

## **Multiple Ways to Increase Both Diversity and Expected Job Performance in Hiring and Promoting Police Officers**

Joel P. Wiesen, Ph.D.

Contact: [jw@jpwphd.com](mailto:jw@jpwphd.com), (617) 244-8859

2022 Annual IPAC Conference, 7/19/2022

Wiesen (2022) IPAC Conference

1

## **Print and Audio Links**

- PowerPoints (yet to be posted)
- Audio recording (yet to be posted)
- <http://jpwphd.com/ipac2022>

Wiesen (2022) IPAC Conference

2

## **Questions**

- Short questions only during talk
- Will try to address all questions at the end
  - Much material to cover

Wiesen (2022) IPAC Conference

3

## **Topics of This Presentation**

- Effectiveness of hiring and promoting POs
- Are administrative methods professional?
- Approaches to reduce AI that do not work
- Tests with lower validity can result in higher expected job performance
- Some real-world examples

Wiesen (2022) IPAC Conference

4

## Learning Objective 1

- Describe two research based approaches to both improve diversity in hiring and improve expected job performance of entry-level police officers.

Wiesen (2022) IPAC Conference

5

## Learning Objective 2

- Describe two research based reasons (i.e., findings) for using tests of  $g$  on a pass-fail basis in hiring entry-level police officers.  
( $g$  = cognitive ability or general mental ability)

Wiesen (2022) IPAC Conference

6

## Learning Objective 3

- Describe two major threats to the content validity of police promotional exams based on a reading list.

Wiesen (2022) IPAC Conference

7

## Good News and Bad News

- Look at some bad news first

Wiesen (2022) IPAC Conference

8

## Effectiveness of Hiring/Promoting

- Can mathematically evaluate success rate for entry-level hires based on criterion validity
- Cannot evaluate success rate for promotions
  - Not one criterion-related validation study
    - At least I could not find any criterion studies
  - Any claim of success is a leap of faith
    - Content validity is based on judgements

Wiesen (2022) IPAC Conference

9

## Many Entry Hires Will Fail on Job

- About 40% of new Police Officers are mathematically **expected to fail on the job**
  - 60% fail the job if the test omits crucial KSAPs
- Due to low validity of entrance tests ( $r = .24$ ) and diverse abilities among applicants
- Based on criterion studies (no leap of faith)  
(Source: Wiesen, 2018)

Wiesen (2022) IPAC Conference

10

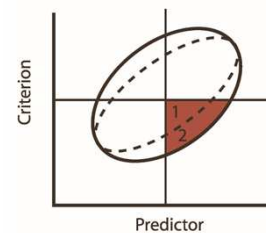
## Hiring Errors

- False Positive:  
A candidate is **hired but fails on the job**
- False Negative:  
A candidate could do the job but is not hired

Wiesen (2022) IPAC Conference

11

## False Positives: Two Levels of $r$



Wiesen (2022) IPAC Conference

12

## Limited Data on Promotions

- The mean score on promotional exams is often (typically?) in the 60's with S.D. < 10
- Highest scores often in the 80's
  - Missing 10+% of crucial knowledges
- Chiefs have told me that they cannot promote the best officers because of their low scores on the civil service exams
- It seems the promotional system is **flawed**

Wiesen (2022) IPAC Conference

13

## Possible Solutions

- Entry-level
  - Change weighting
  - Change components
  - Use administrative approaches
- Promotion
  - Improve exams
  - Change components
  - Train for promotion (would be a major change)

Wiesen (2022) IPAC Conference

14

## Entry-Level Hiring Approaches

- Two goals
- Improve expected job performance
- Improve diversity of hires

Wiesen (2022) IPAC Conference

15

## Six Promising Approaches

- 1 Use cognitive ability tests pass/fail, if at all
- 2 Select tests based on utility, not validity
- 3 Test KSAPs w small, zero, or reverse *d*
- 4 Have testing consultants project the number of diversity hires
- 5 Recruit quality over quantity of candidates
- 6 Use hiring preferences (e.g., residency)

Wiesen (2022) IPAC Conference

16

## 1 Use Tests of $g$ Pass/Fail

- Psychometrics of p/f use of  $g$
- Validity of  $g$  over time on the job
- How much  $g$  is needed?
- Fairness of tests of  $g$
- Real life examples of pass/fail

