GDP per capita is a poor predictor of national well-being

Adrien Fabre (CNRS, CIRED)

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Introduction

What makes a country happy?

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What do we mean by “happy”? Subjective well-being.

Literature

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We challenge this finding.

Primer of the results

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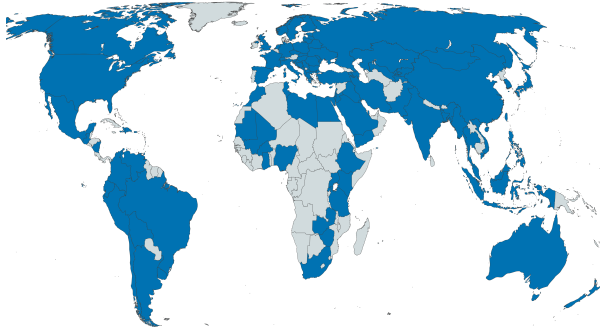
Another simple variable, the country's (macro) region, is a better predictor of national well-being.

Design

Data

World Values Survey (WVS): representative surveys on 440,000 respondents over 108 countries.



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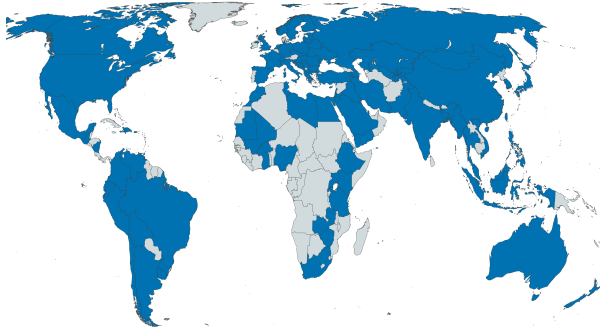

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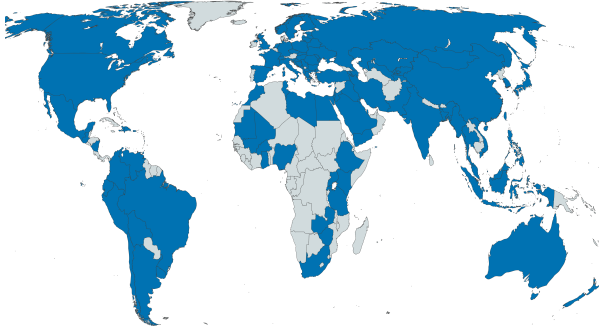

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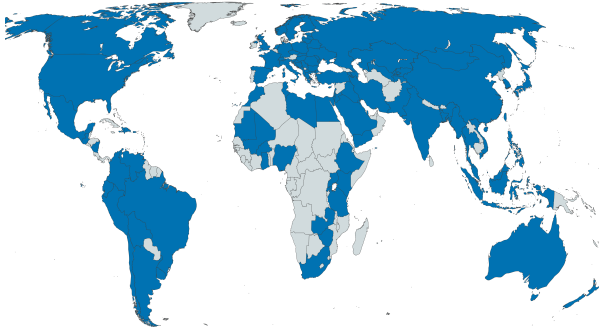
Very happy; *Quite happy*; *Not very happy*; *Not at all happy*; PNR



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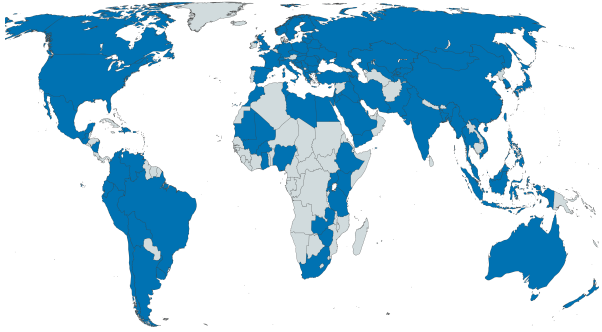
Satisfaction: "All things considered, how satisfied are you with your life as a whole these days?"
1-Completely dissatisfied – 10-Completeley satisfied; PNR



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Happy + Satisfied: average of **Happy** and **Satisfied**

This is the variable used by Inglehart & Klingemann (2000)

