

What else can we learn from the CAT data?

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(ACER)

Capability Analysis Tools (CATs)

- VETCAT®
- CURCAT®
- ADMINCAT®
- LEADCAT®

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Psychometrics

- The science of measurement of attributes and abilities including attitudes, aptitudes, skills, capabilities, etc.

Usually concerns with

- Psychological and educational measurements

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Measurement of latent variable

Abilities and attributes are not directly observable
we tap into these constructs using tests/tools/instruments.

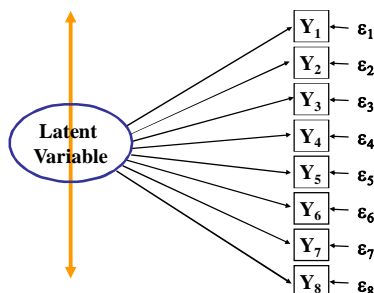
Unobserved variables are 'latent' variables

The 'measures' need to be reliable (consistent) and valid (tapping into what we intend to measure)

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Latent variables

Psychometrics – Science of mental measurement



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What do Psychometricians do?

Theoretical research and operational duties

- Develop ways to improve measurement, valid and reliable measures
- Develop and evaluate models for measurement
- Evaluate assessment instruments
- Evaluate assessment programs
- Work with subject experts in developing instruments
- Scale constructions, data analyses
- Test equating, standard setting
- Reporting and score interpretation
- Etc.

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My work with JMA Analytics



Main tasks:

- Provide advice and guidance on the psychometrics aspects of the CATs
- Evaluation of the quality of the CAT instruments
- Explore and design further institutional reports that are useful for the JMA Analytics clients
- Provide brief reports on analysis carried out
- Further analysis of CAT data requested by JMA Analytics clients

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Psychometric Analysis of ADMINCAT®



Five skill areas

- Communication
- Teamwork
- Business
- Initiative & Enterprise
- Technology

Calibration of instrument

- Based on multidimensional Rasch model
- Most questions have good fit to the 5-dimensional model

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ADMINCAT®



Reliabilities of the five dimensions

	Communication	Team Work	Business	Initiative	Technology
Coefficient Alphas	0.85	0.79	0.83	0.82	0.84

Correlations between dimensions

Dimension	Communication	Teamwork	Business	Initiative and Enterprise	Technology
Communication	1				
Teamwork	0.613	1			
Business	0.629	0.747	1		
Initiative and Enterprise	0.628	0.667	0.699	1	
Technology	0.678	0.455	0.501	0.545	1

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Psychometric Analysis of ADMINCAT®



[ADMINCAT evaluation.docx](#)

A few mis-fitting items, feedback given to John

Label	Question
4_1C	Do you check the meaning of verbal instructions given to you by your managers, team leaders and/or colleagues?
14_2B	Do you regularly purchase goods and services that enable your colleagues to do their jobs?
19_1	Do you actively seek feedback from your clients and colleagues on your work performance?
21_2	Do you actively seek professional development opportunities that can improve your work skills and help you achieve your work goals?
22_1	Can you recognise work performance gaps of your colleagues?
23_4	Are you able to contribute to the design, development and implementation of software for business specific usage?

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Psychometric Analysis of ADMINCAT®



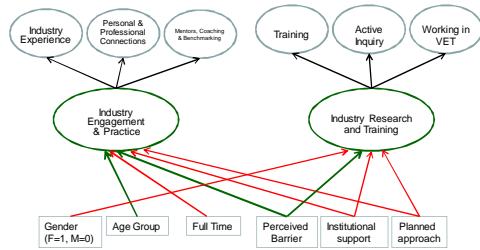
[Variable maps.docx](#)

[Progress Map Example](#)

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Preliminary analysis of CURCAT® data

What factors influence the level of maintaining currency?

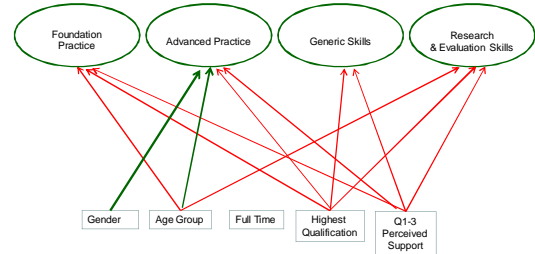


All red and green paths are important for managers to note, in this slide and the next one. Paths in red indicate positive effects, e.g. institutional support improves industry currency. Paths in green indicate negative effects, e.g. perceived barriers hinder industry currency.

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Preliminary analysis of VETCAT® data

What factors influence level of demand for PD?



Q1_3: To what extent is the Institute assisting you to access professional development opportunities that meet YOUR specific professional development needs?

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Perception management?

- Perceived barriers seem to have a negative effect on staff maintaining currency
- Perceived institutional support seems to have a positive effect on the demand for professional development
- Need to work on increasing support and reducing barriers
- If there is a gap between the actual and what is perceived, perhaps perception management is needed to energise staff

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My work with JMA Analytics

Next Activities

- Joint paper with John on CURCAT®
- Review VETCAT® version 2
- Evaluate the forthcoming MANEGECAT®
- Monitor LEADCAT®

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