## Psychometrics of P/F Use of $g$

- Traditional wisdom:  $g$  is best
- Traditional wisdom is changing:  $g$  helps

## Prevalent Wisdom Is Changing

- $g$  is not the highest validity
- Tests of  $g$  are deficient
  - Deficient measures of intelligence
  - Valid KSAPs beyond  $g$
- Many **false positive** hires with a test of  $g$
- Validity sums, not averages (usually)
- Composites usually have lower  $d$  than  $g$

## Low Validity of $g$ for PO

- Meta-analysis
  - $r = .27$ , over corrected
    - Corrected for predictor unreliability
  - **$r = .24$ , corrected**
    - Corrected for all but predictor unreliability

Source: Aamodt (2004)

## Assessment Centers vs $g$

- Meta-analysis of studies of **both** AC and  $g$
- “In contrast to Schmidt and Hunter’s ... reporting ... .51 for ability and .37 for ACs, we found ... mean validity of .22 for ability and .44 for ACs.”
- Assessment exercises have higher validity

(Source: Sackett, Shewach, & Keiser, 2017)

Wiesen (2022) IPAC Conference

21

## Re-Evaluation of Meta-Analyses

- Overcorrection for restriction of range
  - $r = .31$  for  $g$  (was .51)
  - $r = .42$  for structured interviews (was .51)
  - $r = .40$  for job knowledge tests (was .48)
  - Highest validity: interviews
    - Perhaps because measure range of KSAPs
- (Source: Sackett, Zhang, Berry & Lievens, 2021)

Wiesen (2022) IPAC Conference

22

## $g$ Less Valid with Passing Years

- GPA as proxy for  $g$  (and more)
  - $r = .49$  at 1 year post college graduation
  - $r = .33$  at 2-5 years post graduation
  - $r = .12$  at 6 years post graduation
  - All corrected  $r$ 's with job performance
- (Source: Roth, BeVier, Switzer & Schippmann, 1996)

Wiesen (2022) IPAC Conference

23

## Use of $g$ to Rank Yields High $d$

- Even low weight for  $g$  causes composite AI
  - Sackett & Ellingson (1997, Table 2)
- Effective weight for AI can be different than weight in composite formula
- Conclusion: use tests of  $g$  on pass-fail basis
  - Don't let low validity, high  $d$  test drive AI

Wiesen (2022) IPAC Conference

24

## Do Police Officers Need High $g$ ?

- Mean IQ for police officers = 104
  - Aamodt (2004b, based on total of 4,061 POs)
  - Median and mode surely lower than mean
- Similar normative data for the Wonderlic

## Psychometric Evaluation

- $g$  weakly predicts PO job performance
- $g$  drives adverse impact (AI)
- Even low weight for  $g$  causes composite AI
- Other predictors have good  $r$  & smaller  $d$
- Questions about fairness of tests of  $g$ 
  - Indications of bias in job performance criteria

## APA: Fairness Overrides Validity

- “If ... excluding some components ... has a noticeable impact on selection rates for groups ... the intended interpretation of test scores ... would be **rendered invalid.**”
  - Joint *Standards* (AERA, APA, NCME, 2014, page 21, col 1, par 1, emphasis added)
- Joint *Standards* say not measuring low  $d$  KSAP invalidates any validity

## Where P/F Approach Was Used

- Miami, FL
  - (E. Kraus, personal communication, 4/4/2018)
- Bridgeport, CT
  - M/C pass/fail, ranks based on oral board (Only In Bridgeport, 2015))
- Columbus, OH Police (Columbus CSC, 2014)
  - M/C and writing sample pass/fail
  - Ranks on oral/video test of problem solving

## 2 Select Tests Based on Utility

- Utility is the bottom line
  - Validity is only one of 3 drivers of utility

## What Is Utility

- “Projected productivity gains ... due to use of the selection procedure”
  - (SIOF *Principles*, 2018, page 33, col 1, par 4)
- We will use change in % false positives
- We will ignore cost of recruitment, testing, training, etc., and focus on job performance (for the sake of this presentation)

## Utility $\neq$ Validity

- Utility: “projected productivity gains ... due to use of the selection procedure” (SIOF, 2018)
- Validity: “evidence and theory support ... proposed uses of ... selection procedure”
  - Test scores are related to job performance
  - Validity is not a measure of job performance
- **Most valid  $\neq$  most job performance gain**