How we measure income

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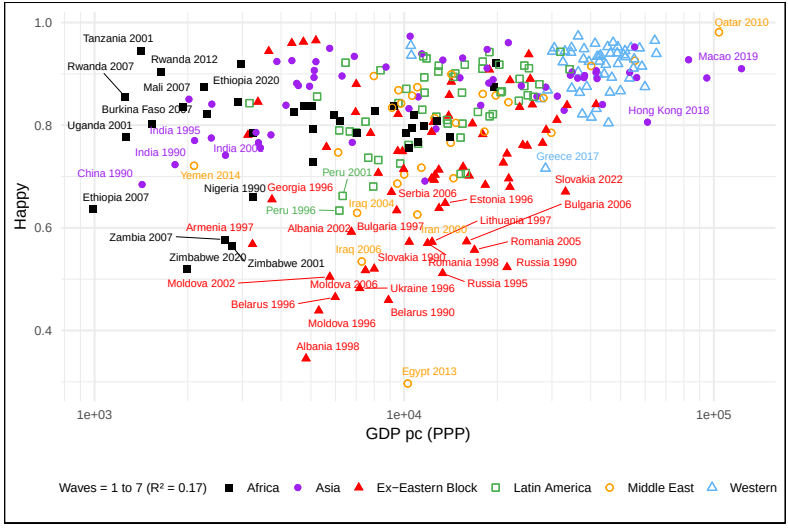
- For robustness, we also run our analyses without this imputation (excluding countries with missing GDP data).

National well-being and income

Graphical evidence

Happy vs. log GDP p.c. (PPP) — All waves of WVS.



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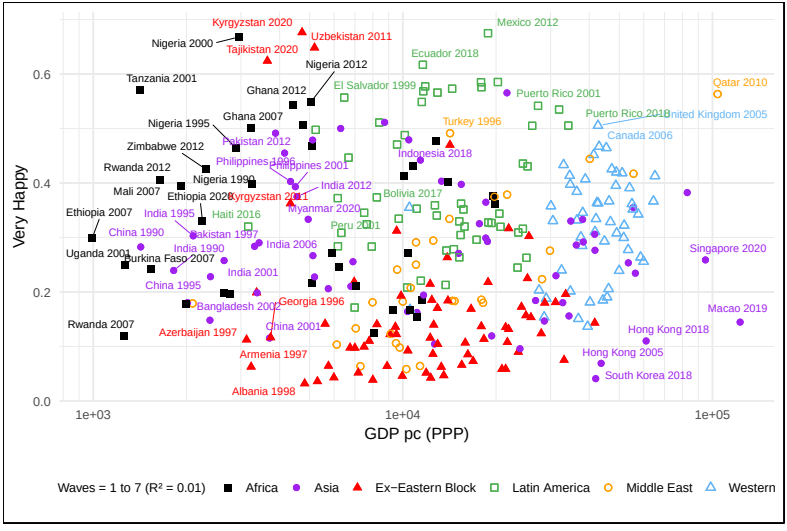

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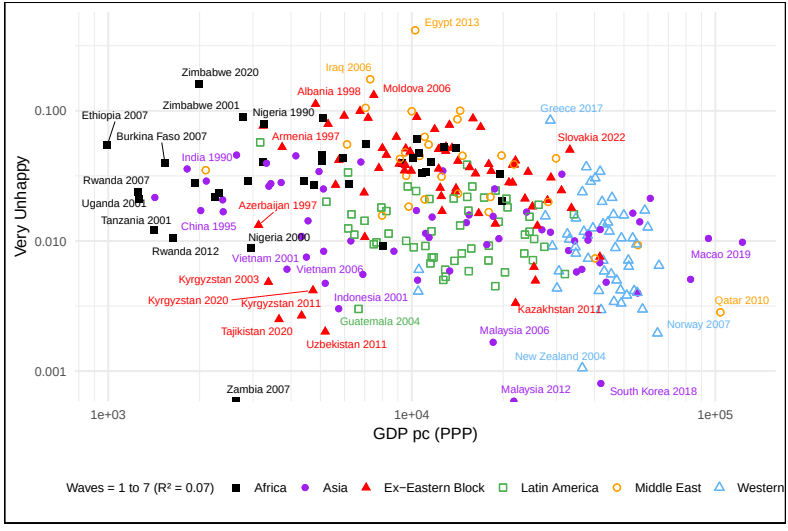

