

Multiple measurement of occupational status

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The virtues of multiple measurement

- Assess reliability
- Improve reliability
- Correct for unreliability

In MTMM

- Assess correlated (systematic) error
- Correct for correlated error

Is it possible to have multiple measures of occupational status?

- Yes, by asking several times in a panel design
- Yes, by asking several informants in a multi-actor or multi-source design
- Yes, by asking the relevant questions at least twice in one survey
 - This can easily be accomplished by asking a detailed and a crude question on occupation at the same time.
 - An adequate question format has been proposed by Tom Smith and Jonathan Kelley and applied in ISSP 1987.

Main results

- Respondents have no problem answering the parallel measures twice, in fact asking a crude question helps them to answer an open ended, detailed question.
- Crude questions have about the same reliability as detailed questions; in some example crude questions have better reliability than detailed questions.
- Crude questions do not suffer more from systematic (correlated) error than detailed questions.
- Multiple measurement models show more plausible status attainment structures than single measurement models, in particular with respect to income attainment.

Design

- Ask a crude question with appropriate question format.
- Ask subsequently to report on the specific occupation with title, duties and responsibilities.
- Do this with multiple occupations, such as respondents current and first occupation, and/or father's, mother's or spouses occupation.
- Recode both sets of information to an adequate status scale [such as ISEI]
- Estimate MTMM model.

Data

- This design has been applied in:
 - ISSP87, five countries: USA, AUS, GER, AUT, SWI (Ganzeboom, 2005)
 - Various files: 1996, 1998, 1999, 2004 in the Netherlands (de Vries & Ganzeboom, 2007)
 - ESS2006 in the Netherlands
 - (In fact ESS has asked a crude and detailed question on father's and mother's occupation in all three rounds).

Crude measure in ISSP87

1. Professional and technical (for example: doctor, teacher, engineer, artist, accountant)
2. Higher administrator (for example: banker, executive in big business, high government official, union official)
3. Clerical (for example: secretary, clerk, office manager, civil servant, bookkeeper)
4. Sales (for example: sales manager, shop owner, shop assistant, insurance agent, buyer)
5. Service (for example: restaurant owner, police officer, waiter, barber, caretaker)
6. Skilled worker (for example: foreman, motor mechanic, printer, tool and die maker, electrician)
7. Semi-skilled worker (for example: bricklayer, bus driver, tannery worker, carpenter, sheet metal worker, baker)
8. Unskilled worker (for example: labourer, porter, unskilled factory worker)
9. Farm (for example: farmer, farm labourer, tractor driver)

ESS showcard

1. Traditional professionals
2. Modern professionals
3. Clerical and intermediate
4. Senior manager and administrator
5. Technical and craft
6. Semi-routine manual and service
7. Routine manual and service
8. Middle and junior managers

What is wrong / right with this?

