Implementation of Mechanical Data Combination in an Assessment Center

Eva Bergvall                     Anders Sjöberg
Göteborg – En stad för alla

- 60 different companies and administrations
- 50,000 employees
- 2,150 managers and executives
Göteborgs Stad – One ordinary day

- 70 400 appartments
- 1 700 transports
- 2 900 swim
- 10 300 library loans
- 29 000 preschool children
- 450 visit the theatres
- 1 500 museum visits
- 8 300 rest in a park
- 900 ton garbage
- 10 300 library loans
- 40 000 pupils in schools
Assessment Center in Gothenburg

- Started in 2002 with the goal to work with identification, assessment and development of the leaders at different levels in the city.
- In 2013 305 candidates participated in an assessment center
- A total of 3187 assessments since 2002
- More than 100 assessors have been active in the assessment centers
The need for Change

• The need for a shorter Assessment Center for the employees, the assessor and the candidates
• The need for a more updated Assessment Center
• A need to use in practice what new research said
• The need to be evidence based and get an ISO 10667 certificate
Definition Assessment Center

- An assessment center consists of a standardized evaluation of behavior based on multiple inputs. Multiple trained observers and techniques are used. Judgments about behaviors are made, in major part, from specifically developed assessment simulations. These judgments are pooled in a meeting among the assessors or by a statistical integration process.
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- The results of this meta-analysis demonstrate a sizable predictive validity difference between mechanical and clinical data combination methods in employee selection and admission decision making. For predicting job performance, mechanical approaches substantially outperform clinical combination methods.

- Evidence-based practice can benefit from keeping the results of this meta-analysis in mind when developing and utilizing selection and admission systems.

- Results show that unit- and optimally weighted composites of construct-based AC dimensions add incremental validity over tests of personality and cognitive ability, while overall AC ratings (including those obtained using subjective methods of data combination) do not.
ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). Publication as an International Standard requires approval by at least 75% of the member bodies casting a vote. For ISO 10667, 93% voted in favour (13 out of 14).
Structure of the parts in ISO 10067

• Each part contains 6 sections or ‘clauses’ with four assessment stages (3-6):
  1. Scope
  2. Terms and definitions
  3. Agreement procedure
  4. Pre-assessment procedures
  5. **Assessment delivery**
  6. Post-assessment review
6.5 Assessment delivery – Interpreting and using results

- The service provider shall ensure that any assessors responsible for analyzing data and providing interpretations and/or classifications relating to the assessment are competent to do so.

- They shall also have the ability to act in accordance with the documented procedures associated with the relevant assessment methods.

- If conclusions are being drawn from multiple assessment methods, the service provider shall provide a rationale for results based on the integration of data and the evidence that supports these conclusions.

- The service provider shall provide the rationale for any recommendations on the use of assessment results.
Changes made

• From 7 to 4 dimensions

• Key actions instead of Bars

• A Mechanical Integration Model with an algorithm and index
4 dimensions from 7 based on factor analysis

- Influence others
- Consideration
- Goals and results
- Problem solving
- Cognitive ability test

Managerial Performance
<table>
<thead>
<tr>
<th>Kandidatens namn:</th>
</tr>
</thead>
</table>

### Influence others

<table>
<thead>
<tr>
<th>@</th>
<th>Du är aktiv under under telefonsamtalen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Du möter ifrågasättanden genom att utveckla dina argument (upprepar inte bara samma argument)</td>
</tr>
<tr>
<td></td>
<td>Du tar upp ett par olika perspektiv (tex, bemötande, grundarens intentioner, bemanning, etc)</td>
</tr>
<tr>
<td></td>
<td>Du talar hela tiden så att det är lätt att förstå</td>
</tr>
<tr>
<td></td>
<td>Du talar i fullständiga meningar</td>
</tr>
<tr>
<td></td>
<td>Du använder uttryck som ”jag bedömer/anser/föreslår”</td>
</tr>
<tr>
<td></td>
<td>Du använder konkreta bilder och exempel för att förtydliga dig</td>
</tr>
<tr>
<td></td>
<td>Lindén går med på ditt förslag angående barnfri tur</td>
</tr>
<tr>
<td></td>
<td>Lindén går med på ditt förslag angående bemanning</td>
</tr>
<tr>
<td></td>
<td>Lindén går med på ditt förslag angående kompensation</td>
</tr>
<tr>
<td></td>
<td>Du talar tydligt</td>
</tr>
<tr>
<td></td>
<td>Du hävdar den egna bedömningen, när den ifrågasätts, genom att utveckla argument (tex när det gäller bemanningen eller den barnfria turen)</td>
</tr>
<tr>
<td></td>
<td>Du tar på dig ansvaret för det inträffade</td>
</tr>
</tbody>
</table>

