WG/T/8

MEASURING SDG INDICATOR 4.C.5

SUMMARY UPDATE

The document summarize the alternatives for reporting indicator 4.c.5 based on TCG6 document http://tcg.uis.unesco.org/wp-content/uploads/sites/4/2019/08/TCG6-REF-7-Measuring-SDG-Indicator-4.c.5.pdf

Indicator 4.c.5: Average teacher salary relative to other professions requiring a comparable level of qualification

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Average teacher salary relative to other professions requiring a comparable level of qualification

Table 1. **Comparing different approaches using currently collected and reported data**[1]

Data source	**Labour force surveys** (LFS)	**Government statutory sources** (UIS country questionnaire)	**teaching staff compensation** (UIS country questionnaire)	**International student assessments' teacher questionnaires**
Measure definition	Estimated monthly and hourly earnings of teachers relative to other workers (expressed as a ratio) controlling for differences in educational attainment, experience, gender (Mincer model)	Statutory annual earnings of a public school teacher with typical qualifications and 15 years' experience relative to average professional salaries	Teaching staff compensation per teacher relative to average professional salaries	Average teacher salaries relative to average professional salaries of teachers of assessed grade level
Main advantages	Only method that provides an estimate of SDG Indicator 4.c.5 conforming to its definition. Includes public and private school teachers, can control for education level.	Generally, the easiest source of data as it does not require any special surveys or analysis; currently used by OECD	This measure was found to be available for 22 countries already compared to statutory sources (see below)	Provides an average of teacher salaries for public and private providers
Main disadvantages	1. Small sample size of teachers may result in insufficient statistical power to make comparisons depending on the survey and context. 2. Requires considerable analytical work by labor economists or statisticians familiar with labor force survey data and a comparable method for measuring salary differences applied to all datasets	1. Provides salaries for public school teachers only at approximately the mid-point in their career, not at average for all teachers 2. Requires an additional source of data for comparator salaries 3. Requires analytical capacity by government / informant to study the applicable laws and regulations and a method for aggregating when laws and regulations vary within	1. Provides an overestimate of teacher salaries compared to the comparator salaries (those of professional occupation) because it includes employer contributions to social security and pensions 2. Provides salaries for public school teachers only 3. May be an average of full and part-time teachers together (not full-time equivalents) in some countries	1. Provides averages only for teachers of assessed grade level 2. Has only been included in PASEC 2014 so far 3. Sample-based, and large confidence intervals possible (**see Figure 1**) below

1 Based on a review for the UIS in 2019: Macdonald (2019). *Measuring SDG Indicator 4.C.5 and The Role Of The UNESCO Institute For Statistics*. Discussion paper for the UIS

Data source	**Labour force surveys** (LFS)	**Government statutory sources** (UIS country questionnaire)	**teaching staff compensation** (UIS country questionnaire)	**International student assessments' teacher questionnaires**
		countries (e.g.: federal system; different regulations within same level of school, etc.)		
Currently available sources	Several published studies (primarily in Latin American countries) have estimated earnings differences (see **Table 2**). However, the variation in methods and model specification limit comparability across studies. Most published results are not recent. However, most countries have some form of labor force survey conducted frequently; hence, a lot of data points could be available with substantial analytical work.	1. Teacher salaries: UIS data currently collects statutory salaries of teachers with typical qualifications and 15 years' experience (mid-career earnings following OECD) 2. Comparator salaries: ILOSTAT monthly and hourly earnings for professionals (which includes teachers) but not by education level and not for all (see **Table 3**)	Combines data from the following indicators collected by UIS: (1) teaching staff compensation as a percent of expenditure by level of education, (2) expenditure by level of education as a percent of GDP, (3) number of full-time equivalent classroom teachers by level of education. It would also require data on GDP by country and comparator salaries from ILOSTAT (see **Table 4**).	Currently only PASEC 2014 collected teacher salaries (in intervals). Comparator salaries (e.g.: professional salaries from ILOSTAT) would also be required.
Number of countries an indicator can be derived	Most countries have a LFS programme; requires analysis to derive indicators	At the primary level: 30 countries to calculate an average teacher compensation per teacher; 22 of which had comparator salaries in ILOSTAT	At the primary level, 29 countries had; 11 of these had comparator salaries from ILOSTAT (note: not counting OECD At a Glance data)	10 PASEC countries (all primary level); however, only 2 had professional earnings as a comparator in ILOSTAT
Can historical indicators be calculated?	Yes, but requires analysis of earlier LFS data	Earliest data provided for the review was 2014 (data currently not available on UISSTAT)	Earliest expenditure on teaching staff data in UISSTAT was 1995	Not aware of any other international student assessment programmes that collected this data other than PASEC 2014

