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Testing two measures of subjective well-being: Multi-group analysis among a sample of children from two socio-economic status groups in the Western Cape, South Africa

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Introduction

- Children of South Africa (SA) have a long history of exposure to political violence, oppression, abuse, and suffering
- Advent of democracy in 1994 in SA:
 - > government enacted a series of legal commitments to redress childhood adversity
 - > to improve children's well-being and overall quality of life
- South Africa has made good progress in the last 20 years in developing strategies to measure and monitor the state and well-being of children

Objective Indicators Comparison across 3 countries in Africa

| | <i>South Africa</i> | <i>Algeria</i> | <i>Ethiopia</i> |
|------------------------|---------------------|----------------|-----------------|
| GDP | 350.63 | 210.18 | 47.53 |
| HDI | 0.66 | 0.72 | 0.39 |
| Gini Index | 65.0 | 35.3 | 33.6 |
| U-5 Mortality | 44 | 25 | 64 |
| Infant Mortality | 33 | 22 | 44 |
| % Underweight Children | 8.7 | 3.7 | 29.2 |
| % Stunted Children | 23.9 | 15.5 | 44.2 |
| Hospitals per 100 000 | 0.67 | Not available | 0.22 |
| % Living with HIV/AIDS | 19.05 | 0.10 | 1.20 |

- An important consideration of children's subjective well-being in South Africa, is noting the diversity of the childhood experience,
 - > rooted in South Africa's socio-political history which has resulted in high levels of social inequality and disparate socio-economic status (SES) groups
- Gini Index = 65
- SES has been identified as a significant indicator of children's well-being, and is associated with:
 - > children's health, cognitive and educational attainment, socio-emotional development, and access to resources (Bradley & Corwyn, 2002)

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- It has become essential to engage with measures and instruments that can be used to collect data on children's subjective perceptions of well-being
 - A critical step in this process is to ascertain the state of existing measures and to determine the extent to which these measures can be used cross-culturally
 - Multi-item measures of subjective well-being are:
 - more stable than single items (Casas et al., 2013), reduces the risk of measurement error, and increases the reliability of the measure
 - Measures of *global* (SLSS) and *domain-specific* (PWI) life satisfaction



Aim and objectives of the study

- The primary aim of the study was to determine whether the Personal Well-Being Index-School Children and the Student Life Satisfaction Scale can be used to measure subjective well-being among children in the local context of the Western Cape. More specifically, the study aimed to ascertain whether they can be used across low and medium socio-economic status groups. The following objectives were developed to guide the study:
 - a. To test the fit structure of the overall model of the Personal Well-Being Index-School Children and the Student Life Satisfaction Scale
 - b. To test the metric and scalar factor invariance of the multi-group model across socio-economic status groups
 - c. To test the convergent validity of the Personal Well-Being Index-School Children and the Student Life Satisfaction Scale

Method

○ Design

- › The study forms part of the Children's World's ISCWeb (First Wave: Deep Pilot) and follows a cross-sectional survey design.

Method

○ Sampling

- › Sampling frame:
 - 12 year old children attending primary schools within four Education Management Districts Councils
- › Two stage stratified random sampling protocol
 - Stage 1: schools stratified according to *location*
 - Stage 2: Schools were then stratified by SES level (that is low and medium)
- › Total sample 1004 twelve-year old children (after data cleaning):
 - Girls: 53.9%
 - Boys: 46.1%
- › SES
 - 58.6 % from low SES
 - 41.4% from medium SES

Method

- Instrumentation
 - > ISCWeb was adapted to the South African context (cognitive testing-phrasing, refining, modification of items; piloting)
 - > *Student Life Satisfaction Scale* (Huebner, 1991)
 - > *Personal Well-Being Index-School Children* (Cummins & Lau, 2005)
 - > *Overall Life Satisfaction* (Cummins & Lau, 2005)
- Procedure and Ethics
 - > Meeting with principals and life skills teachers
 - > Information session to recruit participants, ethics principles, signed consent (child and parent)
 - > Average time of 30 minutes to complete
- Data Analysis
 - > Confirmatory Factor Analysis (CFA) to test the validity of the measures (PWI, SLSS & OLS)
 - > To compare the results between the low and medium SES groups factor invariance
 - *Configural invariance*
 - *Metric factor invariance*
 - *Scalar factor invariance*

Student Life Satisfaction Scale

1. My life is going well
2. My life is just right
3. Like to change things in my life
4. Wish I had a different Life
5. I have a good life
6. I have what I want in life
7. My life is better than most kids

Personal Well-Being Index – School Children

1. Satisfied (happy) with things I have
2. Satisfied with relationships in general
3. Satisfied with school experience
4. Satisfied with health
5. Satisfied with safety
6. Satisfied with things I'm good at
7. Satisfied with things away from home
8. Satisfied with future security

