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Measures of children's subjective well-being: Analysis of the potential for cross-cultural comparisons

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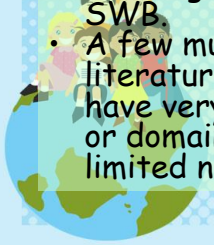
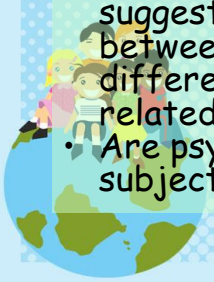
Children's subjective well-being

- A substantial amount of international comparative analysis has now been published in relation to the subjective well-being of adults' populations. However, in comparison, only few publications include data on children's subjective well-being.
- Most international research including more than 10 countries use only the single-item measure of children's life satisfaction (Cantril's Ladder) from the HBSC database to assess children's SWB .
- Using a single-item scale seems a weak solution to the challenge of assessing such complex construct as SWB.
- A few multi-item scales are available in the scientific literature to assess children's SWB. However, they have very different characteristics (i.e.: context-free or domain based) and have only been tested in a limited number of cultures and languages.



Research challenges

- A lot of complexities and challenges are involved in translating and representing the same psychometric measures of well-being in different languages. English words such as 'happiness' and 'satisfaction' cannot necessarily be directly translated, and the same goes for some of the concepts covered in the most frequently used scales – for example 'community'.
- In several scientific articles, authors have suggested that differences in mean scores between countries may be partly attributable to different response styles, which in turn may be related to differences in culture and socialisation.
- Are psychometric scales assessing children's subjective well-being cross-country comparable?

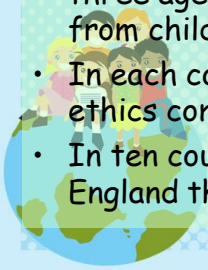


Aims

- The aim of this paper is to contribute to the ongoing debate about the potential to compare subjective well-being across nations, cultures and languages.
- We make use of a newly available data set and use multi-group confirmatory factor analysis to test the extent to which several different multi-item psychometric scales aimed at measuring children's subjective well-being may be suitable for international comparative work.
- Because some research results suggest that subjective well-being may differ according to gender in some cultural contexts, we will include gender in the final multi-group models.

Data

- The data set used in this article is from the pilot wave of the International Survey of Children's Well-Being (ISCWEB; http://www.isciweb.org).
- Following initial phases of small scale qualitative testing, the pilot wave of the survey was conducted in 12 countries in the second half of 2012 with children in three age groups (8, 10 and 12) with three different versions of the questionnaire. Not all countries were able to cover all three age groups. This paper uses mainly the data gathered from children aged around 12 years old (11 countries).
- In each country, approval was obtained from an appropriate ethics committee prior to the survey being conducted.
- In ten countries paper questionnaires were used, while in England the survey was administered via computer.

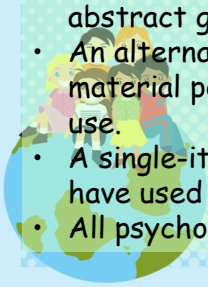


Sample by country and gender

Country	*Females*	*Males*	*Total*
Algeria	211	215	426
Brazil	467	535	1002
Chile	477	349	826
England	456	646	1102
Israel	495	488	983
Romania	669	682	1351
South Africa	457	536	993
South Korea	1074	1505	2579
Spain	2798	2841	5639
Uganda	523	510	1033
USA	376	394	770
Total	**8003**	**8701**	**16704**

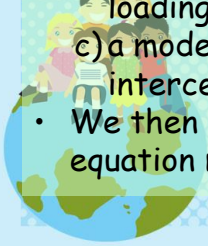
Measures

- The Student Life Satisfaction Scale (SLSS) (Huebner, 1991), which consists of seven items designed to refer to overall (context-free) life satisfaction.
- The Brief Multidimensional Student Life Satisfaction Scale (BMSLSS), which consists of five items about satisfaction with key domains in children's lives – family, friends, school, self and living environment (Seligson et al, 2003).
- The Personal Well-Being Index – School Children (PWI-SC) (Cummins & Lau, 2005). Consists of seven items on rather abstract general life domains.
- An alternative abbreviated version of the PWI-SC, covering material possessions, health, relationships, school and time use.
- A single-item measure of overall life satisfaction (OLS). We have used this variable as a dependent variable in the analysis.
- All psychometric scales use a 0 to 10-point scale.

