
Validating Psychological Screening Examinations and Background Investigations for Applicant Screening

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Agenda

- Background (12 min)
- Approach (15 min)
- Results & Limitations (8 min)
- Q&A (10 min)

Project Context

- Needed to validate Psychological Exam (PsyE) and Background Investigation (BI) that were part of public safety screening
- Why administer a PsyE or BI at all?
 - Federal Bureau of Investigation requires that employees must undergo a BI prior to being granted access to Criminal Justice Information System (CJIS)
 - Minnesota POST Act requires a psychological screening exam and a background check
 - These jobs involve the public trust, authority over others, access to individuals when they're at their most vulnerable

Screening Tools

- Psychological Examination (PsyE)
 - Conducted by a Clinical Psychologist who specializes in screening for public safety positions
 - Include in-depth clinical interview and tests/inventories designed to detect psychopathology, potential for substance abuse, thought disorders, etc.
- Background Investigation (BI)
 - Conducted by trained investigators
 - Include criminal record checks and verification of information supplied in a self-report personal history statement (e.g., education, employment, and/or credit history)
- For both exams, result is often a dichotomous judgment (recommended/not recommended)
- Purpose is to find evidence that applicant is *not* suited for a position of public trust; opposite of many selection procedures

Why Validate?

- In general
 - To ensure that selection tools work in the manner intended
 - To provide a defense in the event that use of a particular selection tool results in adverse impact
- And, in this instance
 - To comply with the terms of a Consent Decree

How Validate?

- Uniform Guidelines (EEOC, 1978) outline three validation strategies: Content, Construct, and Criterion-related
- BUT validation is broader than these three strategies
 - “The essential principle in the evaluation of any selection procedure is that evidence be accumulated to support an inference of job relatedness.” (*Principles for the Validation and Use of Personnel Selection Procedures*, 4th edition, 2003, SIOP)
 - “The process of validation involves accumulating evidence to provide a sound scientific basis for the proposed score interpretation.” (*Standards for Educational and Psychological Testing*, 1999, AERA/APA/NCME)

How Validate? (con't)

- For these screening tools, virtually impossible to apply validation strategies exactly as outlined in UG
 - Evidence of predictive accuracy (criterion-related validity evidence) very difficult to obtain
 - Lack of variability in predictor because jurisdictions don't knowingly hire anyone who would fail the screen
 - Lack of variability in the criterion because base rate of egregious negative behaviors is low (e.g., criminal conduct)
 - PsyE/BI don't purport to be a *sample* of job knowledge or behavior which is the hallmark of a content-based validation strategy
 - Construct validity, as defined by UG, requires evidence of predictive accuracy
- We collected evidence to support the job relatedness of the PsyE and BI

How Validate? (con't)

- Validate each component within the PsyE and/or BI?
 - Clinical Psychologist/Background Investigators gather information from multiple sources including, for PsyE, a clinical interview and objective tests
 - Some sources of information utilized for all applicants, others only if there are negative indications in a particular area
 - Final judgment is based on all information from all sources
- Decided to focus on the PsyE exam and BI as a whole
 - “Selection procedures are demonstrated to be job related when evidence supports the accuracy of inferences made from scores on, or evaluations derived from, those procedures with regard to some important aspect of work behavior (e.g., quality or quantity of job performance, performance in training, advancement, tenure, termination, or other organizationally pertinent behaviors).”
(*Principles for the Validation and Use of Personnel Selection Procedures*, 4th edition, 2003, SIOP)

Project Background

- Police Department
 - Police officer (sworn)
 - 47 non-sworn jobs
 - 911 Operator
 - Forensic Scientist
 - Community Service Officer
 - Crime Prevention Specialist
 - Accountant
 - Police Typist
- Fire Department
 - Entry-level Fire Cadet

