Evolution of subjective well-being components during 5 years in a sample of 10-16 year-old children

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Background (I)

- The **tripartite theory of SWB** proposes that this construct includes three components: Positive affect (PA), Negative affect (NA) and Life Satisfaction (LS) (Arthaud-Day et al., 2005; Metler & Busseri, 2017).
- While defining SWB as "*an overall evaluation of the quality of a person's life from her or his own perspective*" (Diener, Lucas & Oishi, 2108, pp 1) and stating that people can evaluate their lives in terms of a **global judgment**, in terms of **evaluating the domains of their lives**, or in terms of their **ongoing emotional feelings** about what is happening to them, in the international arena very often researchers prefer to use **life satisfaction measures only**, because they are supposed to be more stable over time (Park, 2004).

Background (II)

- In the scientific literature we find end-less discussions on the relationship between the affective components of SWB: Positive Affect (PSA) and Negative Affect (NA). Different authors have pointed out that PA is more related to SWB, while NA is more related to mental health issues (Kuppens, Realo & Dienes, 2008). As a consequence, researches aiming to analyse SWB very often are **only taking into account PA measures**.
- According to Jovanić & Gavrilov-Jerković (2016), PA and NA differ in terms of their relationship to various well-being indicators.

Background (III)

- For to the International Well-Being Group (2013), there are three ways to assess the **cognitive components** of SWB:
  a) using a **single-item scale** to rate the individual's **global life satisfaction**, commonly via the question *how satisfied are you with your life as a whole?* However, despite this question being an excellent measure of SWB, such single-item measures are less reliable than multi-item scales;
  b) using **multi-item context-free scales**. This approach combines multiple items, each of which taps into global life satisfaction. The individual items are not intended to have separate meanings within the SWB construct; rather, they represent variations on the theme.
  c) using **multi-item domain-based scales**. This approach adopts a domain-level representation of global life satisfaction. Here, individual items refer to specific life domains and the scores are averaged to produce a measure of SWB.

Background (IV)

- "*When possible, researchers should include a broad array of measures*" to assess SWB (Diener, Lucas and Oishi, 2018, pp.7).
- "*A complete assessment of subjective well-being requires more than a simple life satisfaction or happiness question; well-being is a multi-faceted phenomenon and requires multi-pronged assessment*" (Diener and Tov, 2012, pp 9).
- "*We eagerly await the day when a full set of findings based on measures of positive affect, as well as related concepts, is available*" (Lyubomirsky et al, 2005, page 13).
- To clarify the relationship among these measures *"the relevant longitudinal studies need to be done with youth"* (Park, 2004).
- Some authors have pointed out that different instruments may not display identical results in different contexts (Casas *et al.*, 2012; Holte *et al.*, 2014; Casas & González-Carrasco, 2018).

Background (V)

- In order to understand the comparative evolution of different SWB components, besides **affective measures**, should we also include an overall measure of **global life satisfaction** together with **domain-based measures?** Should we also include **context-free measures**? What are the **relationships between all of these measures**?
- Up to date little is known about the comparative evolution of these measures through time in late childhood and early adolescence. In fact, for example, few longitudinal studies seem to exist exploring the **influence of both PA and NA on overall life satisfaction** throughout childhood and/or adolescence in the general population and even less including positive-negative and activated-deactivated affect as proposed by Russell's core affect theory.
- There is not much scientific literature analysing how these different measures relate to one another, but there is evidence of medium to high correlations between them in different populations, including children and adolescents, and some results suggest that these measures do not capture exactly the same construct (Casas et al., 2012).

Background (VI)

- Several instruments, both **cognitive and affective**, are already validated and used to measure subjective well-being (SWB) of children and adolescents, including PA, NA, context-free, domain-based and general life satisfaction psychometric scales.
- However, the only trend which seems to be well stablished is that scores of any SWB measure tend to decrease with age from 10 to 16 in most samples, when sensitive scale ranges are used (i.e.: 0-10 scales. Casas & González-Carrasco, 2018), excepting NA that tends to increase. Martin-Krumm *et al.* (2018) also found that positive emotions decline and negative emotions increase from childhood to young adulthood, among French students. However, there are a few exceptions, for example Weinstein *et al.* (2007) using a 0-10 Likert-type scale and real-time measures of daily mood with USA students, reported that PA modestly but significantly decreased across Grade 8 to 11, while NA was relatively stable.

This research

- In this research the evolution through time of five different SWB measures, both **affective** (**PA and NA**) and **cognitive** (both, **context-free** and **domain-based**, including one single item on overall life satisfaction – **OLS**) are analysed using a 5-year longitudinal database with children and adolescents aged 10 to 16.
- The goal is to test whether these five measures display high correlations and therefore high collinearity, and whether they display effects on each other through a 5-year period.
- Due to the lack of previous longitudinal studies on this topic, this research will keep an exploratory purpose, although testing some causal relationships.

