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Assessing the Adult Wellbeing Topical Module in the Survey of Income and Program Participation (SIPP)

*by Kurt Baumann (U.S. Census Bureau),
Adam Carle (University of North Florida),
Kathleen Short (U.S. Census Bureau)*

Discussant: Joachim R. Frick (SOEP/DIW Berlin)

General setting of the paper

Concepts for measuring individual well-being

- Income (poverty) → uni-dimensional measure
- Well-being (deprivation, lack of resources, enforced lack of socially-perceived necessities) → considering multiple dimensions of life (e.g. housing/shelter, food, health, consumer durables)
- Perceived satisfaction with “life in general” and with various “life domains” (not dealt with in this paper)
- Large body of literature shows little overlap of material well-being and income-based poverty measures !

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Literature review

Neurath (1920; 1937): *Lebenslagen*-("conditions of life") approach

Sen (1985): capability approach

Townsend (1979): aggregated deprivation index based on non-prevalence of a set of indicators (poverty in UK)

Mack & Landsey (1985): definition of a minimum living standard based on socially defined necessities

Callan, Nolan, Whelan (1993): poverty = exclusion arising from lack of resources in 3 different clusters ("basic lifestyle", "housing & durables", "other) rather than aggregating one index across 20 underlying items (by means of factor analysis)

Nolan & Whelan (1996): significant challenges for multi-dimensional approaches:
a) select items, b) account for taste, c) aggregation of items to a summary index, d) select threshold, e) identify deprivation patterns

McKay & Collard (2003): measure deprivation with only about 10 questions; factor analysis identified 4 factors: "food", "clothing", "durables", "social activities"

Atkinson, Cantillon, Marlier, Nolan (2002, 2005): Comparative perspective (EU)

Whelan & Maitre (2006): moving from ECHP to EU-SILC using a reduced set of items to measure deprivation yields pretty stable results (Irish study) !!!

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The case of SIPP

SIPP 1996 (interviews took place every 4 months until March 2000):

- wave 1 (April 1996): 36,780 households
- wave 8 (Aug-Nov 1998): extensive module on “adult well-being”

Dimensions covered by more than 60 single items

- Ownership of consumer durables (washer, dryer, fridge, stove, dishwasher, microwave, AC, Color-TV, VCR, PC, phone)
- Housing conditions (state of repair of home, # rooms, comfort, intention to move)
- Crime and safety (feeling safe at home, fear of leaving home, etc)
- Neighborhood and environmental quality (street noise, litter, etc.)
- Community services (police and fire protection, health care services, public transportation, schools)
- Difficulty of meeting basic needs (being behind with rent or utility bills, not visiting doctor/dentist/hospital although in need of medical care)
- Ability to get help when needed (help available from family, friends, etc)
- Food security (could not afford balanced meals, quantity and quality of food, etc)

Shortcomings:

- Data does not differentiate for reason of an eventual limitation (preference vs constraint)
- No information on whether a given item was perceived a *necessity*
- No data on social inclusion

Empirical investigation

Methodology: factor analysis (using Mplus)

- a) Exploring the dimensional structure and fit of several models (2 to 6 factors) based on a random sample of 5,000 individuals
 - b) Cross-validating the fit of a congeneric 5-factor model with a single higher order factor based on the full sample (is there a single underlying construct such as „well-being“ ?)
- Paper gives very clear description of methodology (e.g. allowing an item to load only on one or one various factors), the various tests and fit indices (e.g. RMSEA, root mean standardized error of estimate) applied (p. 9-11)

Results (1)

1. Step: exploratory model (based on random subsample) determining the minimum number of factors (see table 2)

- Conditions: capturing the item covariance while maintaining adequate interpretation
- 5 factors called „Consumer durables“ (14), „Resources available to meet ends“ (12), „Housing conditions“ (17), „Neighborhood problems and crime“ (16), „Community services“ (4)

2. Step: checking factor loadings (≥ 0.2)

- In general, „factor patterns reflect straightforward, broadly recognized aspects of people`s living situations“ (p.12). → no surprise !
- various items show multiple loadings, but all are meaningful:
e.g. AC loads on both, „consumer durables“ and „housing conditions“

Results (2)

3. Step: confirmatory model (based on full sample) identifying the most relevant items per factor (see table 3)
 - Fit statistics support a simple model with each factor loading on one and only one of the five latent factors
 - The applied methodology (CFA-OCM = confirmatory factor analysis for ordered-categorical measures) assumes that underlying the dichotomous responses, a continuous latent response variate exists. CFA-OCM yields a threshold for each item defining the divide between a positive and negative answer: large values indicate items that are „hard“ to endorse, e.g., a telephone in the factor „consumer durables“)
 - Lowest loading factors are found for those limitations (items) which describe most common problems.