Step 1: Document Working Conditions

- Existing job analysis studies conducted by different consulting firms
 - Somewhat different approaches, although both administered a JAQ
 - Wanted to use existing job analysis information to the extent possible
- In Police Department, worked with job experts to identify ways that employees might
 - Access/Use CJIS
 - Access/Encounter confidential information, valuable property, dangerous weapons, vulnerable persons
 - Logical justification for measuring traits such as integrity, conscientiousness, and emotional stability (or lack thereof)
- Documented frequency with which these conditions occur (questionnaire administered to incumbents)

Example List

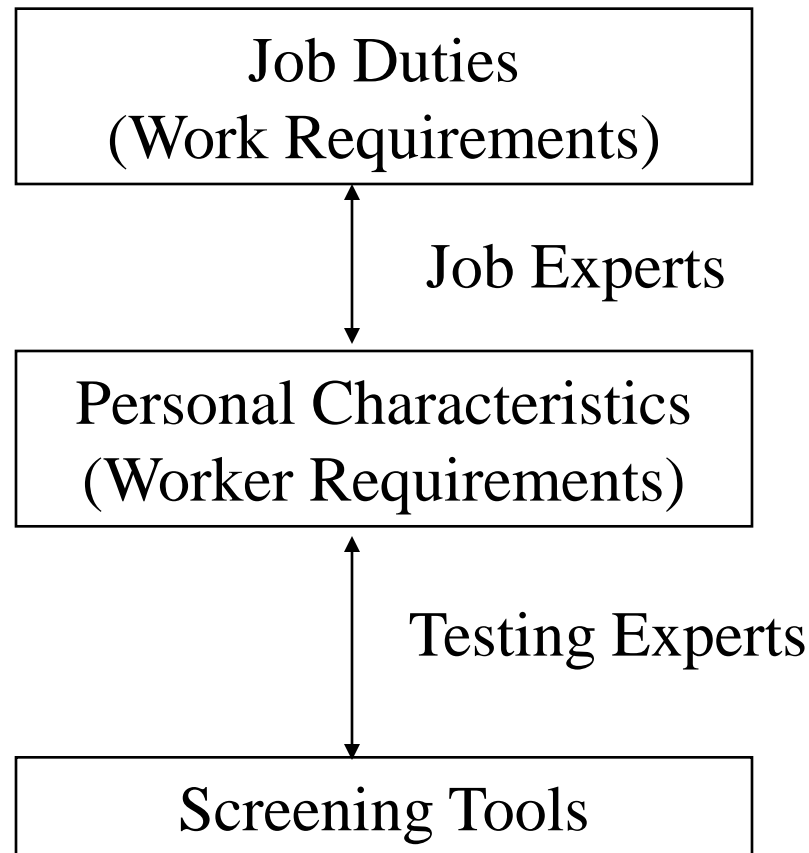
1. Access to/Use the NCIC/CJIS computer system.
2. Access to/Use the County/SIPs computer system.
3. Access to/Encounter confidential information about ongoing investigations (e.g., internal investigations, search and arrest warrants; location of wire taps or surveillance systems; information about cause of death; identity of victim or suspect).
4. Access to/Encounter confidential information about employees of the Police Department (e.g., medical records, personnel records, details of an internal investigation).
5. Access to/Encounter property and/or evidence that has been inventoried by the Police Department (e.g., cash, weapons, drugs, alcohol, jewelry).
6. Access to/Handle Police Department or City funds or property worth more than \$500.
7. Access to dangerous weapons.
8. Access to private residences or businesses when others are present (e.g., to conduct home/business premises surveys, to attend a block club meeting, to give a home security demonstration).
9. Access to/Responsible for children or vulnerable adults pending a final decision regarding their status (e.g., supervising children until a guardian arrives).