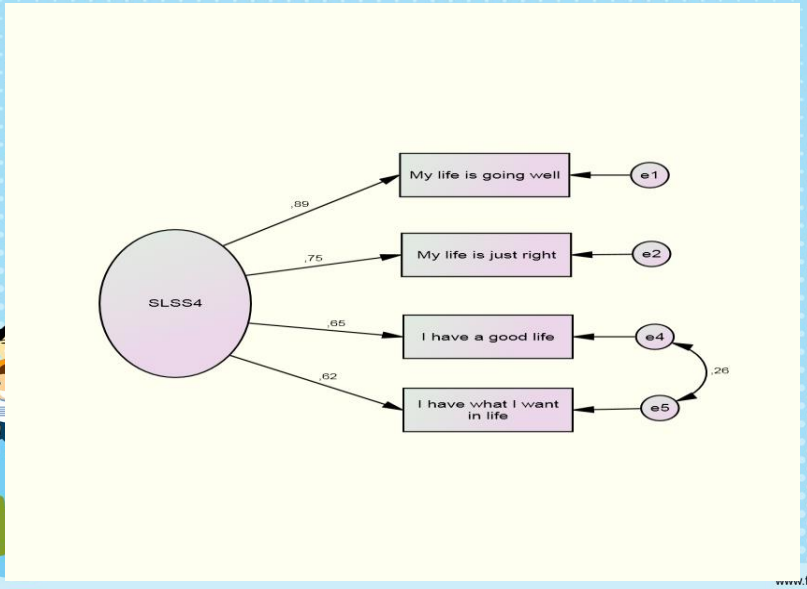


Analytical procedure

- First, CFA of each measure was conducted using the pooled sample to test model fit and identify any problematic items.
- Then, multi-group CFA was conducted to test measurement invariance across countries. This involved three steps (see Byrne, 2010) testing sequentially
  a) an unconstrained multi-group model (configural invariance),
  b) a model with constrained unstandardized factor loadings (metric invariance), and
  c) a model with constrained factor loadings and intercepts (scalar invariance).
- We then proceeded to test each measure in a structural equation model including OLS and gender.



CFA of the SLSS4 with the pooled sample of 11 countries. Unconstrained.

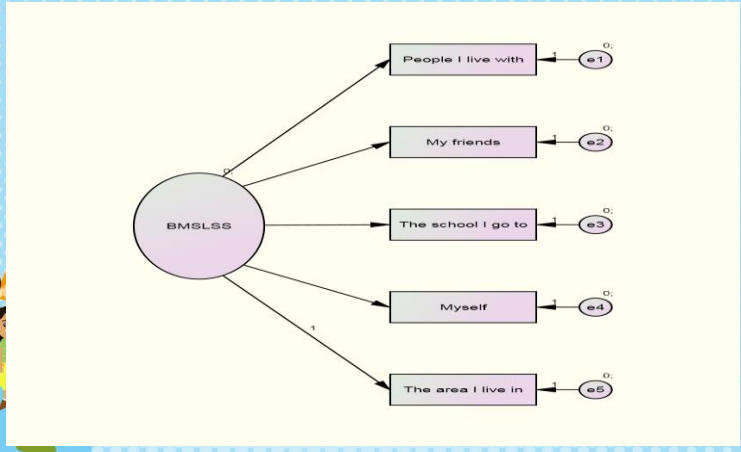


Multi-group CFA models: SLSS4

	Model	χ^2	df	p-value	CFI	RMSEA (confidence interval)	SRMR
1	11 countries, unconstrained	166.99	11	.000	.994	.029 (.025-.033)	.003
2	11 countries, constrained factor loadings	1221.14	41	.000	.958	.042 (.040-.044)	.020
3	9 countries, unconstrained	158.71	9	.000	.994	.034 (.029-.039)	.025
4	9 countries, constrained factor loadings	359.74	33	.000	.987	.026 (.024-.029)	.026
5	9 countries, constrained factor loadings and intercepts	1575.34	57	.000	.940	.043 (.041-.045)	.030

A rule to accept a model with additional constrains is that fit statistics do not change more than .01 (Chen, 2007; Cheung & Rensvold, 2001)

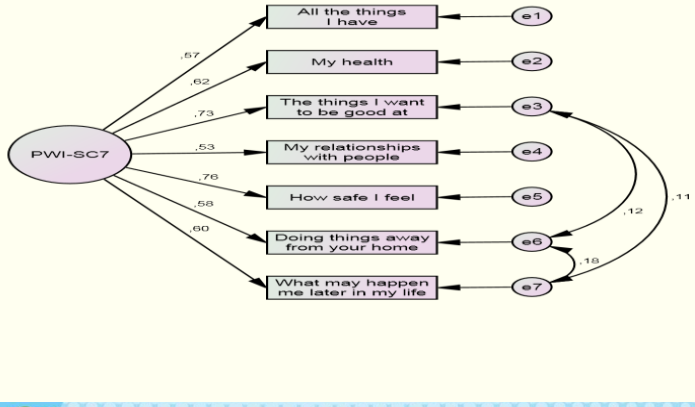
CFA of the BMSLSS with the pooled sample of 11 countries. Unconstrained.