## Three Variables Drive Utility

- Quality of applicants (**Q**)
  - Proportion of applicants who can do the job
  - Best way to improve expected job performance
- Number of openings and applicants
  - Selection ratio (SR)
- Validity (**r**)
  - Cascio & Aguinis (2011, pg 328)
  - Taylor & Russell (1939)



## Is Utility or Validity Primary?

- Utility and validity are different but related
- Profession seems to largely ignore utility
- **A less valid test can have higher utility**
- Selecting tests on utility may favor diversity
- Management is interested in **utility**

Wiesen (2022) IPAC Conference

33

## Now We Largely Ignore Utility

- No review of utility in test technical manual
- Past claims of high utility poorly received
- 1970 *EEOC Guidelines* called for high utility (Guion, 2011, page 128)
- Superseded by 1978 *Uniform Guidelines*
  - Business necessity not interpreted as utility
- But **utility is the reason we test**
  - Validity is important as it contributes to utility

Wiesen (2022) IPAC Conference

34

## What Happens with Higher Q?

- We hire better people
- Less room for improvement over chance
  - Cannot do much better than hiring randomly
  - **Utility is lower**

Wiesen (2022) IPAC Conference

35

## Which More Important: Q, SR, r?

- In theory: all 3 are very important
- In practice: Q and SR more easily changed
  - r is hard to change
- Better SR comes with worse adverse impact
- **Takeaway: Pay attention to recruitment**

Wiesen (2022) IPAC Conference

36

## Practical Implications of $Q$

- Can only select from among applicants
  - If no good applicants, cannot hire superstars
  - If all applicants great, all hires will be great
    - Random hiring will yield superstars
- NOTE:** The above do not depend on  $r$
- Must pay attention to recruitment
  - Cannot recruit more after we see test scores

Wiesen (2022) IPAC Conference

37

## High Validity with Zero Utility

- Test can have no practical import
- If not enough candidates and all are hired
- If all candidates are outstanding
- So need to look carefully at utility
- Less valid test can have higher utility

Wiesen (2022) IPAC Conference

38

## Less Valid Test w/ Higher Utility

- Test of  $g$ :  $r = .24$ ,  $Q = .95$ 
  - i.e., 95% of applicants have the  $g$  to do the job
  - e.g., PD that requires a college degree to apply
- Test of personality:  $r = .15$ ,  $Q = .5$
- Max possible utility of  $g = 5\%$
- Max possible utility of personality = 50%

Wiesen (2022) IPAC Conference

39

## 3 Test Valid Abilities w/ Low $d$

- Must rank on some valid test
- Preferably a test with low  $d$

Wiesen (2022) IPAC Conference

40

## Low $d$ , Job-Related Abilities

- Face recognition and memory
- Creative problem solving
- Oral communication
- Conscientiousness, integrity, etc.
- New ways to measure intelligence
- Structured oral exams

Wiesen (2022) IPAC Conference

41

## Face Recognition: Definition

- Face recognition and memory
- Recognize lost persons and perps
- Use faces that mirror the community
- Use faces that mirror the offenders

Wiesen (2022) IPAC Conference

42

## Face Recognition: $d$

- Expect **reverse** impact
- Remembering and identifying minority faces is easier for members of that minority group
  - e.g., Levin (2000)

Wiesen (2022) IPAC Conference

43

## Where Low $d$ KSAPs Used

- Many jurisdictions/consultants measure non- $g$  areas
- Some jurisdictions use oral exams to rank
  - Miami, FL
  - Bridgeport, CT
  - Columbus, OH
- **No** PDs use face recognition/memory
  - As far as I know

Wiesen (2022) IPAC Conference

44

## Unrealistic Claims of Fairness

- Issue: We claim tests are fair despite evidence that job criteria are biased
  - Women paid less than men for same work
  - Short people paid less than tall
  - Homely people paid less than handsome
- Our tests fairly predict biased criteria
  - Perhaps this shows our tests are biased
- $d$  for test and job performance

Wiesen (2022) IPAC Conference

45

## M-W Test $d = 1.0$ , Job $d = 0.5$

- The Minority-White (M-W) mean score difference ( $d$ ) on test score is twice the  $d$  on job performance
- This is unfair on its face, but we define fairness in a way that gets around it
- Solution: Test more KSAPs