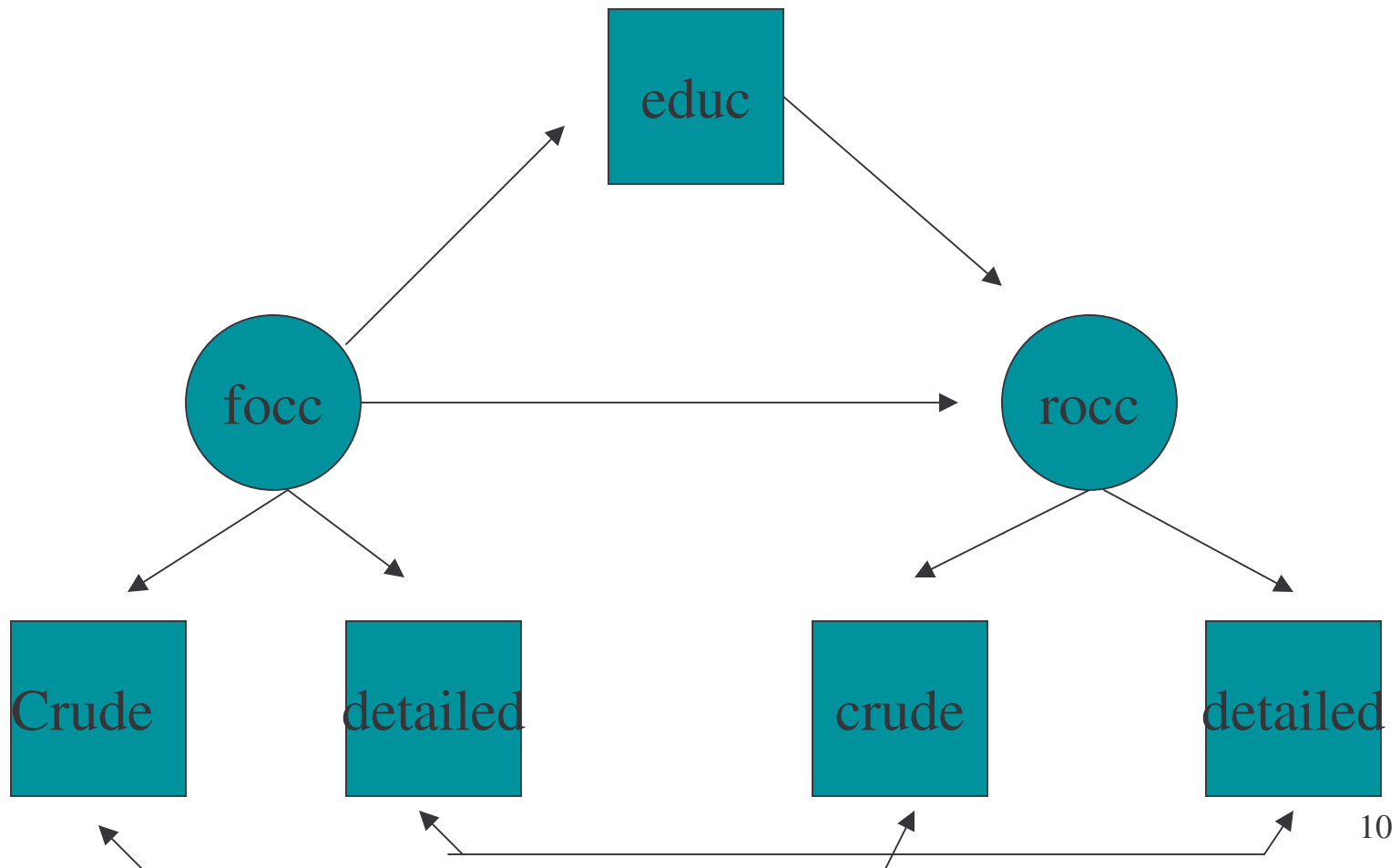
Wrong

- Incomprehensible: modern professional?
- Blurs manual / non-manual divide
- Does not distinguish farmers

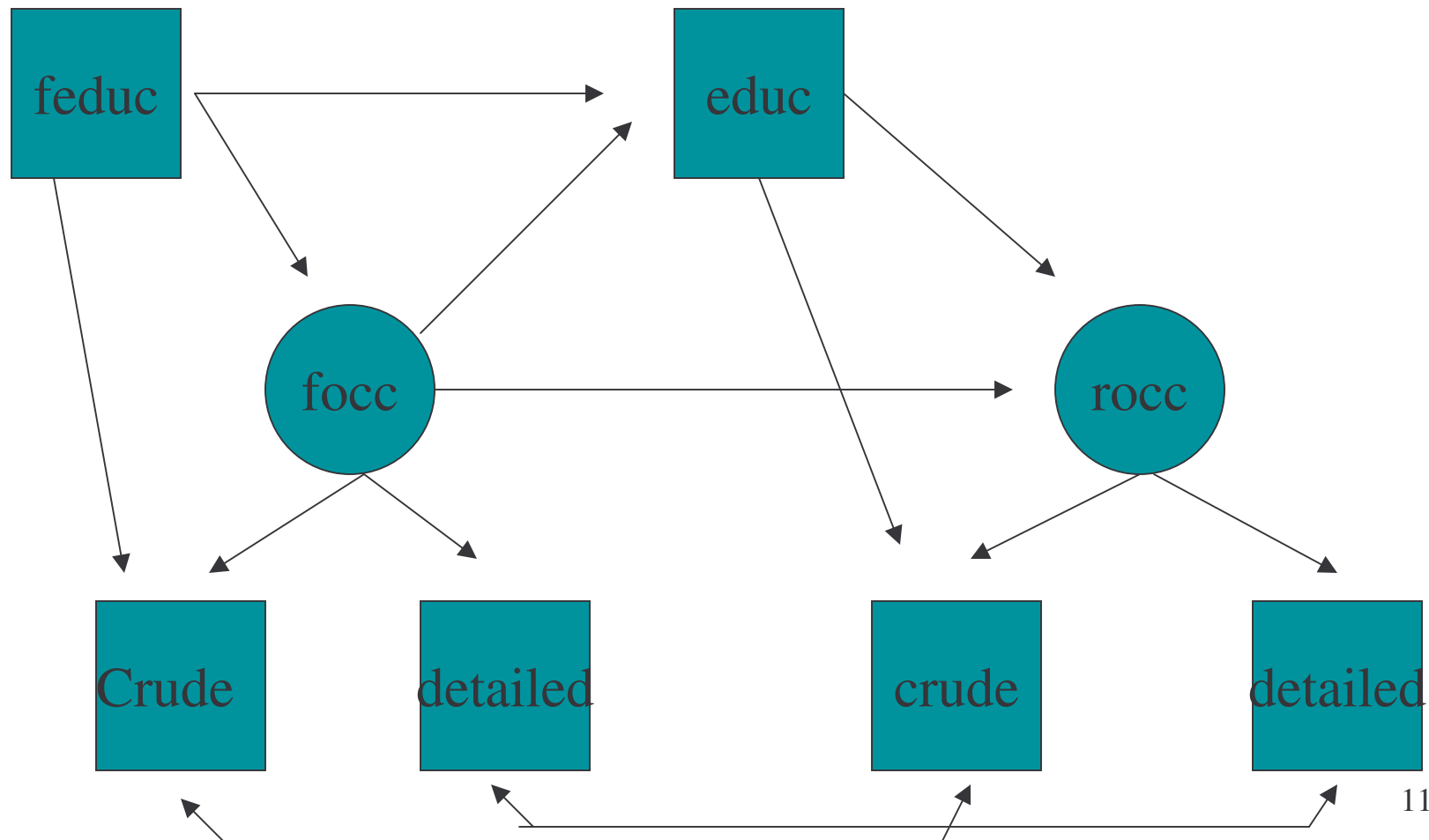
Right:

