Appendix to *Subjective socioeconomic status and health in cross-national comparison*

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A.1 Descriptive statistics

Table A.1 presents individual-level descriptive statistics across all countries. Table A.2 reports country-level descriptive statistics for income inequality and GDP per capita, gives individual-level sample sizes per country, and reports the response rates.

Table A.1: Descriptive statistics of individual-level variables, N = 33,342

Variable	Mean	Std. dev.	Min.	Max.
Self-rated health (SRH)	2.03	1.00	0	4
Psychological wellbeing	3.10	0.91	0	4
Subjective SES (centered)	0.00	1.81	-4.26	4.74
Education				
Low Education	0.37	—	0	1
Medium Education	0.37	—	0	1
High Education	0.26	—	0	1
ISEI				
ISEI (centered)	0.00	1.60	-2.69	4.70
Never worked	0.08	—	0	1
Household income quintiles				
Q 1 (lowest)	0.14	—	0	1
Q 2	0.16	—	0	1
Q 3	0.15	—	0	1
Q 4	0.17	—	0	1
Q 5 (highest)	0.18	—	0	1
Income missing	0.19	—	0	1
Age (centered)	0.00	13.5	-23.3	25.7
Female	0.55	—	0	1
Marital status				
Married/cohabiting	0.72	—	0	1
Divorced	0.08	—	0	1
Widowed	0.06	—	0	1
Single	0.13	—	0	1

Table A.2: Descriptive statistics of country-level variables, sample sizes, and response rates, $N = 29$

Country	Gini coefficient	GDP per capita	Sample size	Response rate
AU (Australia)	33.9	36,504.1	1,287	31.2 %
BE (Belgium)	25.1	37,913.8	1,013	30.2 %/50.1 %
BG (Bulgaria)	35.8	4,680.0	776	49.8 %
CH (Switzerland)	30.2	58,533.3	930	53.9 %
CL (Chile)	49.7	9,029.0	1,158	83.3 %
CN (China)	39.7	3,150.2	3,366	75.8 %
CZ (Czech Republic)	25.6	14,897.0	1,402	57.9 %
DE (Germany)	30.3	38,470.8	1,254	35.7 %/37.7 %
DK (Denmark)	27.0	48,143.9	1,062	56.1 %
ES (Spain)	32.7	25,937.9	1,954	75.8 %
FI (Finland)	25.5	40,531.1	1,045	53.7 %
FR (France)	28.9	35,775.4	664	35.9 %
HR (Croatia)	27.6	10,830.6	826	47.0 %
IL (Israel)	37.0	23,755.7	876	66.7 %
JP (Japan)	30.5	36,203.4	885	73.9 %
KR (South Korea)	31.4	22,883.8	1,284	61.4 %
LT (Lithuania)	36.4	9,704.9	912	35.8 %
NL (The Netherlands)	26.8	44,196.3	1,027	33.7 %
NO (Norway)	22.2	65,897.2	1,411	48.5 %
PH (Philippines)	41.3	1,430.1	998	34.7 %
PL (Poland)	29.7	10,540.7	868	42.6 %
PT (Portugal)	33.2	18,917.0	781	58.6 %
RU (Russia)	45.2	6,631.5	1,076	48.2 %
SE (Sweden)	21.9	45,727.0	827	59.8 %
SI (Slovenia)	24.2	19,405.5	766	64.7 %
SK (Slovak Republic)	24.0	14,957.9	846	47.1 %
TR (Turkey)	37.5	8,413.4	1,071	51.8 %
TW (Taiwan)	30.5	37,719.6	840	50.1 %
ZA (South Africa)	63.5	6,010.4	2,137	85.9 %
Average	32.7	25,406.6	1,150	53.4 %
SD	8.9	17,775.5	—	—

Notes: Gini from Solt (2009), GDP per capita from World Bank (2014). GDP per capita for Taiwan taken from IMF (2012). Response rates in Belgium and Germany refer to the Wallonian and the Flemish and the Western and Eastern parts, respectively.