Wiesen (2022) IPAC Conference

46

## Formulas

- Formulas available in Wiesen (2018)
  - Standardized mean score difference
  - Pooled estimated population standard deviation

Wiesen (2022) IPAC Conference

47

## 4 Project Number of Diversity Hires

- Empower the PD to choose testing approach
- Empower managers to make tradeoffs

Wiesen (2022) IPAC Conference

48

## Watchword “No Surprises”

- Managers do not like surprises
- Projections attempt to avoid surprises
- Increase role of PD in making decisions
- Improve PD decisions on consultant hiring

## Focus the Proposal Comparison

- Help the PD evaluate proposed selection systems
- Increase the role of PD in deciding about tradeoffs between conflicting goals
  - Cost and features
  - Validity
  - Utility
  - Diversity of hires, evaluated numerically

## Focus the Proposal Comparison

- Focus decision-making on likely results
- Hiring projections essential for managers
- Managers are responsible for the testing decisions, so they should make the decisions

## Numeric Projections

- Project number of hires by protected class
- Project adverse impact
- Project utility
- Describe cost and timeline
- Need to clarify all the above

## Proposal Comparison Form

| Police Officer Selection System Proposal Evaluation Form |                             |                             |
|--|-----------------------------|-----------------------------|
| Topic  | Selection System Approach 1 | Selection System Approach 2 |
| <b>1. Projected Number of Hires</b>                      |                             |                             |
| Projected number of whites hired                         |                             |                             |
| Projected number of blacks hired                         |                             |                             |
| Projected number... etc.                                 |                             |                             |

## Proposal Comparison Form

| Police Officer Selection System Proposal Evaluation Form |                             |                             |
|--|-----------------------------|-----------------------------|
| Topic  | Selection System Approach 1 | Selection System Approach 2 |
| <b>2. Projected Adverse Impact</b>                       |                             |                             |
| Ad Impact: black   |                             |                             |
| Ad Impact: Hispanic                                      |                             |                             |
| Etc.   |                             |                             |

## Proposal Comparison Form

| Police Officer Selection System Proposal Evaluation Form |                             |                             |
|--|-----------------------------|-----------------------------|
| Topic  | Selection System Approach 1 | Selection System Approach 2 |
| <b>3. Projected Job Performance</b>                      |                             |                             |
| Option 1. Mean using SAT-type scale                      |                             |                             |
| Opt. 2. % hires who will be successful                   |                             |                             |
| Opt. 3. Other job performance measure                    |                             |                             |

## Proposal Comparison Form

- Full form available  
– Wiesen (2018)

## 5 Recruit Quality Candidates

- Recruitment and validity have about equal impact on utility in usual situations
- In general, test validity has not improved in the past several decades (Cascio & Aguinis, 2008, page 141)
- Easier to improve recruitment than validity

## 6 Residency Preference; HS GPA

- Points for residents of the municipality
  - Knowledge of the community
- Points for working in the municipality
- Credit for high school GPA
  - HS GPA is as valid as a test of *g*
- Rank based on high school GPA

## Grant Residency Preference

- Residency preference is historic
  - Absolute
  - Points added to final exam score
- Absent residency preference, majority of force can come from outside the city
- Use where poor city schools are surrounded by rich suburban schools
  - Unequal educational systems

## Use High School Rank

- But schools may have different standards
- However, a study showed  $r = .91$  between GPA standardized within school or across schools and job performance
  - Sternberg (2006, page 331, col. 1, par. 3)

## Use High School Rank

- High school GPA and SAT [g?] scores both predict college GPA well and about equally
  - Schmitt et al. (2007, Table 4)
  - Berry & Sackett (2009, Table 1)
  - Sternberg (2006, Table 7)
- Education attainment has lower levels of adverse impact than tests of GMA
  - Berry, Gruys & Sackett (2006)

Wiesen (2022) IPAC Conference

61

## Administrative Tools Are Professionally Acceptable

- Joint Standards do **not** require the most valid selection procedure.
  - “Where ... validity exists, the decision as to whether to actually administer a particular test generally takes additional considerations into account. These include ... weighing of any negative consequences against the positive consequences of test use.” (AERA et al., 2014, pg 11, col 1, par 2; also see pg 21, col 2, par 4).