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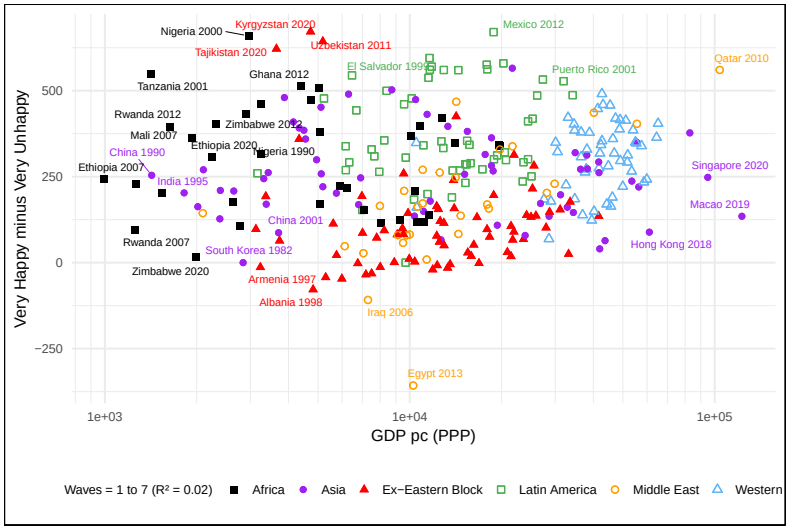
V. Happy – V. Unhappy vs. log GDP p.c. (PPP) — All waves of WVS.



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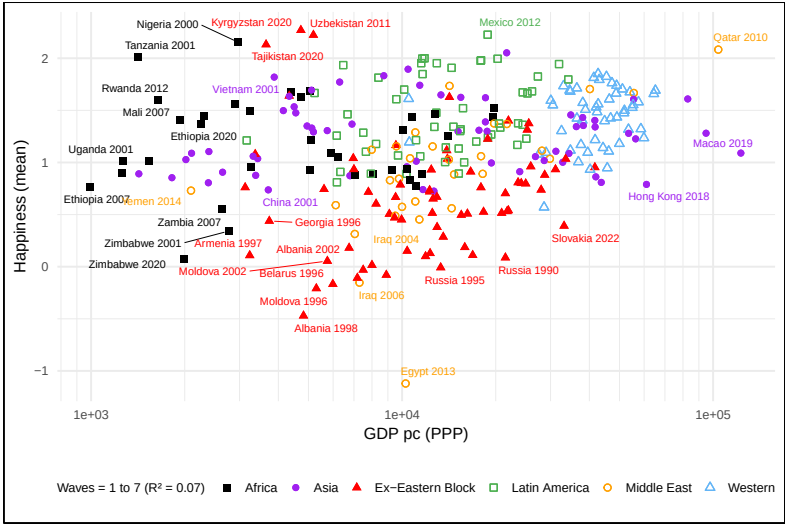
Happiness (mean) vs. log GDP p.c. (PPP) — All waves of WVS.



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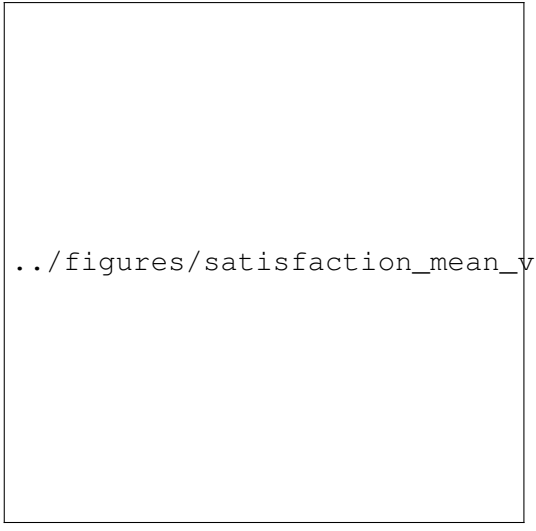
Satisfaction (mean) vs. log GDP p.c. (PPP) — All waves of WVS.



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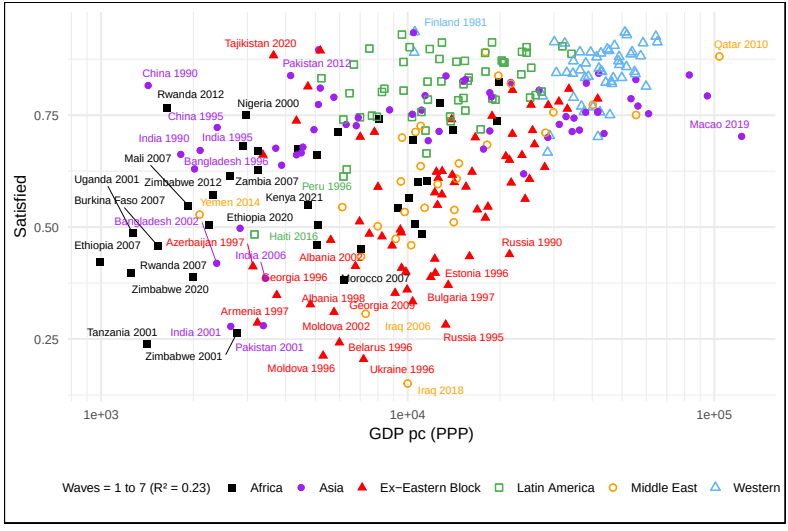