A.2 Country-level correlations

Figure A.1 presents descriptive findings on the country-level for the two health outcomes, subjective SES, as well as income inequality and GDP per capita. As already reported for the micro-level, the two health outcomes are related to one another, however, the relationship appears to be rather modest (Pearson's $r = .38$). We can also see that subjective SES aggregated to the country-level predicts the two outcomes, but to varying degrees: While the relationship to SRH is sizable ($r = .60$), the relationship to average psychological wellbeing in a country is more modest ($r = .38$). GDP per capita is positively correlated to average SRH ($r = .40$), but not so much to psychological wellbeing ($r = .22$). The positive correlation between GDP per capita and subjective SES is substantial ($r = .65$). Income inequality is to a limited extent negatively correlated to SRH ($r = -.22$) and psychological wellbeing ($r = -.27$), but the negative association with subjective SES is substantial ($r = -.55$)

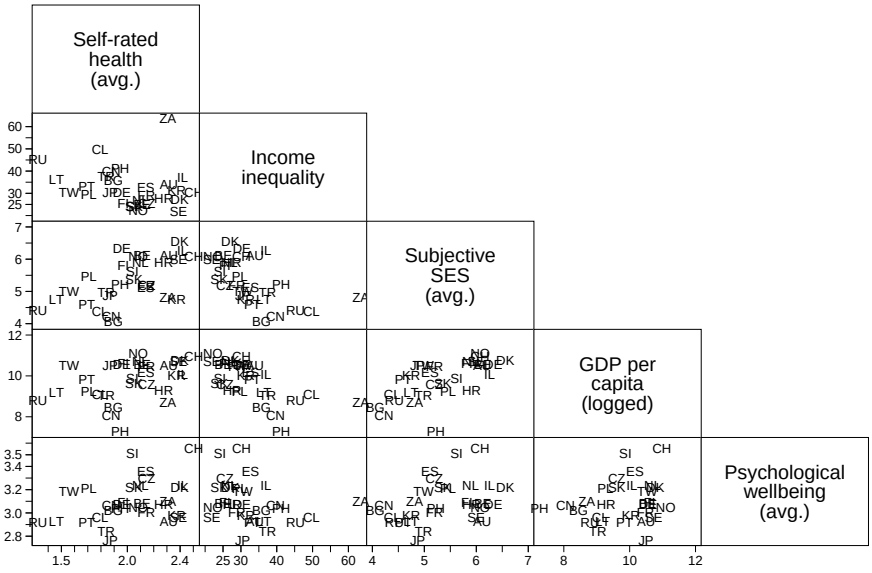

Figure A.1: Scatterplot matrix of self-rated health, income inequality, subjective SES, GDP per capita, and psychological wellbeing on the country level

A.3 Null models and random intercept-only models

Models A0a and A0b of Table A.3 are so-called null models—models without any predictor variables—to obtain the intraclass correlation (ICC; Snijders and Boskers, 2012, section 4.4) of the outcome variables self-rated health and psychological wellbeing. The ICC gives the proportion of the total variance in the dependent variable that is accounted for by the clustering in countries. Put differently, the ICC is a measure of the extent to which respondents living in the same country are more similar to one another than to respondents living in other countries. For self-rated health, we find an intraclass correlation coefficient (ICC) of $0.0841/(0.0841 + 0.920) = .08$. For psychological wellbeing, ICC equals $0.0318/(0.0318 + 0.813) = .04$.

Models A1a and A1b are so-called random intercept models that differ from the models 1a and 1b in Table 1 of the main text with respect to the fact that the coefficient of subjective SES is fixed, that is, it is not allowed to vary across countries. Comparing the model fit—as expressed in the model deviance in the table—reveals that the random slope models, which allow the slope of subjective SES to vary across countries, provide significantly better model fit. For self-rated health $\chi^2 = 41.33, df = 2, p < .001$ and for psychological wellbeing $\chi^2 = 75.16, df = 2, p < .001$. Substantively, these tests indicate that there is variation across countries in the size of the association between subjective SES and the two health outcomes of SRH and psychological wellbeing. A comparison of the fixed parameters of the models shows that they are not substantively affected by allowing the slope of subjective SES vary.