Multi-group CFA models: BMSLSS (modified version)

	Model	χ^2	df	p-value	CFI	RMSEA (confidence interval)	SRMR
1	11 countries, unconstrained	277.99	55	.000	.979	.016 (.014-.017)	.016
2	11 countries, constrained factor loadings	519.54	95	.000	.961	.016 (.015-.018)	.058
3	7 countries, unconstrained	136.88	35	.000	.988	.015 (.013-.018)	.015
4	7 countries, constrained factor loadings	236.96	59	.000	.979	.015 (.013-.018)	.035
5	7 countries, constrained factor loadings and intercepts	909.98	83	.000	.905	.028 (.027-.030)	.043

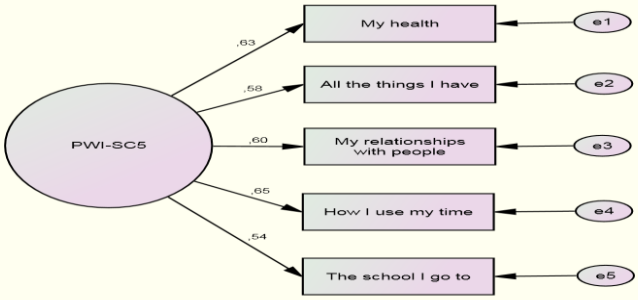
CFA of the PWI-SC with the pooled sample of 10 countries. Unconstrained.



Multi-group CFA models: PWI-SC

	Model	χ^2	df	p-value	CFI	RMSEA (confidence interval)	SRMR
1	10 countries, unconstrained	445.35	110	.000	.985	.017 (.015-.018)	.019
2	10 countries, constrained factor loadings	859.48	164	.000	.970	.020 (.018-.021)	.056
3	7 countries, unconstrained	331.04	77	.000	.986	.020 (.018-.022)	.020
4	7 countries, constrained factor loadings	529.16	113	.000	.976	.021 (.020-.023)	.053
5	7 countries, constrained factor loadings and intercepts	1409.66	149	.000	.928	.032 (.031-.034)	.052

CFA of the PWI-SC5 (alternative version) with the pooled sample of 11 countries. Unconstrained.



Multi-group CFA models: Alternative PWI-SC5

	Model	χ^2	df	p-value	CFI	RMSEA (confidence interval)	SRMR
1	11 countries, unconstrained	184.14	55	.000	.989	.012 (.010-.014)	.023
2	11 countries, constrained factor loadings	494.67	95	.000	.967	.016 (.015-.017)	.045
3	8 countries, unconstrained	84.76	40	.000	.994	.010 (.007-.012)	.023
4	8 countries, constrained factor loadings	183.49	68	.000	.984	.012 (.10-.014)	.039
5	8 countries, constrained factor loadings and intercepts	1848.86	96	.000	.750	.039 (.037-.040)	.038
6	England and USA, unconstrained	30.52	10	.000	.989	.033 (.020-.047)	.015
7	England and USA, constrained factor loadings	42.61	14	.000	.985	.033 (.022-.045)	.020
8	England and USA, constrained factor loadings and intercepts	57.94	18	.000	.979	.034 (.025-.045)	.019

Scales comparability among countries, according to multi-group SE Models

- We have identified SE Models of the 4 scales here analysed displaying good fit statistics with the pooled samples (**configural invariance**).
- Multigroup models with constrained loadings suggests that correlations and regressions are comparable among most countries (excepting the ones indicated in the following slides in each case) (**metric invariance**).
- Multigroup models with constrained loadings and intercepts suggest that means are not comparable among most countries, excepting between England and the USA with the PWI-SC5 (**scalar invariance**). These results suggest different answering styles among children from the diverse linguistic and cultural contexts, although unequal sample sizes may also affect comparability.

Comparability of the psychometric scales using the 12-year-olds samples

		SLSS-4	BMSLSS-5	PWI-SC7	PWI-SC5
Items included		My life is going well I have a good life My life is just right (only 12yo) I have what I want in life Wish a different life (only 10)	Sat with people I live with Sat with my friends Sat with my school experience Sat with myself Sat the area I live in, in general	Sat the things you have Satisfaction with health Sat things want be good at Sat relationship people Sat safe you feel Sat things do away home Sat may happen later life	Sat things you have Sat your health Sat relationship Sat school you go to Sat use your time
12 year olds database	yes	Algeria Brazil Chile Israel Romania South Africa South Korea Spain USA	Algeria Brazil Chile Romania South Korea Spain USA	Algeria Brazil Israel Romania South Africa South Korea USA	Algeria Brazil Chile Israel Romania South Africa Spain Uganda
	no	England Uganda	England Israel South Africa Uganda	Chile England Uganda	England South Korea USA