Aims

- To test whether correlation among these five measures keeps moderate to high and stable through time during 5 years.
- To analyse whether the effects of any measure on the scores of the same instrument the following year are noticeable and keep stable along time or decrease after some years.
- To test whether the five measures display effects on the other measures through time.

Based on previous studies by Davern *et al.* (2007) we formulate one **hypothesis**: Positive Affect will have effects on all other measures through time, while effects of the OLS on other measures will be much lower. We have no previous hypothesis about the effects of context-free, domain-based and negative affect measures on the other measures through time.

Sample characteristics (I)

- During 5 consecutive years data from an overall sample of 1,696 children has been collected.
- In the first year of data collection most children were between 10 and 14 years of age, with a few 9, 16 and one 17-years-old. The following years new cohorts of 10-11 were added. Three different versions of a questionnaire were used – with more questions the older the children are (9-11; 12-13; 14 or more years of age). The additional items for elder children are not included in this presentation.
- All cohorts include slightly more girls than boys, excepting 2001 cohort. There are also more girls than boys that answered 3 or 5 consecutive years, but more boys that answered 4 consecutive years.

Sample characteristics (II)

Number of years the child answered the questionnaire		Cohort								
		1998	1999	2000	2001	2002	2003	2004	2005	Total
Boys	2	59	39	45	49	37	52	19	59	359
	3	21	25	19	19	35	68	54	8	249
	4	17	10	35	14	9	0	0	0	85
	5	0	2	13	40	32	0	0	0	87
	Total	105	85	127	131	118	159	84	93	1,001
Girls	2	75	43	41	39	39	60	27	72	396
	3	19	44	32	8	26	68	78	15	290
	4	22	12	51	17	26	0	0	0	128
	5	0	11	26	29	36	0	0	0	102
	Total	124	126	163	102	133	166	123	118	1,179
Total	2	134	82	86	88	76	112	46	131	755
	3	40	69	51	27	61	136	132	23	539
	4	39	22	86	31	35	0	0	0	213
	5	0	13	39	69	68	0	0	0	189
	Total	213	186	262	215	240	248	178	154	1,696

Abridged versions of the psychometric scales used as SWB indicators (I)

***Positive and Negative Affect (PA & NA)*:**

- Based on Russell's Core Affects scale (2003; Barlett & Russell, 1998), our questionnaire included 5 items on PA (energetic, happy, fortunate, quiet, enthusiastic) and 5 items on NA (stressed, sad, worried, tired, bored).
- The question was: "*Thinking about your overall life, which of these words best describes how you feel?*" Answers were on a unipolar scale from 0 (not at all) to 10 (very clearly).
- An abridged modified model deleting one NA item (bored), which displayed too high an error covariance (.30) with other item (tired), and one PA item (enthusiastic) which displayed low loading on the latent variable and also an error covariance with another item (fortunate) displayed excellent fit statistics [$\chi 2$ = 45.57, df = 19, CFI = .984, RMSEA = .025 (.016.035)].
- This model includes one item with each of the 8 different characteristics theorised by Barlett & Russell (1998) (pleasant, activated, pleasant-activated, and pleasant-deactivated affect; unpleasant, deactivated, unpleasant-activated and unpleasant-deactivated affect), that we are naming **PA4 and NA4**.
- As predicted for unipolar scales (Davern & Cummins, 2006), a negative correlation was observed between PA4 and NA4 for all years.

Abridged versions of the psychometric scales used as SWB indicators (II)

Brief Multidimensional Student's Life Satisfaction Scale (BMSLSS)

- This multi-item domain-based scale was developed to be used with students aged 8-18. It includes five items referring to satisfaction with different life domains. The psychometric properties of this scale have been published in different articles (Seligson et al. 2003, 2005; Huebner et al. 2006). Responses were originally encoded on a scale of 1-7, from terrible to delighted. We have changed the 1-7 scale to a 0-10 scale in order to make it more sensitive, as already tested by Casas et al. (2012a). Labels have been given to each value, describing satisfaction with each life domain from terrible to delighted.
- CFA using the 5 items displays excellent fit indexes, excepting confidence intervals for RMSEA which fits weakly in 3 of the 5 data collections. That may be due to the fact that the item on satisfaction with self could be partially redundant with the latent variable. When using the scale without this item, fit indexes are still excellent and RMSEA confident intervals are more acceptable [Year 1: $\chi 2 = 1.17$, df = 2, CFI = 1, RMSEA = .000 (.000-.036)]. Therefore we decided to use this reduced version in our SEM analysis, which we are naming **BMSLSS4**.