Wiesen (2022) IPAC Conference

62

## Non-Testing Approaches

- Are our expectations for tests too high?
  - Need to go beyond testing
- Non-testing approaches to improve job performance
  - Training

Wiesen (2022) IPAC Conference

63

## Time to Train POs

- USA: Average of **21 weeks** in academy
- Europe: Several **years** to become a PO
- Average # hours required to be a **barber** is greater than # hours required to be a PO
- **Nurses train for 2-4 years**. Why not POs?

Source: <https://www.cbsnews.com/news/police-training-weeks-united-states/>

Source: <https://www.cnn.com/2016/09/28/us/jobs-training-police-trnd/index.html>

Wiesen (2022) IPAC Conference

64



## Approaches to Promotion

- No criterion-related validation studies for police promotion
  - This is a serious limitation
  - How can we tell if our exams are working?
  - If you know of any such studies, please tell me

Wiesen (2022) IPAC Conference

65

## Improve Promotional Exams

- Definition of a good item
- Item protests subvert item quality
- Knowledge of law items
- Definition items

Wiesen (2022) IPAC Conference

66

## Two Definitions of a Good Item

- No protests or challenges
  - Quotes straight from textbook
- Tests what Sergeants need to know
  - Extrapolate from textbook
  - Apply knowledge to new situations

Wiesen (2022) IPAC Conference

67

## Item Protests Subvert Item Quality

- Lay body evaluates item protests
- Easiest way to defend an item is to show it is taken directly from a source document
- Reading lists also subvert item quality if they result in items that quote from sources
  - Test recognition of wording, not understanding

Wiesen (2022) IPAC Conference

68

## Item Protests Subvert Item Quality

- Items with verbatim quotes from sources measure recognition of wording not application of knowledge
- Such items don't measure application of K
- Better: Use more job simulation questions
  - Rely on SMEs to extrapolate from textbook

Wiesen (2022) IPAC Conference

69

## Knowledge of Law Items

- Law items often are exact replication of a case
- No deviation from the court case because no one knows what a court may rule if the facts were somewhat different
- But this omits exactly what a PO or Sgt needs to do to perform the job: apply the law to new situations

Wiesen (2022) IPAC Conference

70

## Use of Definition Items

- Definition items are easy to write
- K of definition is only weakly related to application of knowledge
- Avoid definition items, in general
- Use more job simulation questions

Wiesen (2022) IPAC Conference

71

## Assumptions Revisited

- Compensatory grading is illogical
- 100 items is long enough
- Are claims of fairness realistic?

Wiesen (2022) IPAC Conference

72

## Compensatory Grading Illogical

- Grade is based on # correct
- Tests cover many unrelated topics
- Can promote person with gaps in KSAPs
  - Strong in law and weak in criminal investigation
- Solution: Consider multiple passing points for crucial KSAPs

Wiesen (2022) IPAC Conference

73

## Our Tests Are Too Short

- Test outline topics with only 1 or 2 items
- Few items  $\Rightarrow$  unreliable measure
- Unreliable measure  $\Rightarrow$  invalidity
- Solution: longer tests

Wiesen (2022) IPAC Conference

74

## MC Tests Do Not Test Creativity

- Creative problem solving important
- M/C tests test recognition of solution
- M/C does not test for thinking of a solution
- Solution: More test modes

Wiesen (2022) IPAC Conference

75

## Promotion to Sergeant & Above

- Problems:
  - Low mean M/C test scores for all candidates
  - M/C tests often have adverse impact
  - Emphasis on rote memorization
- Solutions:
  - Assure knowledge in other ways
  - Do not rank based on M/C tests
  - Rank on valid KSAPs other than a M/C test

Wiesen (2022) IPAC Conference

76

## Low Mean Scores on M/C tests

- What do the M/C tests measure?
  - Important police knowledges
  - Must know, cannot look up on the job
  - Thousands of pages of SOPs, law, etc.
- Mean scores often low (in the 60's)
- We promote people with critical K gaps
- Incumbents often fail the promotion test

Wiesen (2022) IPAC Conference

77

## Promoted w Low Exam Scores

- Often, highest test score is in 80's
- Items chosen to be important, even crucial
  - Miss 10+ crucial items
- Possible explanations
  - No training for new job (esp. promotions)
  - Exams not related to (most) job duties
- Implication: high false positive rate