Table A.3: Self-rated health and psychological wellbeing regressed on several predictors—null models and random intercept models (parameter estimates from random intercept models, t-statistics in parentheses)

	(A0a) Self-rated health	(A0b) Psychological wellbeing	(A1a) Self-rated health	(A1b) Psychological wellbeing
Subjective SES			0.130***	0.123***
			(43.29)	(42.74)
Age			-0.0174***	-0.00123**
			(-42.91)	(-3.14)
Female (*ref.* male)			-0.0691***	-0.169***
			(-6.87)	(-17.42)
Marital status (*ref.* married/cohabiting)				
Divorced			-0.0344	-0.207***
			(-1.85)	(-11.56)
Widowed			-0.0953***	-0.216***
			(-4.38)	(-10.32)
Single			-0.0364*	-0.131***
			(-2.32)	(-8.70)
Intercept	2.024***	3.098***	2.072***	3.230***
	(37.38)	(92.37)	(45.04)	(102.62)
Variance(intercept)	0.0841***	0.0318***	0.0594***	0.0269***
Variance(residual)	0.920***	0.813***	0.808***	0.751***
Deviance	91968.3	87811.4	87639.8	85173.6
N countries	29	29	29	29
N individuals	33,342	33,342	33,342	33,342

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

A.4 Subjective SES–health association based on country-specific ordinary least squares (OLS) regression models

In this section, we conduct a robustness check of our findings from the main text using an alternative specification, namely the two-step regression approach (Kedar and Shively, 2005; Wooldridge, 2010).

A.4.1 Method: Two-step regression approach to multilevel data

The two-step regression approach (Kedar and Shively, 2005; Wooldridge, 2010) is an estimation strategy for multilevel models when the size of clusters is large and the number of clusters is comparatively low, as is typically the case in analyses of cross-national survey data (Bryan and Jenkins, 2015). In the first step, separate OLS regression models for each cluster are estimated, including all relevant individual-level control variables in the equation. From these models, the parameter of interest is retained, which in our case is the subjective SES coefficient. In the second step, these parameters of interest are then regressed on the cluster-level covariates.

The two-step regression approach serves as an important robustness check for multilevel analyses for two reasons. Simulations suggest that estimates of variance components in random effects models are unreliable when the number of countries is small (Bryan and Jenkins, 2015). Further, fitting country-specific models amounts to including random slopes for all predictor variables in our models. The implicit assumption of the Models presented in Table 1 of the main text is that subjective SES is the only predictor variable which varies in the strength of its relationship to the outcomes across countries. This assumption is unlikely to be tenable, but introducing more variance components and covariance terms in our models leads to convergence problems. Thus, the two-step OLS regression approach also tests the robustness of our results when these assumptions are violated.

A.4.2 Results

Figure A.2 tests Hypotheses 1A and 1B using country-specific OLS regression models instead of random coefficient models for the entire sample. The panels in the upper row of Figure A.2 present the unstandardized regression coefficients of subjective SES along with their 95 per cent confidence intervals, stemming from country-specific OLS models which additionally controlled for age, sex, and marital status. It shows that the subjective SES coefficients are greater than zero at conventional levels of statistical precision in all countries of our sample for both outcome variables, thus supporting Hypothesis 1A. A comparison with the panels in the middle row of Figure 2 show that the ordering of countries is similar regardless of the estimation procedure.

The panels at the bottom of Figure A.2 report the same parameters as those in the top row, however, they are now derived from models additionally controlling for objective indicators of SES education, occupational prestige, and household income. Again, the 95 per cent confidence intervals indicate that the subjective SES–health association can be found in all countries in our study, even when objective indicators of SES are accounted for. This finding supports