Comparability of the psychometric scales using the 10-year-olds samples

		SLSS-4	BMSLSS-5	PWI-SC7	PWI-SC5
Items included		My life is going well I have a good life My life is just right (only 12yo) I have what I want in life Wish a different life (only 10)	Sat with people I live with Sat with my friends Sat with my school experience Sat with myself Sat the area I live in, in general	Sat the things you have Satisfaction with health Sat things want be good at Sat relationship people Sat safe you feel Sat things do away home Sat may happen later life	Sat things you have Sat your health Sat relationship Sat school you go to Sat use your time
10 year olds database	yes	Algeria Brazil Canada Chile Israel Nepal Romania South Korea USA	Algeria Brazil Canada Chile Rwanda South Korea USA	Algeria Canada Chile Israel Nepal Romania South Korea USA	
	no	Rwanda Uganda	Israel Nepal Romania Uganda	Brazil Rwanda Uganda	

Gender differences

Gender shows significant standardized loadings on

- SLSS4 in Brazil, Israel and Romania (girls higher only in Israel).
- BMSLSS5 in Spain and USA.
- PWI-SC in Israel, South Korea and USA.
- PWI-SC5 in Brazil, Chile, Israel, Romania and Spain.

Gender correlation with OLS is significant:

- With the SLSS4 in Brazil, Chile, South Korea and USA.
- With the BMSLSS5 in all countries except Algeria and Romania
- With the PWI-SC in Algeria, Israel, Romania, S. Africa.
- With the PWI.SC5 in Brazil and Chile.

Discussion (I)

- For Huebner's SLSS we did not find a good fit for the full seven-item measure using CFA on the pooled sample. This seemed to relate primarily to two issues – the two items that were negatively framed and therefore required reverse scoring, and the one item that asked children to compare themselves with other children. Excluding these three items, we found that a CFA with the remaining four positively-framed non-comparative items had good fit with one error covariance. These results raise questions about the suitability of the SLSS in a cross-cultural context and further research on this issue would be helpful.
- The other three measures tested focused on domain satisfactions and the CFA revealed good fit and few problems for these measures.

Discussion (II)

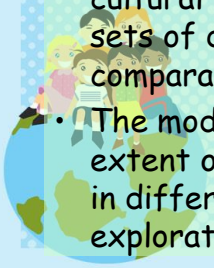
- The analysis did identify some issues, however, with one item of Huebner's BMSLSS relating to satisfaction with oneself. This item tended to have much higher factor loadings than the other items in the scale in most countries and there is a question regarding whether the concept of satisfaction with self is sufficiently distinct from satisfaction with life as a whole from children's perspective.
- This type of finding can contribute to the development of the Personal Well-Being Index.
- In general, the models here tested display cross-national variations in the contribution of different items to the respective latent variable.
- Our analysis suggests that each of the measures is also suitable for cross-national comparative analysis of correlations and regressions for many, but not all, of the countries included in the sample.

Limitations

- The data has been taken from a pilot study which, although large-scale, did not have a uniform sampling strategy in all countries. Some countries aimed for representative samples of children through stratified random sampling, whereas other countries adopted purposive sampling techniques.
- In several countries, the survey was only undertaken in a specific state or region.
- The survey was school-based in all countries. That naturally excludes those children not attending a mainstream school.
- Given these considerations, while the analysis can highlight cross-national similarities or differences, the findings for specific countries should not to be taken to be strictly representative of the child population in those countries.

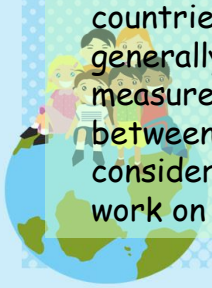
Future steps

- Our analysis indicates that, for each of the four measures tested, there are differences in the extent to which individual items make a contribution to the latent variable in different countries. This suggests that different aspects of life may have a differential importance for children's subjective well-being in different national and cultural contexts.
- That point highlights the need for further cross-cultural research to identify the most appropriate sets of domains for inclusion in measures for comparative research.
- The models also reveal differences in terms of the extent of gender variations in patterns of well-being in different countries which also warrants further exploration.



Final considerations

- Despite these limitations the findings in this paper extend the limited evidence base on cross-national, cross-cultural and cross-language comparisons of children's subjective well-being and highlight important areas for future research and analysis.
- The most important conclusions to be drawn from our analysis are that simple comparisons of mean scores for children's subjective well-being between countries may not be reliable, but that it should generally be acceptable to use subjective well-being measures to compare correlations and regressions between countries. This second point offers considerable scope for international comparative work on children's subjective well-being.



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