Wiesen (2022) IPAC Conference

78

## Incumbents Often Fail the Test

- In one jurisdiction, candidates for sergeant and lieutenant take the same 80 item test
  - Lieutenants then take an additional 20 items
- Applicants for Lt have studied
- Applicants for Lt have 3+ years on the job
- 12% of Sergeants fail the Sgt exam
- 15% of minority Sgts fail the Sgt exam

Wiesen (2022) IPAC Conference

79

## Why Do Incumbents Fail?

- All incumbent Sgts scored high enough to be promoted in the past
- Did they forget what they once knew?
- Did years on the job cause them to forget?
- Low reliability tests?
- Promoted due to guessing (chance)
- No good reason for incumbent failure rates

Wiesen (2022) IPAC Conference

80

## Rater Reliability Inflated

- Typically, we measure within panel rater reliability and it is high, after discussion
- Between panel reliability is much lower
- High reliability within panels (.8's, .9's)
- Low reliability between panels (.4's to .7's)
- Solutions: Better rater training; types of exercises that led to low and high reliability

Wiesen (2022) IPAC Conference

81

## Re-Envision Promotional Tests

- No training for promotion
- We expect Police Officers to teach themselves how to be Sergeants

Wiesen (2022) IPAC Conference

82

## Re-Envision Promotional Tests

- Now: Issue reading list and then test
  - Scores based on rote knowledge of sources:
    - Rules, procedures, and guidelines, and sometimes police science or other textbooks
- Books teach principles but give no practice
  - Interpersonal aspects of supervision
  - Problem solving
  - Strategy & tactics

Wiesen (2022) IPAC Conference

83

## Re-Envision Promotional Tests

- Future: Train to criteria on written sources
  - SOPs
  - Directives
  - Law
  - Textbooks (practical in orientation)
- Train to criteria on strategy and tactics
- Train to criteria on supervision, leadership

Wiesen (2022) IPAC Conference

84

## Ideas for Implementation

- PD developed courses in strategy/tactics
- Self-paced learning of sources
- Mastery tests to earn course credit
- Retake course if needed
- Many short courses on the sources

Wiesen (2022) IPAC Conference

85

## Little Use of Job Performance

- Commonly accepted that past job performance is best predictor of future job performance

Wiesen (2022) IPAC Conference

86

## Job Performance on the Test

- Body worn cameras allow supervisors to observe job performance as never before
- Unfortunately, PDs now only view body cams if there is a serious incident
- Missing the opportunity to evaluate everyday interactions with the community

Wiesen (2022) IPAC Conference

87

## If We Are Too Conservative

- If we continue as we have in the past, the adverse impact will continue unabated

Wiesen (2022) IPAC Conference

88

## The Field Suffers from Secrecy

- Consultants refine their products
- Best work is not shared
  - BARS
  - M/C items
  - Work sample items
- Field advances slowly without sharing
- IPAC goal is to share work

Wiesen (2022) IPAC Conference

89

## Learning Objective 1 w/ Answers

- Describe two research based approaches to both improve diversity in hiring and improve expected job performance of entry-level police officers.
- Do not rank based on *g*
- Measure KSAPs with low or reverse impact (e.g., face recognition, creativity, conscientiousness)

Wiesen (2022) IPAC Conference

90

## Learning Objective 2 w/ Answers

- Describe two research based reasons (i.e., findings) for using tests of *g* on a pass-fail basis in hiring entry-level police officers.
- Validity of *g* decreases with time (per some studies)
- Validity of personality increases with time

Wiesen (2022) IPAC Conference

91

## Learning Objective 3 w/ Answers

- Describe two major threats to the content validity of police promotional exams based on a reading list.
- Questions tend to measure memory of facts rather than application of knowledge
- Few test questions for some knowledges

Wiesen (2022) IPAC Conference

92

## Takeaways

- Recruitment can improve utility more than testing
- A low validity test can have high utility
- A high validity test can have low utility
- $g$  is not the best predictor of job performance

Wiesen (2022) IPAC Conference

93

## Topics Not Covered

- Validity sums (validity does not average)
- Adding a low validity test improves validity
- Numeric examples
- Other ways to reduce adverse impact
- Other real life applications
- Some of this is on my website:  
<http://jpwphd.com/ipac2022>