Abridged versions of the psychometric scales used as SWB indicators (III)

SWLS (Satisfaction with Life Scale) and SLSS modified (Students' Life Satisfaction Scale).

- The five original items of the SWLS scale (Diener, Emmons, Larsen & Smith, 1985) were used for all children during the first two years of data collection. From the third year on it was decided to use the SLSS modified version of the Children's Worlds project (Gwyther & Main, 2015; www.isciweb.org) - based on Huebner's (1995) SLSS scale - for the youngest children, in order to improve understanding and data quality. Both of them are context-free multi-item scales with equivalent items, although wording is adapted for younger children in the case of the SLSS.
- The SWLS includes 5 items and responses were originally coded on a scale of 1-7 according to level of agreement. In this research the version adapted by Casas et al. (2012a) has been used, with 1-7 scale changed to a 0-10 scale in order to make it more sensitive, and only 4 of the items used for the data analysis, item 5 being excluded because did not work well with this age group, as already explained in Casas et al. (2012a). The labels *strongly agree* and *strongly disagree* were only placed in the extreme values 0 and 10. CFA with the 4-items model displayed excellent fit indexes for the 5 years of the data collection [Year 1: $\chi 2 = 2.02$, df = 2, CFI = 1, RMSEA = .002 (.000-.043)].

(continues)

Abridged versions of the psychometric scales used as SWB indicators (III)

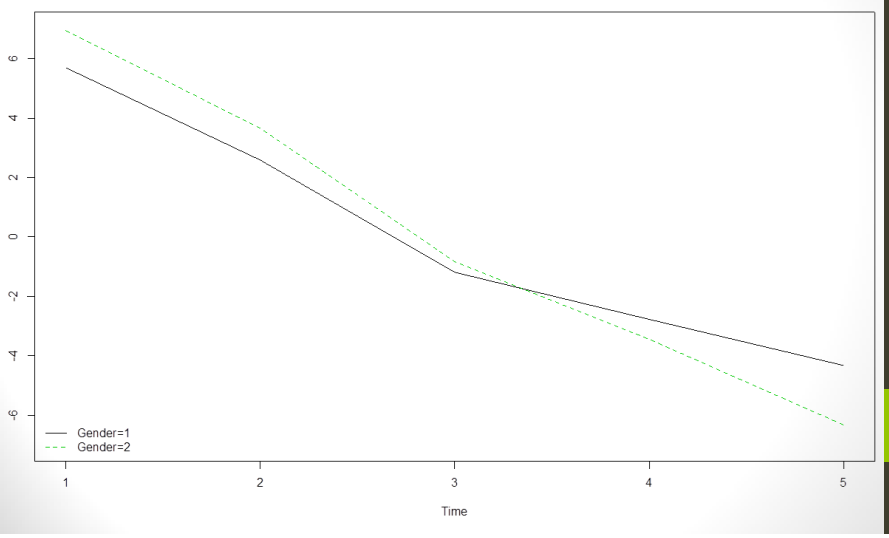
SWLS (Satisfaction with Life Scale) and SLSS modified (Students' Life Satisfaction Scale). **(continued)**

- Next we analysed the four most equivalent items of the Children's Worlds adapted SLSS version to this SWLS4 abridged version, in order to check whether merging the answers from all cohorts the resulting model would fit using Confirmatory Factor Analysis. The resulting variables have been named **SLSS4** and they displayed excellent fit indexes [Year 3: $\chi 2$ = 9.05, df = 2, CFI = .997, RMSEA = .040 (.016-.068)]. Notice that in Year 1 and 2, results are exactly the same than using SWLS4, because SLSS was not yet administered.

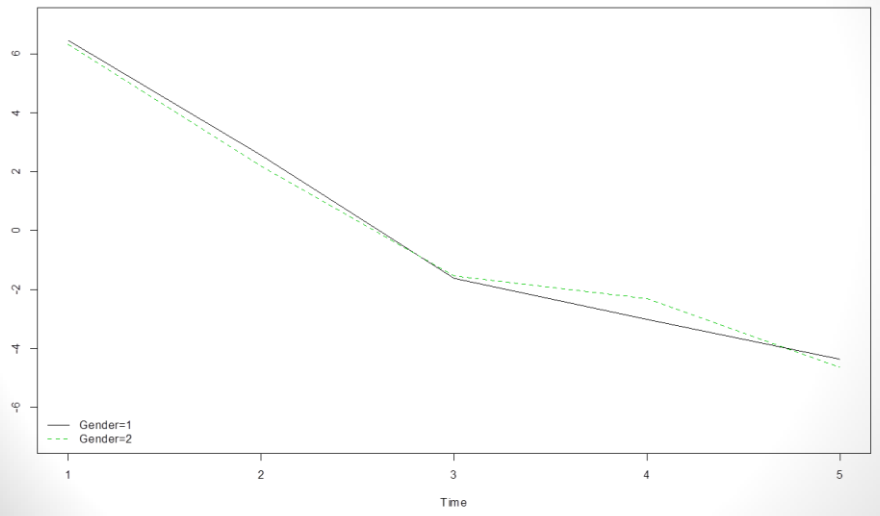
Single item-scale on Overall Life Satisfaction (OLS)