Results for Two Non-Sworn Jobs

Non-Sworn Job Title	Avg Freq NCIC/CJIS Use*	Activities Performed Monthly or More Frequently (Average Rating ≥ 3.0)
911 Operator	4.9	<ul style="list-style-type: none"> • Access to/Use the NCIC/CJIS computer system. • Access to/Use the County/SIPs computer system. • Access to/Encounter confidential information about ongoing investigations (e.g., internal investigations, search and arrest warrants; location of wire taps or surveillance systems; information about cause of death; identity of victim or suspect).
Crime Prevention Specialist	2.9	<ul style="list-style-type: none"> • Access to/Use CAPRS computer system. • Access to/Encounter confidential information about ongoing investigations (e.g., internal investigations, search and arrest warrants; location of wire taps or surveillance systems; information about cause of death; identity of victim or suspect). • Access to/Encounter confidential information about members of the public (e.g., medical history, non-public criminal history information, financial information). • Access to private residences or businesses when others are present (e.g., to conduct home/business premises surveys, to attend a block club meeting, to give a home security demonstration).

* 0 = Never, 1 = Annually, 2 = Semi-Annually, 3 = Monthly, 4 = Weekly, 5 = Daily

Step 2: Document Links between Job, Personal Characteristics, and Screening Tools



Step 2: Document Links between Job, Personal Characteristics, and Screening Tools (con't)

- Identified personal characteristics that appear to be measured by each screening tool, based on
 - Information about PsyE and BI
 - Research literature
 - Input from professionals who conduct PsyE and BI
 - Input from Psychologists with expertise in individual differences and test development
- Some already present in earlier job analysis studies, some derived specifically for this effort
- Some at a broad level, others at a more detailed level

Step 2A: Job Experts Link Personal Characteristics to Jobs

- Job incumbents and supervisors judged importance of each personal characteristics for performing target job(s)

How important is this personal characteristic for performing the job?

0 = Not applicable; not needed

1 = Unimportant

2 = Minimally important

3 = Important

4 = Very important

5 = Extremely important

Step 2B: Testing Experts Link Personal Characteristics to Screening Tools

- Testing experts in these studies
 - Ph.D.-level training in I/O, Counseling, or Clinical Psychology
 - Experience in personnel selection/screening
 - Experience with public safety jobs
- Need a reasonable understanding of psychological examinations

Step 2B: Expert Judgment Procedure (con't)

- Gave testing experts detailed information about
 - Target job(s)
 - PsyE & BI used in each Department
 - Procedures/instruments/forms
 - Psychometric properties of tests/measures used as part of the overall exam/investigation
- Experts rated relevance of PsyE and/or BI for measuring personal characteristics critical for
 - Police Officer job
 - Non-sworn Police Department jobs (BI only)
 - Fire Cadet job
- “Relevance” = job relatedness

Rating Scale & Forms

How relevant will the information elicited by this screening tool be for evaluating each of the critical personal characteristics?

0 = Not at all relevant

1 = Somewhat relevant

2 = Moderately relevant

3 = Very relevant

4 = Extremely relevant

PsyE	BI	Broad Personal Characteristics
		Problem-Solving Ability – to think of possible causes for a problem and to solve it quickly and effectively.
		Mechanical Comprehension – to understand the relationship of physical forces and mechanical elements; to understand the way machines, tools, and equipment operate.

PsyE	BI	More Narrowly-Defined Personal Characteristics
		Ability to withstand substantial stress and pressure as generated by life endangering circumstances encountered in job situations.
		Ability and willingness to accept danger as a normal part of job duties, and put the safety of citizens above safety of self.

Step 2B: Expert Judgment Procedure (con't)

- First, evaluated relevance for measuring broad characteristics in previously-administered JAQ, e.g.,
 - Professional Behavior & Bearing
 - Emotional Stability
 - Work Habits
- Second, evaluated relevance for measuring more narrowly-defined characteristics
 - Identify sub-elements within broad competencies for which PsyE or BI is *particularly* relevant (Police Officer job)
 - Shows integrity; is morally and legally above reproach (PB&B)
 - Can handle the position without abusing authority (PB&B)
 - Tolerates substantial stress and pressure generated by life-threatening circumstances, heavy workload, and/or time pressure (ES)
 - Good punctuality and attendance (WH)
 - Evaluate additional, more narrowly-defined characteristics that PsyE or BI likely measures (Fire Dept study)