|   | **0** av totalt 13 |

### Consideration

<table>
<thead>
<tr>
<th>@</th>
<th>Du hummar instämmande som tecken på att du lyssnar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Du ställer faktafrågor till Lindén (alla typer av faktafrågor räknas)</td>
</tr>
<tr>
<td></td>
<td>Du ställer frågor kring Lindéns upplevelse</td>
</tr>
<tr>
<td></td>
<td>Du beklagar det inträffade</td>
</tr>
<tr>
<td></td>
<td>Du bekräftar att Lindén är en viktig kund och sponsor för parken</td>
</tr>
<tr>
<td></td>
<td>Du låter Lindén komma till tals</td>
</tr>
<tr>
<td></td>
<td>Du tar initiativ till diskussion om parkens samarbete med Lindén</td>
</tr>
<tr>
<td></td>
<td>Du spinner vidare på Lindéns synpunkter</td>
</tr>
</tbody>
</table>

|   | **0** av totalt 8 |

### Goals and results

<table>
<thead>
<tr>
<th>@</th>
<th>Du motiverar ditt beslut för Lindén</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Du ger besked om hur du kommer att tillmötesgå Lindéns krav på personalbyte (korrekta lösningar är tex att byta ut Bosse, tillsätta extra personal eller att föreslå annan aktivitet, Ej att byta ut Larsson).</td>
</tr>
<tr>
<td></td>
<td>Du ger Lindén ett tydligt svar kring hur ”barnfrågan” kommer att lösas (i enlighet med donatorns intentioner, barnfri ordinarie tur är inte korrekt)</td>
</tr>
<tr>
<td></td>
<td>Du tar själv upp frågan om kompensation</td>
</tr>
<tr>
<td></td>
<td>Du bemöter Lindéns krav på kompensation med en egen lösning</td>
</tr>
<tr>
<td></td>
<td>Du tar till stånd en gemensam lösning som fungerar för både dig och Lindén</td>
</tr>
</tbody>
</table>

|   | **0** av totalt 6 |
Influence others

- 16 item
- Scoring 0-1
- Item response theory (2 parameter) showing discrimination and difficulty for every key action
- N= 128
Results IRT

- Good key action (Person use expressions such as I believe and I suggest)
Results IRT

- Bad key action (Person show clear written material)
Next step for key actions

• Collect more key actions from different exercises

• More Item analysis (IRT)

• Factor analysis (dimensions vs exercises)

• Identify new key actions
Evidence-based Assessment Center approach (EAC)

- Data from approx 1500 assessments were collected and analyzed
- The results showed support for four of the traditional dimensions in AC (i.e., Influencing others, consideration, goals and results, and problem-solving).
- A correlation matrix was constructed based on the analyzed data.
- Meta analysis* results were identified for criterion-oriented validity estimates of the score of for AC dimensions and one score of a general mental ability test (baseIQ).
- Regression analysis was used to construct an algorithm for mechanical data combination.

Mechanical scoring process (weighing)

- Influencing others
- Consideration
- Goals and results
- Problem-solving
- Cognitive Ability

Suitability Score Scale 0-10
From a Clinical approach

Assessment ➔ Scoring ➔ Discussion ➔ Score on 7 Dimensions

To an Algorithmic scoring process

Assessment ➔ Scoring ➔ Suitability Score Scale 0-10
<table>
<thead>
<tr>
<th></th>
<th>In-basket</th>
<th>Customer on telephone</th>
<th>Presentation for manager</th>
<th>Employee with problem</th>
<th>Mean per dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence others</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1,0</td>
</tr>
<tr>
<td>Consideration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goals and results</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1,0</td>
</tr>
<tr>
<td>Problem solving</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>1,0</td>
</tr>
<tr>
<td>Mean per exercise</td>
<td>1,0</td>
<td>1,0</td>
<td>1,0</td>
<td>1,0</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean per dimension</th>
<th>Self evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence others</td>
<td>U</td>
</tr>
<tr>
<td>Consideration</td>
<td>U</td>
</tr>
<tr>
<td>Goals and results</td>
<td>U</td>
</tr>
<tr>
<td>Problem solving</td>
<td>U</td>
</tr>
</tbody>
</table>

General mental Ability Test
Index: -4,1
Practical considerations - positive

- Decreased costs (for each assessment day the assessors save 2 - 3 hours)
- More easy for clients to compare candidates
- Increased reliability
- Increased validity?
- ISO 10667 certified
Practical considerations - negative

• Not fully accepted by assessors, miss the consensus meeting

• Difficulty to understand the statistics
The need for Change

- The need for a shorter Assessment Center for the employees, the assessor and the candidates
- The need for a more updated Assessment Center
- A need to use in practice what new research said
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ISO 10667 Certification

**Positive indications**
- Change to mechanical grading forces assessors to decide and avoiding clustering in average area of performance
- Well formulated evaluation criteria implemented
- Training of assessors in changes

**Main areas for improvement**
- Statistics to determine scale reliability and item analysis should be performed.
- Norms to compute standardized scores for each scale making the scales comparable should be established.
ISO 10667 Certification

**Positive indications**
- Manager change planned ahead and successor identified and trained
- Competence maintained in organization.
- Move of CLU internal in the municipality organization with minor effect on assessment center.

**Main areas for improvement**
- Maintain competence and continual improvement of assessment center
ISO 10667 Certification

Conclusion
- In the closing meeting the general conclusions and key findings were presented, discussed and agreed.
- The audit plan was followed without major changes.
- The management system was found to be in compliance with the standard.
- The Team Leader will recommend the organisation for certification.