



# Adverse Impact on Employee Selection Procedures

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# Overview

- Definition of Adverse Impact
- Uniform Guidelines on Employee Selection Procedures Provisions
- Test Development Dilemma
- Calculating Adverse Impact
- Strategies for Lessening Adverse Impact

*The Uniform Guidelines on Employee  
Section Procedures (1978) defines  
adverse impact as a*

“substantially different rate of selection in hiring, promotion, or other employment decision which works to the disadvantage of members of a race, sex, or ethnic group.”

# The APA Standards for Educational and Psychological Testing

## **Bias**

The *Standards* note that bias refers to any construct-irrelevant source of variance that results in systematically higher or lower scores for identifiable groups of examinees.

## Griggs v. Duke Power Company (1971)

The Supreme Court ruled that:

- Tests or other hiring practices must be removed when it is shown that they discriminate on the basis of race or any other impermissible characteristic
- Proof of discriminatory intent is not required
- If a test has disproportionate impact, then the practice must be eliminated unless the defendant can show the practice is a business necessity

# Uniform Guidelines on Employee Section Procedures

Where the user has not maintained data on adverse impact as required by the documentation section of applicable guidelines, the Federal enforcement agencies may draw an inference of adverse impact of the selection process from the failure of the user to maintain such data.

## Uniform Guidelines on Employee Section Procedures

Adverse impact might exist if the user has an underutilization of a group in the job category, as compared to the group's representation in the relevant labor market or, in the case of jobs filled from within, the applicable work force.

# Uniform Guidelines on Employee Section Procedures

“The use of any selection procedure which has an adverse impact on the hiring, promotion, or other employment or membership opportunities of members of any race, sex, or ethnic group will be considered to be discriminatory and inconsistent with these guidelines, unless the procedure has been validated in accordance with these guidelines.”



# Uniform Guidelines on Employee Section Procedures

“Where two or more selection procedures are available which serve the user's legitimate interest in efficient and trustworthy workmanship, and which are substantially equally valid for a given purpose, the user should use the procedure which has been demonstrated to have the lesser adverse impact.”

# Uniform Guidelines on Employee Section Procedures

## **“Two or More Selection Procedures”**

- Two Separate Examinations (e.g., oral and written exams)
- Same Examination, Different Cut Score
- Same Examination, Different Scoring Methodology (ranking vs. pass/fail)
- Combination of Any of the Above

# Uniform Guidelines on Employee Section Procedures

## **The Bottom Line**

- If the total selection process for a job has an adverse impact, the individual components of the selection process should be evaluated for adverse impact.
- If the total selection process does not have an adverse impact, the Federal enforcement agencies will not expect a user to evaluate the individual components for adverse impact and will not take enforcement action based upon adverse impact of any component of that process.

# Uniform Guidelines on Employee Section Procedures

## Summary

- Agencies must collect adverse impact data
- Agencies cannot use a selection procedure that exhibits adverse impact if it has not been validated
- If you have two valid selection procedures, you should use the one with the least amount of adverse impact
- If the total assessment process does not have adverse impact, then you need not evaluate individual components for adverse impact

# Uniform Guidelines on Employee Section Procedures

Agencies must collect and maintain records and totals for the following gender and ethnic/race groups:

Gender: Male/female

Race: African Americans

American Indians/Alaskan Natives

Asians/Pacific Islanders

Hispanics (Mexican, Puerto Rican, Cuban,  
Central or South American, etc.)

Caucasians (other than Hispanics)

## U.S. Norms on Standardized Tests

“Blacks tend to score approximately one standard deviation lower than Whites, and Hispanics score approximately two thirds of a standard deviation lower than Whites. Asians typically score higher than Whites on measures of mathematical-quantitative ability and lower than Whites on measures of verbal ability and comprehension.”

Source: Sackett, Schmitt, Ellingson, & Kabin, 2001. *High-stakes testing in employment, credentialing, and higher education*, American Psychologist, pg. 302 – 318.

# U.S. Norms on Standardized Tests

## Ethnic IQ Differences in the U.S.

Caucasians	baseline
Hispanics	- 0.5 Standard Deviation
African Americans	-1.0 Standard Deviation

Source: Myers, D.G., 2009, *Psychology in Everyday Life*, Worth Publishers, Holland Michigan, p. 227

## The Test Development Dilemma

- In entry-level employment testing, the factor which best differentiates between good and poor candidates across most all job classifications is g, or general intelligence.
- Simply put, the more cognitively-loaded an entry-level examination is, the better it is at predicting job performance and differentiating between good and poor candidates.



## The Test Development Dilemma

Typically, the more cognitively loaded an examination is, the more adverse impact that test will exhibit.

“higher reliability and validity often increase impact.”

Linda S. Gottfredson, *The Flight From g in Employment Testing*,  
Presentation at IPMAAC Conference, 6/25/97

## The Test Development Dilemma

In most all cases, to lower the adverse impact of an exam you need to decrease the amount of cognitive loading in that exam.

In most all cases, lowering the amount of cognitive loading on an exam will reduce the exam's reliability and validity coefficients.

Therefore, in most cases, reducing the adverse impact of an exam will reduce the ability of the exam to differentiate between good and poor candidates.

