

# Adverse Impact: Legal, Psychometric, and Practical Considerations



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# Topics Covered

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- Why Do Tests Have Adverse Impact?
- Adverse Impact and Cognitive Ability Tests
- Some Major Approaches to Reducing Adverse Impact: Personality Tests, Biodata Instruments, Interest Inventories, and Reduced Cutoff Scores



# Topics Covered (cont'd.)

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- EEI Solutions
  - Recruitment Methods and Metrics
  - Measure Specific Abilities Rather than Overall Cognitive Ability
  - Remedial Training and Development
  - Test-Taking Strategies



# Why Do Tests Have Adverse Impact?

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- What do the *Uniform Guidelines* say about adverse impact?
- How is adverse impact calculated?
- Tests with adverse impact may be legal
- Possible explanations for adverse impact



# Definition of Discrimination

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“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...”

(Sec. 1607.3 A, *Uniform Guidelines*)



# Tests with Adverse Impact May Be Legal

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- Tests that have adverse impact must satisfy two conditions in order to be considered legal:
  - The test must be job-related (e.g., validated for the purpose it is used)
  - There must be a business necessity for using it



# Consideration of Alternatives

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“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.”

(Sec. 1607.3 B, *Uniform Guidelines*)



# Equally Valid Alternatives with Less Adverse Impact

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- Organizations are required to search for alternatives of equal validity with less adverse impact
- Often times, the alternatives with less adverse impact also have lower validity coefficients or are more expensive to administer





## “Four-Fifths Rule”

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“A selection rate for any race, sex, or ethnic group which is less than four-fifths (4/5) (or eighty percent) of the rate for the group with the highest rate will generally be regarded by the Federal enforcement agencies as evidence of adverse impact...

(Sec. 1607.3 D, *Uniform Guidelines*)



# Four-Fifths Rule

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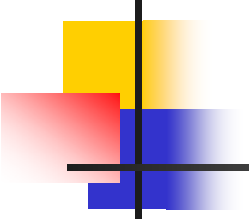
- Calculations using the “four-fifths” rule constitutes evidence of discrimination, not proof of discrimination.
- Number of females and minorities tested should be compared to available labor market.



# How is Adverse Impact Calculated?

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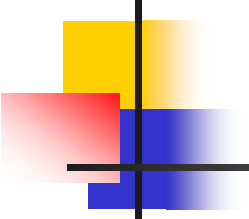
- Determine the number of candidates tested and the number who passed for each group
- Divide the number who passed by the total number tested
- Divide the lower pass rate by the higher pass rate



# Example of Adverse Impact Calculation: No AI

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- African Americans
  - 100 tested; 75 passed
  - $75/100 = .75$
- Whites
  - 100 tested; 80 passed
  - $80/100 = .80$
- Adverse Impact Calculation
  - $.75/.80 = .94$



# Example of Adverse Impact Calculation: AI

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- Males
  - 81 tested; 42 passed
  - $42/81 = .52$
- Females
  - 149 tested; 118 passed
  - $118/149 = .79$
- Adverse Impact Calculation
  - $.52/.79 = .66$



# Possible Explanations for Adverse Impact in Testing

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- Basic nutrition and early life experiences are not uniform across all segments of the population
- Economic resources are not distributed equally, nor are the benefits that are related to economic status
- There are differences in the ability of parents to provide optimal environments for development



# Possible Explanations for Adverse Impact in Testing

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- Schools vary in their ability to provide opportunities for development
- Education and achievement are not universally admired



# Adverse Impact and Cognitive Ability Tests

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- Cognitive ability tests tend to have the highest validity in predicting job performance across most jobs compared to other types of selection procedures
- Examples of cognitive ability tests
  - Reading comprehension
  - Math
  - Spatial ability
- Generally, the more complex the job, the greater the validity of cognitive ability tests





# Adverse Impact and Cognitive Ability Tests

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- Cognitive ability tests generally result in group differences on test performance
  - Whites tend to score higher on cognitive ability tests than African Americans and Hispanics.
  - Hispanics tend to perform at a higher level than African Americans.
  - Asians tend to perform at a higher level than whites in mathematics.