- The importance of including a single-item scale on overall life satisfaction when studying SWB has been highlighted by many authors and is recommended by the International Well-Being Index Group (2013). In our research, we included a question on *How satisfied are you with your life as a whole?* using an end-labelled bipolar 0-10 scale, from *completely dissatisfied* to *completely satisfied*.

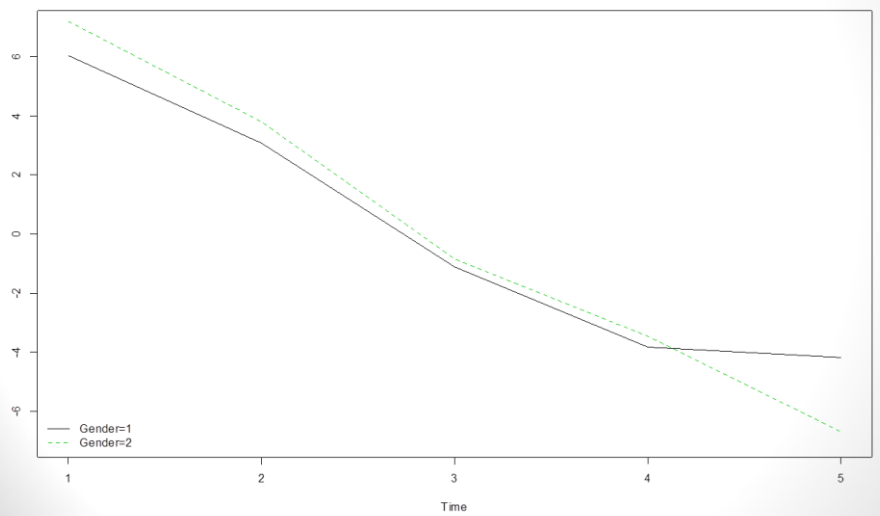
Evolution of the OLS during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by gender



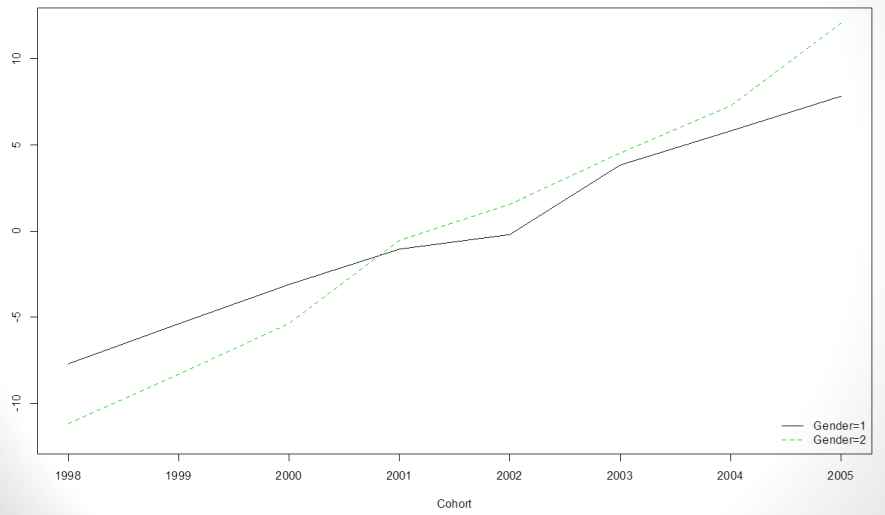
Evolution of the SLSS4 during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by gender



