efficacy for cognitive ability employment testing

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Abstract

This study examined predictors of initial levels and of changes in self-efficacy (S-E) for cognitive ability employment testing. The testing S-E of 287 job applicants at a utility company was measured before the test, immediately after, and again after pass/fail feedback. Being male, having been hired previously by cognitive ability tests, perceiving such tests as valid and fair, and general S-E were each positively related to initial levels of S-E (Time 1), but race was unrelated. From before- to after-test feedback, S-E increased for those who passed and decreased for those who failed. Failing had a greater negative effect on subsequent S-E for women and Whites (vs. men and minorities). Failing also had a smaller negative effect on S-E for those who had been hired previously by ability tests than for those who had never been hired by them before. Implications of these findings are discussed.

Keywords: Self-efficacy; Cognitive ability; Employment tests; Race; Gender

1. Introduction

Self-efficacy (S-E) has become an increasingly important construct for understanding work behavior (Bandura, 1986, 1997; Gist, 1987). Self-efficacy "refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action necessary to meet situational demands" (Wood and Bandura, 1989, p. 408). In other words, S-E is an individual's level of confidence that he or she can perform well on a certain task. Researchers have consistently found that S-E is positively related to performance on work tasks (Stajkovic and Luthans, 1998), even beyond the effects of task ability (Phillips and Gully, 1997). This positive relationship between S-E and performance has also been demonstrated with respect to cognitive ability employment tests (Bauer et al., 1998; Ryan et al., 1998). Thus, confidence can and does matter to ability-test performance (e.g., Ackerman and Kanfer, 1993). Here, we focus on this kind of S-E, which is defined as applicants' beliefs in their capabilities to perform well on cognitive ability employment tests.

With the relationship between S-E and test performance established, and with 15–20% of all organizations using cognitive ability tests for selection (Rowe et al., 1994) as highly valid predictors of performance (e.g., Hunter and Hunter, 1994), it is important to investigate the determinants of cognitive ability employment-test S-E. In this vein, it has been consistently found that African Americans and Latino Americans score lower (on average) on cognitive ability tests than other groups (e.g., Roth et al., 2001). One significant concern is that Black and Latino job applicants, recognizing stereotypes that are associated with (or that are reinforced by) these research findings, may experience reduced *personal* confidence for taking such tests. Research on this issue is currently absent but necessary. If minorities or women (Bussey and Bandura, 1999) do, in fact, experience lower S-E for such tests or experience differential changes in S-E, there are several important implications for researchers and managers. First, low pretest S-E or differ-

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ential drops in S-E may contribute to a negative cycle of low performance and reduced confidence for minorities or women known as efficacy-performance spirals (e.g., Lindsley et al., 1995; Shea and Howell, 2000). This could cause women and minorities to feel increasingly disadvantaged at organizations using cognitive ability tests, possibly prompting charges of discrimination. Second, low S-E may discourage minorities or women from applying for jobs where cognitive ability tests are used (e.g., Schmit and Ryan, 1997), inhibiting affirmative recruiting efforts. Third, to ensure fairness, such potential problems may need to be addressed through prehire management interventions to improve S-E (e.g., Gist, 1987). Finally, if minorities are shown to have lower S-E for cognitive ability tests, researchers should investigate whether this may actually contribute to or account for lower mean test scores for some minority groups (Sanchez et al., 2000).

These social justice and practical concerns for hiring women and minorities demand that researchers directly examine race and gender effects on cognitive ability test S-E. This is one purpose of the current study along with examining other theoretically relevant potential predictors. Specifically, we use a model of S-E development (i.e., Gist and Mitchell, 1992) to hypothesize effects for race, gender, past experiences (e.g., Bandura, 1997), and other relevant predictors on (1) initial levels of S-E prior to the employment test and (2) changes in S-E following (pass/fail) feedback on the cognitive ability test.

1.1. Hypotheses on initial levels of S-E

According to Gist and Mitchell (1992), three types of analyses mediate the development of S-E: (1) analysis of task requirements, (2) attributional analysis of past task experience, and (3) assessment of personal and situational constraints/resources. For example, difficult or ambiguous test requirements and internal attributions for failing a test may lower S-E, whereas easy requirements and internal attributions of ability may increase S-E. Perceived personal or situational constraints on performance also reduce S-E (Mathieu et al., 1993). In developing our hypotheses, we link race, gender, test experience, and other perceptions to Gist and Mitchell's (1992) the three types of assessments, and thereby to level of S-E.

1.1.1. Race

Blacks and Latinos have generally demonstrated lower mean scores on cognitive ability tests than Whites and Asians (Hunter and Hunter, 1994; Roth et al., 2001; Sanchez et al., 2000). If Black and Latino applicants are aware of these subgroup mean differences or popular interpretations of them, they may perceive, through race bias in the test or negative-stereotype threat (Steele and Aronson, 1995), that their group membership is a constraint to test performance, leading to lower S-E (Gist and Mitchell, 1992). Moreover, lower cognitive ability test motivation for Blacks (Chan et al., 1997; DeShon et al., 1998; Helms, 1992) may indicate a general distrust of such tests that can lead to self-handicapping constraints (Sanchez et al., 2000) and thereby to lower S-E.

Hypothesis 1: Blacks and Latinos will have lower initial employment-testing S-E than Whites and Asians.

1.1.2. Gender

Research has found that gender may affect S-E on certain tasks (e.g., Lent et al., 1994). Women may have a weaker sense of efficacy that they can master the requirements of some traditionally male pursuits (Bussey and Bandura, 1999) including mathematics (Pajares and Miller, 1994), a usual component of cognitive ability tests. Although there is no reason to expect differences on verbal ability S-E (e.g., Silver et al., 1995), this still suggests higher perceived constraints to performance for women than for men on such tests and thereby less S-E (Gist and Mitchell, 1992). Moreover, women students have demonstrated lower average S-E for written ability tests than men (Mayo and Christenfeld, 1999). Thus:

Hypothesis 2: Females will have lower initial employment-testing S-E than males.

In addition to these likely demographic effects, we must hypothesize about and statistically control for other key antecedents of S-E from the literature including task experiences and perceptions and general S-E.

1.1.3. Previous test experience

"The most powerful influence on the development of individuals' S-E is their previous experience and performance in similar situations" (Thomas and Mathieu, 1994, p. 812). Previous employment–test experience influences the analyses of tasks and attributions discussed by Gist and Mitchell (1992). The understanding of task requirements may be enhanced simply by exposure to the task (Bandura, 1986). Also, being hired through employment testing in the past would increase the chance that attributions of high ability would be made (Silver et al., 1995), increasing S-E (Stajkovic and Sommer, 2000; Thomas and Mathieu, 1994). In contrast, there is less evidence that those who fail a test make self-enhancing (i.e., unstable or external) attributions of bad luck or task idiosyncrasies (Fiske and Taylor, 1991). In fact, these individuals seem to make attributions of low ability, implying lower S-E (Silver et al., 1995; Stajkovic and Sommer, 2000). Those with no previous experience with such tests are unlikely to have accurate or well-developed S-E beliefs (Stajkovic and Luthans, 1998), but there is no reason to expect that their S-E would be as high as applicants having been hired by past cognitive ability tests.

Hypothesis 3: Applicants with previous "hire" experiences with cognitive ability employment tests will have higher