Table 2. Percent difference in hourly earnings between teachers and non-teachers controlling for experience, age and other characteristics (Mincer earnings function, Liang 2000)

	Hourly Earnings			Annual earnings		
Country	**Estimate**	**95% confidence interval**		**Estimate**	**95% confidence interval**	
Bolivia	n.a	n.a	n.a	-31.6***	-36.8	-26.0
Brazil	-6.8**	-12.1	-1.1	-29.5***	-33.6	-25.3
Chile	n.a	n.a	n.a.	-17.3***	-22.0	-12.3
Colombia	22.1***	17.4	27.0	-4.9***	-8.5	-1.1
Costa Rice	16.2***	7.4	25.7	n.a.	n.a.	n.a.
Ecuador (urban)	-23.7***	-29.4	-17.4	-30.9***	-34.9	-26.7
El Salvador	9.4***	3.2	16.0	-19.7***	-24.3	-14.9
Honduras	33.6***	23.6	44.5	n.a.	n.a.	n.a.
Panama	12.7***	6.3	19.6	-4.9*	-10.3	0.9
Paraguay	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Uruguay (urban)	10.5***	4.2	17.2	-13.1***	-18.0	-7.8
Venezuela	8.3*	0.2	17.2	-8.6*	-15.5	-1.1

Source: Liang 2000; author's conversion to percentages and calculation of the 95% confidence interval. Statistical significance at the 1, 5, and 10 percent levels denotes as ***, **, and *, respectively. Liang 2000 did not report non-statistically significant differences defined as higher than 10 percent; they are denoted n.a. in this table.

Table 3. Currently available measure based on statutory salaries (primary school teachers)

Country	Year	**Annual statutory salary for a teacher with typical qualifications and 15 years' experience** (local currency)	**Monthly earnings of professionals** (ILOSTAT, local currency)	**Ratio** (to annual earnings)
Africa				
Cameroon	2018	2,050,000	216,525	0.79
Liberia	2016	24,975	9,984	0.21
Mauritius	2018	412,425	38,171	0.90
Rwanda*	2018	7,655,000,000	202,519	3150.00
Arab States				
Jordan	2018	8,500	671	1.06
Palestine	2018	54,972	2,579	1.78
Asia and the Pacific				
Mongolia	2018	3,852,727	1,133,997	0.28
Philippines	2017	347,742	26,293	1.10
Europe and North America				
Albania	2018	677,400	67,888	0.83
Latin America and the Caribbean				
Costa Rica	2018	9,700,000	1,163,276	0.69
Ecuador	2017	18,746	904	1.73

