Title: Diversity Shrinkage: Cross-Validating Pareto-Optimal Weights to Enhance Diversity via Hiring Practices

Abstract:
To reduce adverse impact potential and improve diversity outcomes from personnel selection, one promising technique is De Corte, Lievens, and Sackett’s (2007) Pareto-optimal weighting strategy. De Corte et al.’s strategy has been demonstrated on (a) a composite of cognitive and noncognitive (e.g., personality) tests (De Corte, Lievens, & Sackett, 2008) and (b) a composite of specific cognitive ability subtests (Wee, Newman, & Joseph, 2014). Both studies illustrated how Pareto-optimal weighting (in contrast to unit weighting) could lead to substantial improvement in diversity outcomes (i.e., diversity improvement), sometimes more than doubling the number of job offers for minority applicants. The current work addresses a key limitation of the technique-the possibility of shrinkage, especially diversity shrinkage, in the Pareto-optimal solutions. Using Monte Carlo simulations, sample size and predictor combinations were varied and cross-validated Pareto-optimal solutions were obtained. Although diversity shrinkage was sizable for a composite of cognitive and noncognitive predictors when sample size was at or below 500, diversity shrinkage was typically negligible for a composite of specific cognitive subtest predictors when sample size was at least 100. Diversity shrinkage was larger when the Pareto-optimal solution suggested substantial diversity improvement. When sample size was at least 100, cross-validated Pareto-optimal weights typically outperformed unit weights-suggesting that diversity improvement is often possible, despite diversity shrinkage. Implications for Pareto-optimal weighting, adverse impact, sample size of validation studies, and optimizing the diversity-job performance tradeoff are discussed.