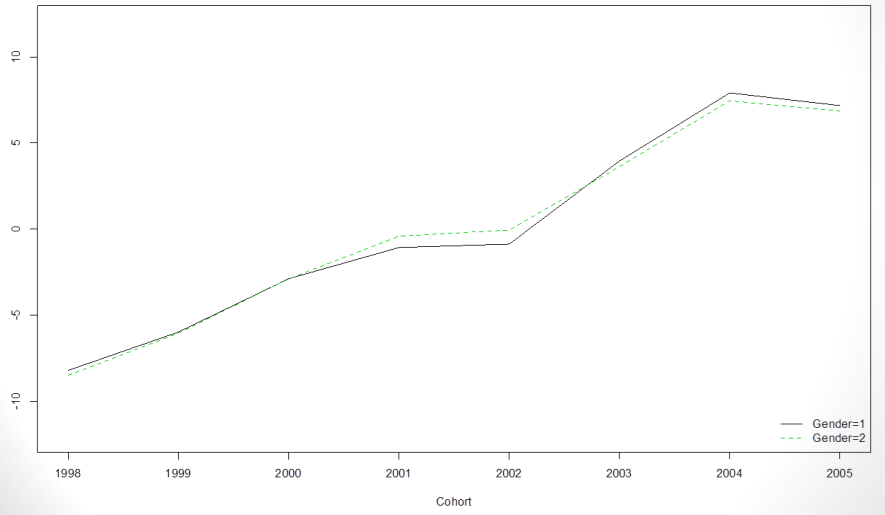
Evolution of the BMSLSS4 during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by gender



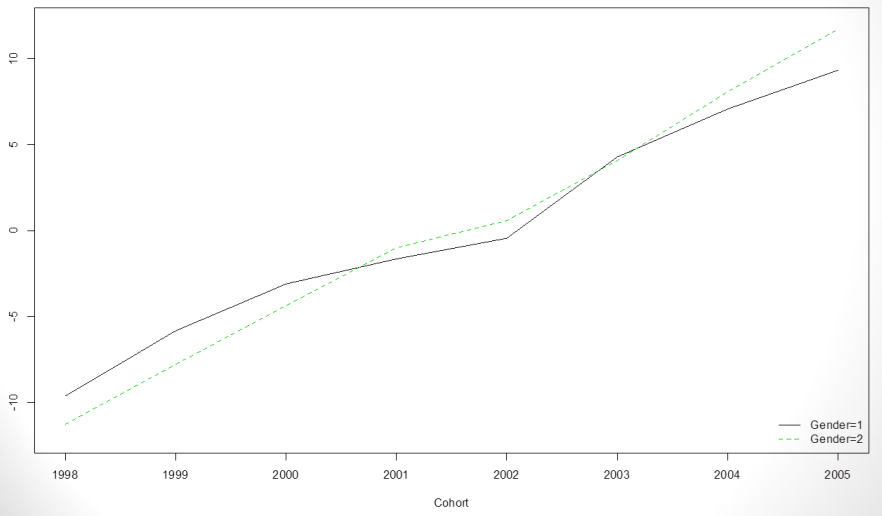
Evolution of the OLS during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by cohort and gender



Evolution of the SLSS4 during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by cohort



Evolution of the BMSLSS4 during a 5-years period, using mixed-methods models with INLA Bayesian estimation, by cohort

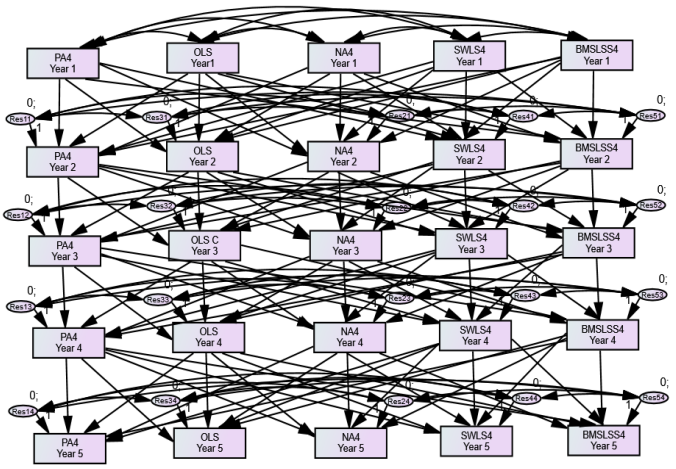


Conclusions for the INLA Bayesian estimation

Using mixed-methods models with INLA Bayesian estimation:

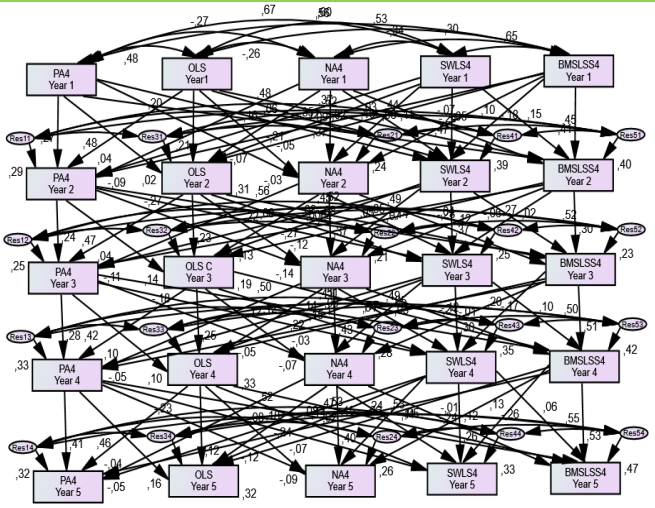
- The decreasing with-age trend is confirmed with all instruments for both genders .
- A clear gender different decreasing shape appears both by gender and by cohort and gender when using the OLS and even the BMSLSS4. Gender difference is not that clear when using the SLSS4. Therefore, gender differences appear to be more noticeable depending on the SWB instrument used.