Step 2B: Expert Judgment Procedure (con't)

- Compile ratings and calculate
 - Inter-rater agreement
 - Average relevance rating for each characteristic
 - Standard deviation of ratings for each characteristic

Example Results: Expert Ratings

PsyE	BI	Personal Characteristics
3.7	0.7	1. Ability to withstand substantial stress and pressure as generated by life endangering circumstances encountered in job situations.
3.0	0.4	2. Ability and willingness to accept danger as a normal part of job duties, and put the safety of citizens above safety of self.
3.3	0.4	3. Freedom from abnormal fears or preoccupation related to job duties, including, but not limited to, the fear of heights or enclosed spaces, or pyromania.
3.3	3.6	4. Ability and willingness to maintain abstinence from mood-altering (non-prescribed, controlled, or illegal) chemicals while at work.
3.3	3.7	5. Ability and willingness to maintain freedom from chemical abuse or dependency.
3.7	3.4	6. Ability and willingness to exercise honesty and integrity in all interactions with the public, peers, and supervisors.
3.1	2.4	7. Ability and willingness to work within a para-military command structure (e.g., accepting the authority of, and obeying orders issued by, superior officers, without undue friction or resentment).
3.3	3.0	8. Ability and willingness to maintain regular attendance and be punctual.

Each cell contains the average relevance rating.

0 = Not at all relevant, 1 = Somewhat relevant, 2 = Moderately relevant, 3 = Very relevant, 4 = Extremely relevant

Results: Inter-Rater Agreement*

	Psy E	BI
<i>Police Officer Job</i>		
• # Raters	10	10
• # Characteristics	19	19
• Intra-class correlation	0.94	0.88
<i>All Non-Sworn Jobs in Police Dept</i>		
• # Raters	--	10
• # Characteristics	--	38
• Intra-class correlation	--	0.72
<i>Fire Cadet Job</i>		
• # Raters	7	7
• # Characteristics	22	22
• Intra-class correlation	0.78	0.89

* Shrout, P.E., & Fleiss, J.L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420-428. [Model 3,k results reported on this slide]

Summary Results: PsyE for Police Officer Job

Highly Relevant for measuring

1. Emotional Stability
 - freedom from abnormal fears & preoccupations related to police officer duties
 - tolerates substantial stress and pressure generated by life-threatening circumstances, heavy workload, and/or time pressure
2. Sensitivity in Dealing with Groups
 - is sensitive to all racial and ethnic groups
3. Relations with Co-Workers
 - does not display biases with regard to particular types of people
4. Maturity when Working in Stressful Situations
5. Initiative in Handling and Resolving Situations
6. Public Contact Situations: Communication Style

Moderately Relevant for measuring

7. Judgment
8. Relations with Supervisors and Management
 - shows desire to improve, accepts training and constructive criticism
9. Paperwork
10. Freedom from Chemical Abuse/Dependency
11. Work Habits
12. Professional Behavior & Bearing
 - can handle the position without abusing authority