Results: *Descriptive Statistics*

**Table 1: Mean composite scores for SLSS, PWI-SC and the OLS
on 100-point scale**

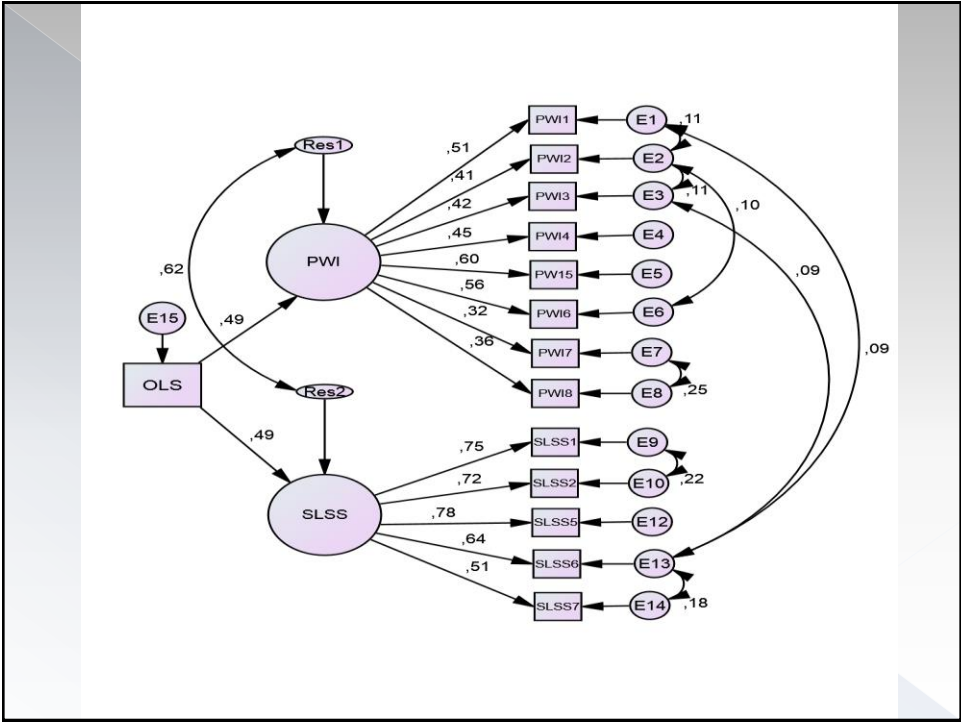
| | N | Mean | Std. Deviation |
|------------------|------|-------|----------------|
| SLSS composite | 1004 | 65.60 | 18.59 |
| PWI-SC composite | 1004 | 81.90 | 13.60 |
| OLS | 1004 | 85.10 | 24.29 |

Table 2: Fit indexes for the overall pooled data (Models 1 – 7) and multi-group data (Models 8 – 13)

| Model | | χ^2 | df | p-value | CFI | RMSEA | SRMR |
|-------|--|----------|-----|---------|-------|--------------------------|-------|
| 1 | SLSS Initial Model | 299.63 | 14 | 0.00 | 0.862 | 0.144 (0.129 – 0.157) | 0.086 |
| 2 | PWI-SC Initial Model | 124.09 | 20 | 0.00 | 0.890 | 0.072 (0.060 – 0.084) | 0.048 |
| 3 | SLSS Modified Model with 3 error co-variances | 18.42 | 11 | 0.07 | 0.996 | 0.026 (0.000 – 0.046) | 0.020 |
| 4 | SLSS Modified Model with 2 error co-variances | 4.12 | 3 | 0.24 | 0.999 | 0.060 (0.000 – 0.058) | 0.008 |
| 5 | (excl. item 3 & 4) PWI-SC Modified Model with 2 error co-variances | 53.01 | 18 | 0.00 | 0.963 | 0.044 (0.031 – 0.058) | 0.029 |
| 6 | PWI-SC/SLSS (SEM) Initial model (excl. item 3 & 4 on SLSS) | 258.07 | 64 | 0.00 | 0.936 | 0.055 | 0.039 |
| 7 | PWI-SC/SLSS (SEM) Modified model (excl. item 3 & 4 on SLSS, with 8 error co-variances) | 94.98 | 56 | 0.00 | 0.987 | 0.026 (0.017 – 0.035) | 0.024 |
| 8 | PWI-SC/SLSS (SEM) (Multi-group) | 175.40 | 112 | 0.00 | 0.980 | 0.024 (0.017 – 0.030) | 0.027 |
| 9 | SES (Unconstrained) PWI-SC/SLSS (SEM) (Multi-group) | 185.50 | 123 | 0.00 | 0.980 | 0.024 (0.016 – 0.029) | 0.032 |
| 10 | SES (Constrained Factor Loadings) PWI-SC/SLSS (SEM) (Multi-group) | 229.79 | 134 | 0.00 | 0.970 | 0.027 (0.021 – 0.032) | 0.032 |
| 11 | SES (Constrained Factor Loadings & Intercepts) PWI-SC/SLSS – OLS SEM (Pooled sample) | 119.98 | 67 | 0.00 | 0.984 | 0.028 (0.020 – 0.036) | 0.025 |
| 12 | PWI-SC/SLSS – OLS (SEM) Multi-group SES (Unconstrained) | 213.92 | 134 | 0.00 | 0.977 | 0.024 (0.018 – 0.030) | 0.028 |
| 13 | PWI-SC/SLSS – OLS (SEM) (Constrained Factor Loadings & Intercepts) | 267.04 | 156 | 0.00 | 0.968 | 0.027 (0.021 – 0.032) | 0.032 |

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Discussion

- Despite countless threats children face in SA, the composite scores for the three scales show a general trend toward high levels of SWB
- The SLSS and PWI-SC show appropriate fit structure in the SA context (with item 3 and 4 removed, similar to Casas & Rees, 2014)
- The overall multi-group model has good fit structure with metric and scalar factor invariance being tenable – this indicates that the SLSS and PWI-SC across the two SES groups can be compared by correlations, regressions and means.

Conclusion

- The SLSS and PWI-SC are structurally valid measures that can be used in the Western Cape Province of South Africa across low and medium SES groups – and are comparable by correlations, regressions and means
- Further research: translation of scales into other language groups
- Country wide survey