Cross-Lagged Causal Model including Positive Affect4, Negative Affect4, the OLS, the SLSS4 and the BMSLSS4 during a 5-years period



CHI=\cmin;CFI=\cfi;RMSEA=\rmsea;

Cross-Lagged Causal Model including Positive Affect4, Negative Affect4, the OLS, the SLSS4 and the BMSLSS4 during a 5-years period



CHI=365,706;CFI=,984;RMSEA=,026;

Cross-Lagged Causal Model. Correlations. 5-years period (I)

			Year 1	Year 2	Year 3	Year 4	Year 5	Mean
PA4	↔	SLSS4	.665	.475	.559	.499	.522	.544
PA4	↔	OLS	.482	.481	.466	.416	.459	.461
PA4	↔	NA4	-.271	-.199	-.271	-.180	-.234	-.231
PA4	↔	BMSLSS4	.556	.368	.452	.412	.469	.451
OLS	↔	NA4	-.260	-.210	-.267	-.220	-.236	-.239
OLS	↔	SLSS4	.597	.518	.523	.514	.534	.537
OLS	↔	BMSLSS4	.534	.436	.492	.487	.533	.496
NA4	↔	SLSS4	-.340	-.245	-.277	-.238	-.244	-.269
NA4	↔	BMSLSS4	-.300	-.177	-.266	-.168	-.254	-.233
SLSS4	↔	BMSLSS4	.652	.450	.523	.495	.547	.533

Cross-Lagged Causal Model. Correlations. 5-years period (II)

- Correlations between the five studied measures are rather stable along the 5-years period and as effects of any variable on the next year same variable also are – although with broader fluctuation.
- The highest mean correlation is observed between PA4 and the SLSS4, next between SLSS4 and the OLS and next between the SLSS4 and the BMSLSS4 - means above .53 -, while the lowest is between PA4 and NA4, and next between NA4 and the BMSLSS4 and between NA4 and the OLS – means below .25 -. Comparatively, NA4 displays rather low correlation with any other of the variables here analysed.

Standardized estimates			Years 1-2	Years 2-3	Years 3-4	Years 4-5		Mean
PA4	→	PA4	.272***	.239***	.285***	.412***		.302
PA4	→	NA4	-.032ns	-.138**	-.070ns	-.092*		-.083
PA4	→	OLS	.016ns	.144**	.097*	.157***		.106
PA4	→	SLSS4	.062ns	.084ns	.117**	.180***		.111
PA4	→	BMSLSS4	.094*	.085ns	.048ns	.146***		.093
OLS	→	OLS	.206***	.234***	.245***	.118**		.201
OLS	→	PA4	.039ns	.043ns	.099*	-.041ns		.035
OLS	→	NA4	-047ns	-.116*	-.031ns	-.067ns		-.065
OLS	→	SLSS4	-.016ns	.043ns	.108**	.024ns		.040
OLS	→	BMSLSS4	.060ns	.073ns	.047ns	-.052ns		.032
SLSS4	→	SLSS4	.475***	.373***	.295***	.262***		.351
SLSS4	→	PA4	.157**	.218***	.116**	.081ns		.143
SLSS4	→	OLS	.349***	.078ns	.144***	.079ns		.163
SLSS4	→	NA4	-.099ns	-.047ns	.012ns	-.062ns		.055
SLSS4	→	BMSLSS4	.146**	.020ns	.099*	.060ns		.081
NA4	→	NA4	.368***	.373***	.429***	.396***		.392
NA4	→	PA4	-.089**	-.110**	-.046ns	-.048ns		-.073
NA4	→	OLS	-.072ns	-.129**	-.050ns	-.122***		-.093
NA4	→	SLSS4	-.108***	-.145***	.032ns	-.109***		-.083
NA4	→	BMSLSS4	-.046ns	-.120**	-.014ns	-.116***		-.074
BMSLSS4	→	BMSLSS4	.407***	.297***	.514***	.525***		.436
BMSLSS4	→	OLS	.029ns	-.046ns	.171***	.238***		.098
BMSLSS4	→	PA4	.119**	-.002ns	.154***	.142***		.103
BMSLSS4	→	NA4	-.070ns	.043ns	-.116**	-.014ns		-.039
BMSLSS4	→	SLSS4	.101**	-.063ns	.198***	.127**		.091