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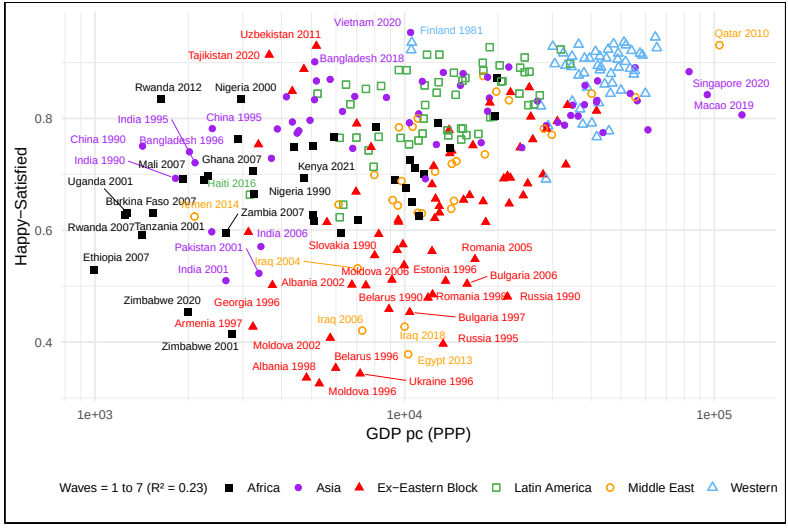
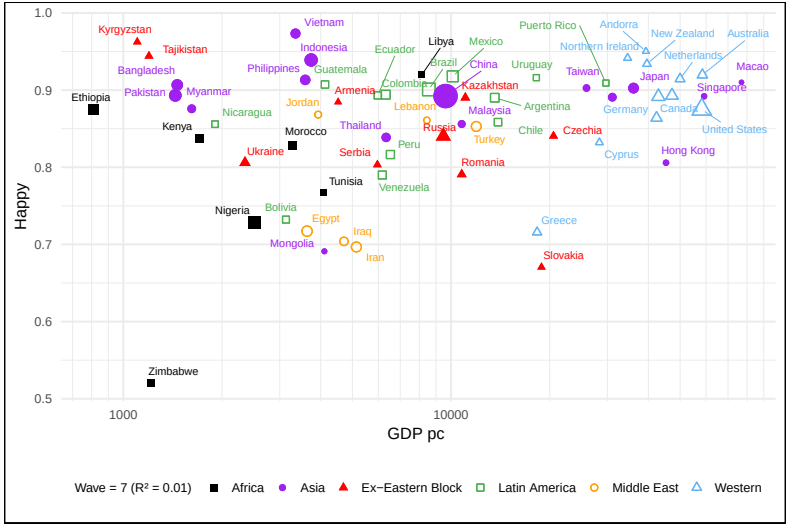
Happy + Satisfied vs. log GDP p.c. (PPP) — All waves of WVS.



Graphical evidence

Happy vs. log DP p.c. (nominal) — Wave 7 (2017-22) of WVS, weighted by population.



Variance explained by GDP p.c.

▸ More results

For different *well-being* and *income* indicators, we compute the R^2 of the regression:

$$well\text{-}being_i = \alpha + \beta\, income_i + u_i$$

Variance explained by GDP p.c.

▸ More results

	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Mea
Very Happy	0.08	0.04	0.06	0.22	0.09	0.24	0.1	0.09	0.18	0.12	0.12
Happy	0.27	0.15	0.16	0.48	0.25	0.19	0.28	0.19	0.13	0.19	0.23
Very Unhappy	0.1	0.1	0.11	0.43	0.19	0.17	0.14	0.15	0.15	0.2	0.17
Satisfied	0.21	0.23	0.2	0.26	0.26	0.38	0.35	0.27	0.13	0.17	0.25
Satisfaction (mean)	0.16	0.17	0.13	0.18	0.22	0.32	0.29	0.2	0.07	0.08	0.18
Happiness (mean)	0.14	0.08	0.06	0.32	0.17	0.22	0.18	0.11	0.12	0.11	0.15
Happy + Satisfied	0.26	0.22	0.2	0.37	0.28	0.33	0.33	0.26	0.13	0.18	0.26
V. Happy – V. Unhappy	0.09	0.05	0.05	0.2	0.1	0.25	0.12	0.08	0.16	0.11	0.12
Mean	0.16	0.13	0.12	0.31	0.2	0.26	0.22	0.17	0.14	0.14	0.18
Max	0.27	0.23	0.2	0.48	0.28	0.38	0.35	0.27	0.18	0.2	0.26
Number of obs.	304	292	304	26	56	40	58	60	64	45	

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For different *well-being* and *income* indicators, we compute the R^2 of the regression:

$$well\text{-}being_i = \alpha + \beta\, income_i + u_i$$

The income indicator that explains best well-being is the **nominal income clustered into 7 groups**.