# Some Major Approaches to Reducing Adverse Impact

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- Personality Tests
- Biodata Instruments
- Interest Inventories
- Combination of Above with Cognitive Ability Tests
- Reductions in Cutoff Scores



# Personality Tests

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- General perception is that they do not have adverse impact
- Generally associated with validity coefficients which are lower than those for cognitive ability tests
- Even if validated on incumbents, validity tends to disappear with applicants



# Personality Tests (cont'd.)

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- Uses self-report format
  - Candidates respond to questions about their themselves and their preferences and interests
- Assume that candidates are self-aware and that they are willing to accurately portray themselves on the tests



## Personality Tests (cont'd.)

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- Applicants tend to score higher than incumbents on personality tests, but lower on cognitive ability tests
- Intentional distortion, or faking, occurs more often with men than women
- Susceptibility to distortion raises questions concerning how top candidates attained their status



# Biodata Instruments

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- Tends to have lower adverse impact than cognitive ability tests
- May have adverse impact against females if developed based on a predominantly male sample
- Generally has higher validity than personality tests



# Biodata Instruments

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- Self-report measures used, which opens up the opportunity for distortion
- Validities tend to degrade over time
  - Biodata items are easier to remember than questions from cognitive ability tests
  - Easy to remember general trends in the types of questions asked



# Interest Inventories

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- Incumbents whose interests correspond to their jobs are more satisfied with their jobs
- When interests correspond to the job, there is some relationship between interests and job performance
- As a self-report, it is also subject to distortion





# Concern with All Self-Report Measures

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- Because of the problem with distortion on personality, biodata, and interest inventories, they are more appropriate for vocational counseling than employee selection



# Combining Cognitive Ability Tests with Self-Report Tests

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- Initial increases in validity are not great and may disappear when used with applicants
- Questionable whether it is appropriate to combine tests that are not compensatory
  - Nice personalities generally do not make up for poor skills



# Reductions in Cutoff Scores of Cognitive Ability Tests

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- Illegal to use separate cutoff scores for different subgroups
- Reductions in cutoff scores will reduce the quality of the workforce obtained through testing
- If the cutoff scores are set too low, a large proportion of candidates will pass and will need to be reduced by potentially less valid procedures



# Reductions in Cutoff Scores of Cognitive Ability Tests

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- Reductions in cutoff scores may not necessarily reduce adverse impact
  - If the proportion of whites who pass increases at a higher rate than the percentage of minorities who pass, the adverse impact could actually increase



# EEI Solutions

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- Recruitment Methods and Metrics
- Measure Specific Abilities Rather than Overall Cognitive Ability
- Remedial Training and Development
- Test-Taking Strategies



# Recruitment Goals

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- Identify candidates with the knowledge, skills and abilities to perform the work
- Enhance diversity of the organization



# Recruitment Sources

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- Use current employees to recruit
- Meet with placement personnel at trade schools and community colleges and provide them with information concerning your needs
- Contact community associations
- Make connections with the military



# Recruitment Metrics

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- Track pass rate by recruitment source
- Track number of qualified minorities obtained from each recruitment source
- Provide feedback to recruitment sources regarding the quality of the candidates provided





# Concentrate on Retention

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- Retaining competent employees reduces the need for recruitment
- Conduct exit interviews a few months after the employee has resigned
- Analyze data from exit interviews to identify patterns and trends
- Introduce interventions to deal with those patterns and trends



# Positive Public Image

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- Publicize your organization's successes
- Take a look at your website through the eyes of an applicant
- Understand generational differences in terms of desirable corporate culture and benefits
- Slant your advertisements towards opportunities rather than focusing on requirements



# Measure Specific Abilities

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- Identify and measure only those abilities that are required on the job
- Measures of specific abilities produce smaller subgroup differences



# Remedial Training and Development

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- Career Assessment and Diagnostic Instrument (CADI)
- Practice Tests
- Test-Taking Strategies



# Career Assessment and Diagnostic Instrument

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- Measures specific abilities required on the job and provides feedback comparing test performance to that of incumbents in the occupational groupings of interest
- Provides people with performance problems with specific information on those areas requiring improvement
- Provides guidance on ways to improve



# Career Assessment and Diagnostic Instrument

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- Assist employees in identifying career goals that are a good match for their abilities
- Provides developmental programs to assist employees in achieving their goals
  - Employees do not have to look outside the organization to achieve their goals
- Improves morale and makes employees feel valued



# Practice Tests

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- Practice tests correspond to actual tests in the constructs measured and the types of items included
- Correct answers are provided, along with explanations on how to solve the problems
- Tutorials are provided on basic concepts
- References are provided for more in-depth study



## Practice Tests (Cont'd.)

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- Practice tests may be accessed on the internet; paper copies are made available to those without internet access
- Expected results:
  - Reduced test anxiety
  - More positive attitude toward the test
  - More positive attitude toward the organization





# Test-Taking Strategies

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- Provides information that may not be available to all groups
- Provides suggestions on what to do:
  - Before the test session
  - During the test session
- Provides resources and references for additional development
- May reduce test error variance



# Test-Taking Strategies (Cont'd.)

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- Before the Test Session:
  - Take practice tests
  - Come to the test well rested
  - Come to the session well in advance of the start of the test



# Test-Taking Strategies

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- During the Test Session:
  - Know the time limit
  - Skip an item that is difficult or taking too much time
  - Eliminate choices you know are incorrect and make your guess from remaining alternatives
  - If there is a penalty for guessing, don't guess randomly



# Other Questions?

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