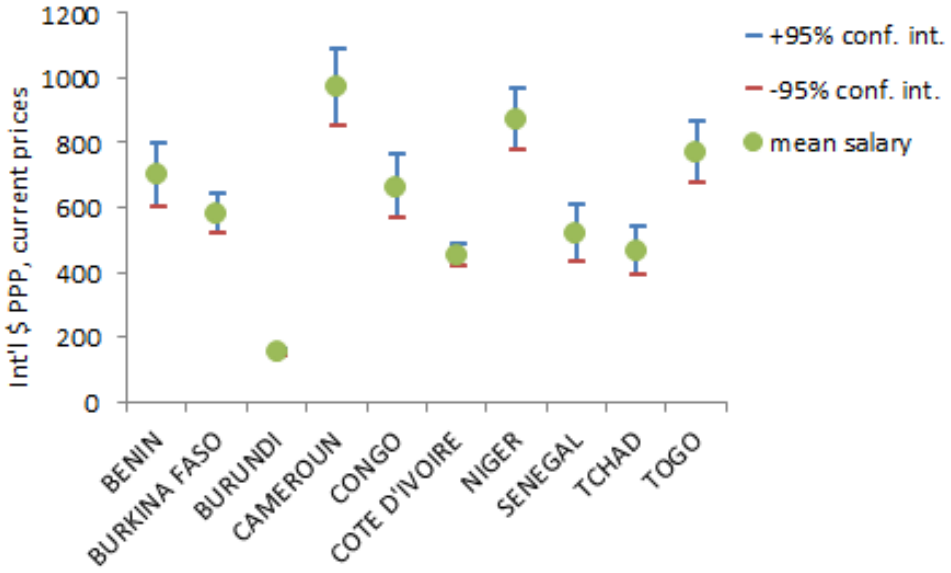
Annual statutory salaries of teachers with typical qualifications and 15 years' experience is collected in the UIS education questionnaire A11. *Data for Rwanda as in dataset currently, may be incorrect.

Table 4. Currently available measure based on teaching staff compensation per FTE classroom teacher (primary school teachers)

Country	Year	Teaching staff compensation per FTE classroom teacher (local currency)	Monthly earnings of professionals (ILOSTAT, local currency)	Ratio to annualized (monthly x 12) earnings	OECD Education at a Glance Actual salaries of all teachers, relative to earnings for full-time, full-year similarly-educated workers (same year)
Africa					
Cabo Verde	2015	840,273	53,443	1.31	n.a.
Eswatini	2014	101,222	6,854	1.23	n.a.
Gambia	2012	57,605	4,697	1.02	n.a.
Zimbabwe	2013	7,054	348	1.69	n.a.
Asia and the Pacific					
Malaysia	2012	38,964	3,813	0.85	n.a.
Maldives	2014	153,040	12,504	1.02	n.a.
Europe and North America					
Austria	2015	65,728	3,799	1.44	0.72
Belgium	2014	62,174	4,413	1.17	0.85 / 0.91*
Bulgaria	2013	26,481	1,173	1.88	n.a.
Cyprus	2015	65,169	2,616	2.08	n.a.
Estonia	2013	17,483	1,214	1.20	0.94
Finland	2014	52,839	4,077	1.08	0.91
Ireland	2013	76,471	4,804	1.33	n.a.
Lithuania	2015	15,281	865	1.47	0.88
Luxembourg	2014	119,007	5,778	1.72	1.08
Malta	2015	39,112	2,150	1.52	n.a.
Portugal	2015	43,302	1,274	2.83	1.33
Romania	2015	45,516	3,419	1.11	n.a.
Slovakia	2015	28,177	1,256	1.87	0.62
Switzerland	2014	177,778	8,205	1.81	n.a.
Latin America and the Caribbean					
Ecuador	2015	11,227	887	1.05	n.a.
Guyana	2012	845,938	87,399	0.81	n.a.

*French and Flemish communities, respectively. Teaching staff compensation per FTE classroom teacher is calculated as (teaching staff compensation as a percent of expenditure on primary education x expenditure on primary education as a percent of GDP x nominal GDP) / (FTE classroom teachers in primary). Teaching staff compensation as a percent of expenditure on primary education and expenditure on primary education as a percent of GDP are obtained from UISSTAT, FTE classroom teachers in primary education was collected in UIS education questionnaire A9; nominal GDP was obtained from the IMF WEO October 2018.

Figure 1. Mean teacher salaries and 95% confidence bounds estimated from PASEC



Source: author's calculations using PASEC 2014. Mean wages and confidence intervals have been converted into PPP using PPP conversion rates published in the IMF WEO 2018 October Edition