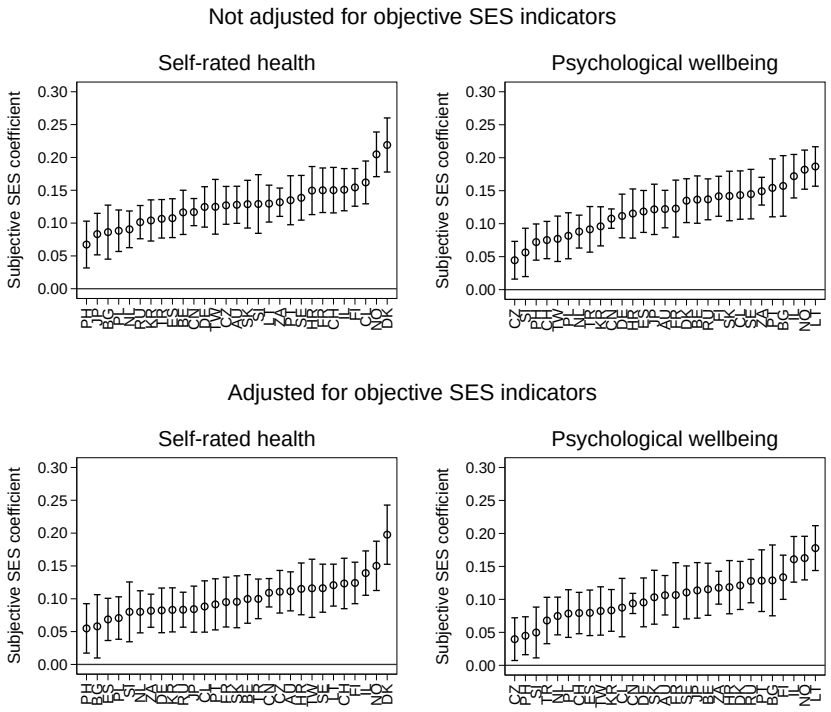

Figure A.2: Association between subjective SES and health outcomes across countries, based on country-specific OLS regression models. *Upper* row: not adjusting for objective SES indicators. *Lower* row: adjusting for objective SES indicators.

Notes: Error bars denote 95% CI's of OLS coefficients. All models control for age, sex, and marital status.

Hypothesis 1B. Also, a comparison with the corresponding panels at the bottom of Figure 2 in the main text reveals that country order is similar for both approaches.

Figure A.3 reports tests of Hypotheses 2 and 3 using the two-step OLS regression approach. For each country sample and each outcome variable, an OLS regression model including subjective SES and controlling for the objective SES indicators, as well as age, sex, and marital status, was estimated. The unstandardized subjective SES coefficients were then regressed on GDP per capita and on the Gini coefficient. Results are reported in the scatterplots displayed in Figure A.3. The panels in the top row of Figure A.3 confirm the findings reported in Models 4a and 4b of Table 1, as well Figure 3 from the main text. There is a positive correlation between country affluence and the strength of the subjective SES–SRH correlation, but not for psychological wellbeing, thus Hypothesis 2 is not supported. The positive association between country affluence and the strength of the subjective SES–SRH correlation also holds when excluding seeming outliers Denmark ($b = .001, p = .007$) and the Philippines ($b = .001, p = .008$).

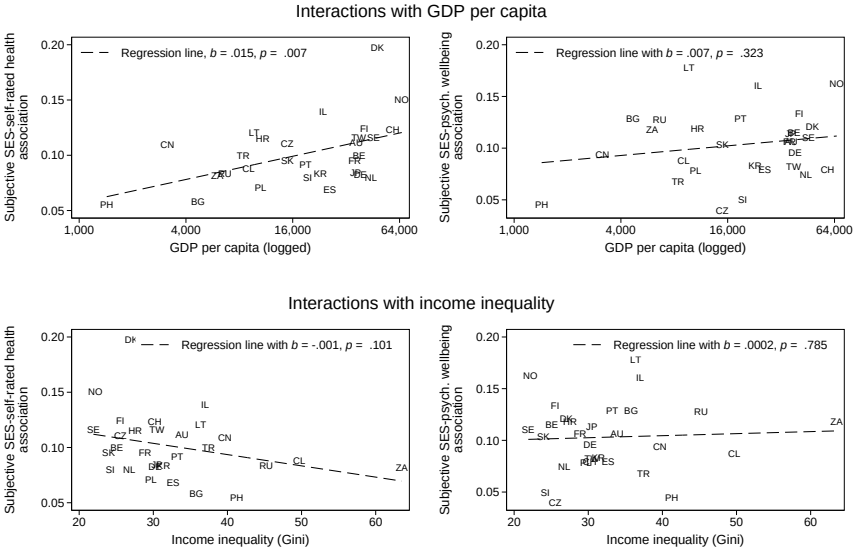

Figure A.3: Scatterplots of subjective SES–health associations against country-level predictors, based on country-specific OLS models. *Upper* row: logged GDP per capita. *Lower* row: income inequality.

Note: All models control for education, occupational prestige, household income, age, sex, and marital status.

The panels in the bottom row of Figure A.3 display another test of Hypothesis 3, which had suggested that the subjective SES–health relationship is stronger in less egalitarian countries. Identical to the results reported in Models 4a and 4b of Table 1 in the main text, no support for Hypothesis 3 is found, as no clear pattern emerges from the plots.

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