Results (3)

4. Step: Given that all 5 factors reflect resource constraints, is there a common underlying dimension such as „wellbeing“ ? (**yes**; table 4)

Table 4: Variance of Latent Variables Explained by Second Order Factor

Latent Variable	R-Squared	
F3: Housing Conditions	0.637	(highest)
F4: Neighborhood Problems and Crime	0.509	(2 nd)
F2: Resources Available to Meet Needs	0.438	(3 rd)
F5: Community Services	0.331	(4 th)
F1: Consumer Durables	0.267	(lowest)

▪ <<Factors „Housing“ and „Neighborhood“ are best predicted from an underlying concept of „wellbeing“ >> → i.e., indicators of longer-standing nature are the most important resource constraints (p.15)

→ indication for „social exclusion“ being a longer lasting process rather than resulting from a snapshot analysis

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Results (4)

- The authors are disappointed about the finding, that sometimes objective conditions did not provide much variation in terms of thresholds while „opinion“ items (such as „feeling very unsafe in own home“ or „being very dissatisfied with health services“) seemed to work very well (p. 15-16)
- Indication for the individual perception of a given condition being more important for wellbeing than the objective condition itself !
- „Satisfaction“ measure as a reliable „proxy for the utility derived from a given condition“ ?!

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Authors' conclusions (p. 16-18)

- The concept of „wellbeing“ is not measured by a single dimension but rather a collection of dimensions taken together (here: 5 factors).
- Certain items in the SIPP module are more important than others (indicated by high factor loadings), or represent more extreme levels of duress (as indicated by high threshold values)
- It is important to include (almost) all items in the measure of wellbeing, i.e., „picking arbitrarily only one of the factors may lead to erroneous conclusions“ (p. 16)
 - Only two items could be identified as less relevant and might be dropped from the study
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Remarks, suggestions and questions to authors

- ✓ how did you deal with INR on any of the many items ?
- ✓ you are using the 8th wave of the 1996 SIPP panel:
what happened over the first 7 waves *wrt* to attrition ?
→ you might perform some simple logit analysis on who survived over the whole period; based on wave 1 population ?
- ✓ can you use the SIPP household context, i.e., how consistent are the individual answers across household members (especially in case of the “opinion” items) ?!
- ✓ consider asking for “life satisfaction” and various “domain satisfaction” (income, health, housing, etc) as just other proxies of individual well-being
[btw: “income satisfaction” and “income” also correlate only at .4]

A Possible Extension

Make more effective use of longitudinal character of SIPP

- ✓ Replicate the “well-being” topical module
- ✓ Check for longitudinal consistency of your factor analysis results

Timing and dimensionality of well-being measures

	Uni-dimensional (income)	Multi-dimensional
Single period	Poverty	<u>Deprivation</u>
Multi-period	Poverty duration	<u>Social exclusion</u>
Life course	Poverty profile	Social inclusion

Adapted from: Krause & Ritz 2006: 153

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Income as //the// uni-dimensional measure of material well-being is often imperfect

→ but one can improve this 😊

✓ AIM-AP

(Accurate Income Measurement for the Assessment of Public policies)

- ✓ Consider non-monetary income components (non-cash transfers, imputed rent, ...)
- ✓ Non-take up of social benefits
- ✓ Activities in the shadow economy/ tax evasion

✓ Item-Non-Response (and measurement error)

- ✓ e.g. imputation

Additional literature

(also considering non-material well-being)

Atkinson A.B., Cantillon B., Marlier E., Nolan B. (2005), Taking forward the EU Social Inclusion Process, Final report, August 2005, http://www.ceps.lu/eu2005_lu/inclusion.

Krause, P. & Ritz, D. (2006): EU-Indikatoren zur sozialen Inklusion in Deutschland. DIW-Vierteljahrshefte zur Wirtschaftsforschung, 75 (1): 152-173

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