# Adverse Impact Test Continuum

Highest



Lowest

Written Tests  
Assessment Centers  
Standardized Oral Exams  
Biodata Inventories  
Personality Tests  
Physical Ability Examinations

# Calculating Adverse Impact

There are two acceptable ways to calculate adverse impact:

- Tests of Significance
- Four-Fifths Rule

# Tests of Significance

- Test of significance typically involve T-Tests and ANOVAs to demonstrate that one or more groups score significantly lower than the baseline group (typically Caucasians).
- Tests of significance do not work well when the sample size for individual groups is low (below 30).

## The Four Fifths Rule (aka the 80% Rule)

The selection ratio (percent passed/ percent administered) of a protected group divided by the selection ratio of the highest performing group. If that result is 0.80 or less, then adverse impact is said to exist.

# The Four Fifths Rule

## Calculation Example

Whites: 500 / 1,000 pass: .50 or 50%

Asians: 150 / 500 pass: .30 or 30%

80 Percent Rule:  $.30 / .50 = .60$

Because  $.60 < .80$ , adverse impact against Asians is said to exist

# Adverse Impact Calculations

## **Test Specific vs. Test Administration Specific?**

Entry Level Clerical Exam Results:

Bellingham, WA: mean = 76.5, no adverse impact

Oakland, CA: mean = 64.5, no adverse impact

Combined Exam Results: mean = 70.3, high  
adverse impact



# Adverse Impact Calculations

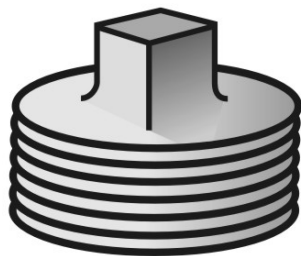
An examination's lack of adverse impact in previous test administrations is not an acceptable defense for those future test administrations that do exhibit adverse impact.

# Individual Test Items

**Which pipe fitting is the nipple?**



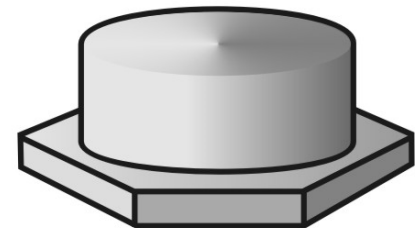
**A**



**B**



**C**



**D**

# Group Discussion

- Is it acceptable to include an item on an examination that clearly differentiates between two or more groups?
- If so, when?

# Individual Test Items

## Differential Item Functioning

SIOP's Principles for the Validation and Use of Personnel Selection Procedures defines Differential Item Functioning (DIF) as the “astatistical property of a test item in which different groups of test takers who have the same standing on the construct of measurement have different average item scores or, in some cases, different rates of endorsing various item options.”

## Individual Exam Components vs. Overall Test Results

You can have adverse impact on items, test components, the eligible list, and the final number of candidates hired. All the Federal Government really cares about is the final number of candidates hired, i.e., the “Bottom Line.”

# Strategies to Minimize Adverse Impact

## **Strategy #1**

### **Setting the Examination Cut Score**

Set the score at a place where the Four Fifths Rule is not violated. Note: just because the assessment component does not have adverse impact, you may still exhibit adverse impact in the total examination score (when grouped with other scores).

# Strategies to Minimize Adverse Impact

## **Strategy #2**

### **Revise the way the Test Scores are Used**

Switch from ranking an examination component to using it as a pass/fail screening device.

# Strategies to Minimize Adverse Impact

## Strategy #3

### **Use Non-Cognitive Assessment Instruments**

Include non-cognitive assessment results in the hiring decision (such as personality inventories and biodata instruments) in addition to the cognitive assessments. They can often raise a selection battery's validity while lowering its disparate impact.



# Strategies to Minimize Adverse Impact

## **Strategy #4**

### **Treat Groups of Candidates as Equals**

Eliminate the practice of hiring from the top-down on an eligibility list. For example, banding of candidates on the eligible list allows the hiring agency to select any candidate that appears within the selected band.

# Strategies to Minimize Adverse Impact

## **Strategy #5** **Focused Recruitment**

The best way to minimize adverse impact on a selection procedure (as computed by the 80% Rule) is by using a focused recruitment strategy.

# Strategies to Minimize Adverse Impact

## **Focused Recruitment Strategies**

1. Recruit qualified candidates at local colleges, trade schools, local newspapers, etc.
2. Clearly state the minimum qualifications for the position and ensure the recruits meet the qualifications.
3. There are qualified female and minority candidates in most jurisdictions; it takes intentional effort to identify them and encourage them to apply.

# Questions?



# Legal and Professional Links

## **Title VII of the Civil Rights Act**

<http://www.eeoc.gov/laws/statutes/index.cfm>

## **Uniform Guidelines on Employee Selection Procedures**

<http://www.eeoc.gov/laws/regulations/index.cfm>

## **Standards for Educational and Psychological Testing**

<http://www.apa.org/science/programs/testing/standards.aspx>

## **Principles for the Validation and Use of Personnel Selection Procedures**

[http://www.siop.org/\\_Principles/principlesdefault.aspx](http://www.siop.org/_Principles/principlesdefault.aspx)

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*Thank You!*

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