Summary Results: PsyE for Fire Cadet Job

Broad Characteristics	More Narrowly-Defined Characteristics
<p>Highly Relevant</p> <ol style="list-style-type: none"> 1. Deductive Reasoning 2. Problem-Solving Ability, Judgment & Decision Making 3. Oral Comprehension Skills 4. Interpersonal Skills <ul style="list-style-type: none"> • Cooperativeness 5. Conscientiousness <ul style="list-style-type: none"> • Dependability • Integrity 6. Emotional Stability 7. Motivation <ul style="list-style-type: none"> • Work Motivation • Desire to Learn 8. Assertiveness 9. Objectivity <p>Moderately Relevant none</p>	<p>Highly Relevant for measuring</p> <ol style="list-style-type: none"> 1. Ability to withstand substantial stress and pressure as generated by life endangering circumstances encountered in job situations. 2. Ability and willingness to accept danger as a normal part of job duties, and put the safety of citizens above safety of self. 3. Ability to exercise good judgment in normal and emergency situations. 4. Ability to make decisions and maintain composure under highly stressful, frightening, or otherwise upsetting circumstances. 5. Ability and willingness to take calculated but not unnecessary risks. 6. Freedom from abnormal fears or preoccupation related to job duties, including, but not limited to, the fear of heights or enclosed spaces, or pyromania. 7. Ability and willingness to maintain abstinence from mood-altering (non-prescribed, controlled, or illegal) chemicals while at work. 8. Ability and willingness to maintain freedom from chemical abuse or dependency. 9. Ability to work independently without a high level of supervision. 10. Ability and willingness to exercise honesty and integrity in all interactions with the public, peers, and supervisors. 11. Ability and willingness to follow orders explicitly and accept constructive criticism appropriately. 12. Ability and willingness to work within a para-military command structure (e.g., accepting the authority of, and obeying orders issued by, superior officers, without undue friction or resentment). 13. Ability and willingness to maintain regular attendance and be punctual. <p>Moderately Relevant for measuring</p> <ol style="list-style-type: none"> 14. Ability to make life and death decisions involving self and others. 15. Ability to be aware of hazards and take appropriate precautions. 16. Ability to understand, remember, and execute complex instructions under normal and crisis situations. 17. Ability to interact and communicate appropriately and effectively with the public, supervisors, and co-workers. 18. Ability and willingness to share living and working quarters with other personnel during 24-hours shifts. 19. Ability and willingness to be supportive and comforting to citizens in times of crisis. 20. Ability and willingness to continue working in spite of fatigue and pain (within reason).

Summary Results: BI for Police Dept Jobs

Police Officer

Highly Relevant for measuring

1. Work Habits
 - good punctuality and attendance

Moderately Relevant for measuring

2. Freedom from Chemical Abuse/Dependency
3. Professional Behavior & Bearing
 - shows integrity; is morally and legally above reproach
4. Relations with Co-Workers

Non-Sworn Jobs

Highly Relevant for measuring

1. Integrity
2. Conscientiousness

Moderately Relevant for measuring

3. Professionalism
4. Following Directions and Procedures

Summary Results: BI for Fire Cadet Job

Broad Characteristics	More Narrowly-Defined Characteristics
<p>Highly Relevant</p> <p>Conscientiousness</p> <ul style="list-style-type: none"> • Dependability • Integrity 	<p>Highly Relevant for measuring</p> <ol style="list-style-type: none"> 1. Ability and willingness to maintain abstinence from mood-altering (non-prescribed, controlled, or illegal) chemicals while at work. 2. Ability and willingness to maintain freedom from chemical abuse or dependency. 3. Ability and willingness to exercise honesty and integrity in all interactions with the public, peers, and supervisors. 4. Ability and willingness to maintain regular attendance and be punctual.
<p>Moderately Relevant</p> <p>none</p>	<p>Moderately Relevant for measuring</p> <ol style="list-style-type: none"> 5. Ability to interact and communicate appropriately and effectively with the public, supervisors, and co-workers.

Likely Criticisms

- No estimate of predictive accuracy (i.e., criterion-related validity evidence)
- Does not meet UG requirements because the approach does not exactly fit any of the validation strategies outlined in the UG
- Not good enough to establish the job relatedness of the PsyE and BI as a whole; must validate each component
- Perennial criticisms about expert judgments
 - Too few experts
 - Experts weren't qualified to make the evaluations

If Your Organization Uses PsyE or BI

- Job Analysis
 - Document working conditions or tasks that involve access to confidential information, valuable property, vulnerable persons, etc.
 - Have (and help) job experts identify the full range of KSAO requirements, including personal characteristics likely to be measured in a PsyE or BI
- Screening tools
 - Provide job information to persons who will conduct the PsyE or BI to help ensure they target job-relevant information
 - Document the personal characteristics these screening tools are intended to measure
 - Have testing experts judge the relevance of *your organization's* screening tools for measuring job-critical personal characteristics

Questions & Wrap-up

- Thanks for attending!
- Call us with further questions
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