Indirect effects			2-year period			3-year period		4-y per
			Years 1-3	Years 2-4	Years 3-5	Years 1-4	Years 2-5	Years 1-5
PA4	→	PA4	.083	.111	.133	.044	.063	.027
PA4	→	NA4	-.044	-.089	-.068	-.032	-.058	-.022
PA4	→	OLS	.047	.092	.085	.038	.063	.028
PA4	→	SLSS4	.045	.081	.098	.038	.062	.028
PA4	→	BMSLSS4	.057	.072	.077	.041	.065	.032
OLS	→	OLS	.056	.086	.068	.026	.045	.017
OLS	→	PA4	.020	.057	.048	.021	.036	.014
OLS	→	NA4	-.045	-.068	-.045	-.027	-.042	-.016
OLS	→	SLSS4	.009	.054	.062	.018	.041	.015
OLS	→	BMSLSS	.042	.057	.037	.026	.045	.020
SLSS4	→	SLSS4	.211	.150	.113	.116	.069	.069
SLSS4	→	PA4	.167	.114	.079	.106	.064	.064
SLSS4	→	OLS	.147	.095	.081	.104	.055	.066
SLSS4	→	NA4	-.070	-.005	-.035	-.056	-.025	-.047
SLSS4	→	BMSLSS4	.104	.061	.078	.090	.052	.071
NeA4	→	NA4	.151	.184	.176	.081	.095	.046
NA4	→	PA4	-.088	-.097	-.037	-.063	-.064	-.040
NA4	→	OLS	-.083	-.102	-.066	-.063	-.078	-.046
NA4	→	SLSS4	-.101	-.081	-049	-.059	-.073	-.044
NA4	→	BMSLSS4	-.073	-.093	-.060	-.058	-.084	-.049
BMSLSS4	→	BMSLSS4	.144	.144	.309	.081	.083	.054
BMSLSS4	→	OLS	.022	.028	.196	.041	.047	.039
BMSLSS4	→	PA4	.059	.031	.151	.046	.036	.034
BMSLSS4	→	NA4	-.024	-.015	-.091	-.031	-.015	-.023

Cross-Lagged Causal Model. Standardized estimates (direct & indirect effects). 5-years period (II)

- Whereas the mean scores for any of the five SWB measures tend to moderately predict the following year's scores of the same measure at the population level, this predictive capacity becomes weaker the more years of difference we consider in our analysis for the 5 measures here analysed. At a 4-years term all effects become marginal.
- At one year term, this predictive capacity is moderate for the multi-item cognitive measures (the BMSLSS4 and the SLSS4) and for NA4 (above .35 in the three cases), lower for PA4 (.3) and the lowest for the OLS (.2). The predictive capacity at one year term seems to increase through time for the PA4 and for the BMSLSS4, while it seems to decrease for the SLSS4 and to fluctuate for the NA4.
- At two years-term, this predictive capacity on the same measure becomes marginal for the OLS. However, it is still noticeable for the other measures, particularly for the BMSLSS4, NA4 and the SLSS4.
- At three years-term, the predictive capacity is very small for the five instruments.

Cross-Lagged Causal Model. Standardized estimates (direct & indirect effects). 5-years period (III)

When we analyse the effects of each measure on other measures, data suggest that:

- PA4 tends to display an increasing effect through time on the SLSS4 and on the OLS.
- The SLSS4 tends to display a decreasing effect through time on PA4 and on the OLS. In no case it displays any significant effect on NA4.
- The BMSLSS4 tends to display fluctuating effects on the SLSS4 and on the OLS, while its effects on PA4 tend to increase.
- The OLS effects on other measures tend to be mostly non-significant through time.
- The effects of NA4 on other measures tend to be low and fluctuating - mostly non-significant, excepting on the SLSS4, which are mostly significant -.

Cross-Lagged Causal Model. Squared Multiple Correlations. 5-years period (I)

		Year 1	Year 2	Year 3	Year 4	Year 5	Mean
PA4	SMC		.292	.250	.330	.315	.297
OLS	SMC		.313	.193	.330	.322	.290
NA4	SMC		.235	.212	.282	.264	.248
SLSS4	SMC		.393	.250	.353	.326	.330
BMSLSS	SMC		.401	.229	.415	.466	.378

Cross-Lagged Causal Model. Squared Multiple Correlations. 5-years period (II)

- SMC suggest that between 19% and 47% of the variance of any of the SWB measures here analysed is explained by the influence of the previous year scores of these five measures, but particularly of the same measure.
- However, this does not seem to be so clear for NA4 and for the OLS that display the lowest explained variances, suggesting other variables not here analysed may have relevant contributions to them.
- The highest explained variance in this model is shown by the BMSLSS4 (mean of 37.8%) and the SLSS4 (mean of 33%), while the lowest is for NA4 (mean of 24.8%).