Wiesen (2022) IPAC Conference

94

## Question and Answer Time

- Related:  
– <http://jpwphd.com/papers>
- Contact me after the conference, too.  
Joel P. Wiesen, Ph.D,  
[jpw@jpwphd.com](mailto:jpw@jpwphd.com)  
(617) 244-8859 (land line)

Wiesen (2022) IPAC Conference

95

## References

- Aamodt, M. G. (2004a). *Research in Law Enforcement Selection*. Boca Raton, FL: Brown Walker Press.
- Aamodt, M. G. (2004b). *Law Enforcement Selection: Research Summaries*. Washington, D.C.: Police Executive Research Forum.

Wiesen (2022) IPAC Conference

96



## References

- AERA, APA, NCME. (2014) *Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association.

## References

- Berry, C. M., Gruys, M. L. & Sackett, P. R. (2006). Educational Attainment as a Proxy for Cognitive Ability in Selection: Effects on Levels of Cognitive Ability and Adverse Impact. *Journal of Applied Psychology, 91*, 696–705.

## References

- Berry, C. M. & Sackett, P. R. (2009) Individual differences in course choice result in underestimation of the validity of college admissions systems. *Psychological Science, 20*, 822-830.

## References

- Cascio, W. F. & Aguinis, H. (2008). Staffing Twenty-first-century Organizations. *The Academy of Management Annals, 2*, 133–165.
- Cascio, W. F. & Aguinis, H. (2011). *Applied Psychology in Human Resource Management*. Boston: Pearson.

## References

- Columbus Civil Service Commission (2014). *Study Guide for the City of Columbus, Ohio Police Officer Entry Level Examination*. Downloaded 4/5/2017 from <https://www.columbus.gov/civilservice/uniformed-police-series/Police-Officer/>

## References

- Guion, R. M. (2011). *Assessment, Measurement, And Prediction For Personnel Decisions* (2<sup>nd</sup> ed.) Bowling Green State University. New York: Routledge.

## References

- Levin, D. T. (2000) Race as a Visual Feature: Using Visual Search and Perceptual Discrimination Tasks to Understand Face Categories and the Cross-Race Recognition Deficit. *Journal of Experimental Psychology: General*, 129, 559-574.

## References

- Only In Bridgeport (Web Magazine). (2015, July 27). *Finch Announces New List For Police Recruits*. Retrieved from <http://onlyinbridgeport.com/wordpress/finch-announces-new-list-for-police-recruits/>

## References

- Roth, P. L., BeVier, C. A., Switzer III, F. S. & Schippmann, J. S. (1996). Meta-Analyzing the Relationship Between Grades and Job Performance. *Journal of Applied Psychology, 81*, 548-556.

Wiesen (2022) IPAC Conference

105

## References

- Sackett, P. R. & Ellingson, J. E. (1997). The effects of forming multi-predictor composites on group differences and adverse impact. *Personnel Psychology, 50*, 707-721.

Wiesen (2022) IPAC Conference

106

## References

- Sackett, P. R., Shewach, O. R. & Keiser, H. N. (2017). Assessment centers versus cognitive ability tests: challenging the conventional wisdom on criterion-related validity. *Journal of Applied Psychology, 102*, 1435–1447.

Wiesen (2022) IPAC Conference

107

## References

- Sackett, P. R., Zhang, C., Berry, C. M., & Lievens, F. (2021, December 30). Revisiting Meta-Analytic Estimates of Validity in Personnel Selection: Addressing Systematic Overcorrection for Restriction of Range. *Journal of Applied Psychology*. Advance online publication. <http://dx.doi.org/10.1037/apl0000994>

Wiesen (2022) IPAC Conference

108

## References

- 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.

## References

- SIOP (2018). *Principles for the Validation and Use of Personnel Selection Procedures*, 5th ed. Bowling Green, OH: Author.

## References

- Sternberg, R. G. (2006). The Rainbow Project: Enhancing the SAT through assessments of analytical, practical, and creative skills. *Intelligence*, 34, 321–350.

## References

- 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.

## References

- Wiesen, J. P. (2018). *Tools to Increase Diversity, Utility, and Validity in Hiring Police Officers*. Presented at the 33rd Annual Convention Society for Industrial and Organizational Psychology, Chicago, IL.