- Parellel measurement
- Conveys the idea of an occupation to respondent and interviewer

MTMM -- structure



MTMM – education bias



Analysis of ISSP87

- Ganzeboom, Harry B.G. (2005). “On the Cost of Being Crude: A Comparison of Detailed and Coarse Occupational Coding.” Pp. 241-258 in: Jürgen H.P. Hoffmeyer-Zlotnik, Methodological Aspects of Cross-National Research, Mannheim: ZUMA-Nachrichten [Special Issue #11], 2005.
- N=4219, 5 countries.
- Only for father's and respondent's occupation.
- No correction for correlated error.
- Crude and detailed are not very different in quality (measurement loadings around 0.85) or representation of status attainment.
- Combining crude and detailed in one model change the picture of status attainment:
 - Stronger structural effects
 - No direct effect of education on earnings.

Analysis of Dutch data 1996-2004

- Vries, Jannes de; Ganzeboom, Harry B.G.: “Hoe meet ik beroep? Open en gesloten vragen naar beroep toegepast in statusverwervingsonderzoek”. Manuscript.
- N=4314, four surveys.
- Occupations: father, mother, first, current/last.
- Models include correlated error and education bias.

Results Dutch data 1996-2004

- Crude measures are slightly superior to detailed measure (1.0/1.1). Standardized: 0.80 / 0.85.
- Significant correlated error between methods in MTMM model, but it is equal between detailed and crude measures!
- (Almost) significant education bias in crude measures, but substantively neglectable (.03).
- Combining crude and detailed in one model change the picture of status attainment:
 - Stronger structural effects
 - No direct effect of education on earnings

ESS_NL 2006 – design

- Two crude questions formats:
 - ISSP87
 - ESS showcard
- Two detailed questions:
 - Coded by research agency (Jo)
 - Coded by PI (Harry)
- Occupation: father, first, current
- N = 1416 (preliminary file)

ESS_NL 2006 – MTMM results

FATHER

- Jo: 0.90
- Harry: 0.89
- ISSP-crude 0.85
- ESS-crude 0.64

RESPONDENT

- Jo: 0.90
- Harry 0.89
- ISSP: 0.86
- ESS: ---

TE ISSP-ISSP: .031

Main results – one more time

- Respondents have no problem answering the parallel measures twice, in fact asking a crude question helps them to answer an open ended, detailed question.
- Crude questions have about the same reliability as detailed question; in some example crude questions have better reliability than detailed questions.
- Crude questions do not suffer more from systematic (correlated) error than detailed questions.
- Multiple measurement models show more plausible status attainment structures than single measurement models, in particular with respect to income attainment.
- *The ESS crude question is a particularly bad measure; the ISSP crude question is satisfactory.*