Conclusions (I)

- The first notable results of our longitudinal analysis of data collected from children and adolescents over 5 consecutive years are that most mean values of the 4 positive SWB indicators used decrease with age at the population level, as pointed out previously by different authors for any SWB scores (see Casas & González-Carrasco, 2018, for a review), while all cohorts display an increasing-with-age trend for Negative Affect – these results being consistent with findings by Lawton et al. (1993), Weinstein et al. (2017) and Martin-Krumm et al. (2018).
- Therefore, nor Positive or Negative Affect, either the cognitive components of SWB (does not mattering whether measured with context-free, domain-based or overall single-item instruments) appear to be stable between 10 and 18 years of age.

Conclusions (II)

- Our results show a correlation between Positive Affect and Life Satisfaction between .42 and .48, that is to say, even narrower than the range found by Lucas, Diener & Suh (1996) with undergraduates, and by Argyle (2001) and Kahneman and Krueger (2006) with adults.
- Correlation between Positive Affect and both context-free and domain-based measures are noticeable, with a mean above .54 in the first case and above .45 in the second. However, its mean correlation with NA is clearly lower (-.23). Correlation between the OLS and both context-free and domain-based measures are rather similar than with PA: the mean correlation with the context-free measure is above .53 and with the domain-based measure is above .49, while it is -.24 with NA. The mean correlation between the context-free and the domain-based measure is rather high (.053), while correlation of NA with the other SWB measures is rather low.

Conclusions (III)

- The mean effects of any of the measures here used on the next year scores of the same measure are rather important (between .03 and .044). Only the mean effect of the OLS on next year OLS scores (.02) is clearly lower than for the other measures.
- PA displays very low or non-significant effects on the next year scores of other measures when children are younger, but these effects increase to moderate when they become older, excepting on NA, which are always very low or non-significant.
- The effects of any year scores of the NA on the next year NA scores are fluctuating, but mean scores tend to be low or non-significant.

Conclusions (IV)

- Mean effects of the context-free measure on the next year scores of the other SWB measures tend to be moderate on PA and on the OLS, but non-significant on the domain-based measure, and they are never significant on the NA.
- Mean effects of the domain-based measure on the OLS tend to be non-significant when children are younger, but increasingly significant when they become older. These effects also tend to be significant on PA and on the context-free measure, while non-significant on NA.
- Mean effects of the OLS on next year scores of other measures tend to be non-significant.

Conclusions (V)

- With longitudinal data, the five instruments here used as SWB indicators appear to be rather independent separated measures, with moderate correlation between them, but low effects from any of them on the others from one year to the following.
- Not only NA, but also the single-item measure of SWB (the OLS) appear to be very distinctive instruments displaying very low or non-significant effects on any other measures.
- PA displays very moderate effects on the other measures (excepting on NA, which are often non-significant). The context-free measure displays low mean effects on the other measures, excepting on NA, which are always non-significant. The domain-based measure displays fluctuating effects on the other measures – while its effects on the OLS tend to increase the older children are, its effects on PA and on the context-free measure are very moderate.

Conclusions (VI)

- Our hypothesis that "PA will have effects on all other measures through time, while effects of the OLS on other measures will be much lower" is only partially supported. PA did not display mean significant effects on NA, excepting occasionally at $p<.01$ in Year 2. Its effects on the OLS, the context-free and the domain-based although significant as mean, are occasionally non-significant. The effects on the context-free measure appear to increase when the children are older. However, the statement that effects of the OLS on other SWB measures are much lower than on NA get clear support from our data.
- The idea of bidirectional causal relationship between these variables (Flos & Kulin, 2016) receives support from our data, but effects are very moderate in all cases.

Conclusions (VII)

- Results show that each of the five measures here used evolves differently and independently through time, with low effects on the evolution of the others. These results contribute with new knowledge to the understanding of the evolution of SWB aspects in childhood and adolescence – as measured by different instruments – and the relationship among these instruments, and may allow to better decide about which measure should be used when analysing SWB of children and adolescents at population level. Anyhow, i**t becomes clear that it is advisable to use always more than one of these measures as indicators of SWB.**
- The results here obtained shed new light on the fact that SWB measurement may lead to different results depending on the instrument used, because despite the moderate correlation among all of them, they capture different aspects of SWB. These findings also contribute to opening the door to the need of more longitudinal data from young peoples and of more detailed analysis of year-to-year scores.

Evolution of subjective well-being components during 5 years in a sample of 10-16 year-old children

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