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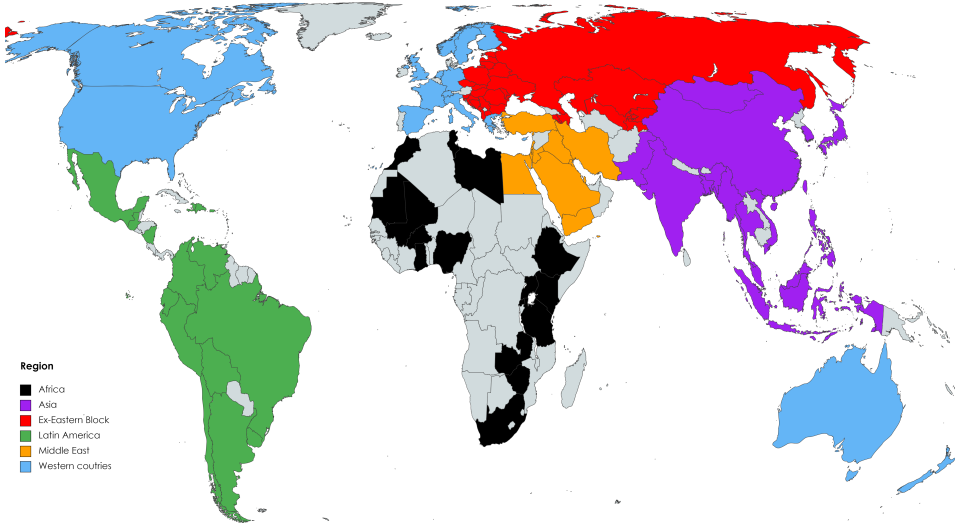
Happiness (mean) is poorly explained by income (8% at best).

What are the happiest countries?

Region vs. GDP per capita as predictor of well-being

Region grouping

WVS countries grouped into six world regions.



Comparing the share of variance explained by income vs. region

For different *well-being* and *income* indicators, we run regressions and compute corresponding R^2:

$$\textit{well-being}_i = \alpha_1 + \beta_1 \, \textit{income}_i + u_i \tag{1}$$

$$\textit{well-being}_i = \alpha_2 + \gamma_2 \, \textit{region}_i + e_i \tag{2}$$

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Comparing the share of variance explained by income vs. region

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$R_3^2 - R_2^2$ is the additional share of variance explained by income, after adding it alongside region.

$s_i = \frac{R_1^2 + (R_3^2 - R_2^2)}{R_3^2}$ is the share of explained variance that is explained by income.

Share of explained variance that is explained by income

▸ More results

	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Mea
Very Happy	0.24	0.12	0.23	0.27	0.12	0.45	0.19	0.29	0.4	0.22	0.25
Happy	0.62	0.41	0.48	0.64	0.37	0.51	0.43	0.52	0.42	0.47	0.49
Very Unhappy	0.34	0.38	0.46	0.52	0.33	0.38	0.34	0.55	0.37	0.42	0.41
Satisfied	0.54	0.42	0.42	0.36	0.32	0.59	0.47	0.54	0.28	0.36	0.43
Satisfaction (mean)	0.36	0.32	0.3	0.25	0.29	0.5	0.4	0.44	0.14	0.15	0.31
Happiness (mean)	0.38	0.23	0.25	0.41	0.23	0.47	0.29	0.36	0.32	0.23	0.32
Happy + Satisfied	0.56	0.42	0.43	0.49	0.36	0.58	0.45	0.54	0.29	0.38	0.45
V. Happy – V. Unhappy	0.27	0.15	0.2	0.26	0.15	0.46	0.21	0.29	0.34	0.2	0.25
Mean	0.41	0.31	0.35	0.4	0.27	0.49	0.35	0.44	0.32	0.3	0.36
Max	0.62	0.42	0.48	0.64	0.37	0.59	0.47	0.55	0.42	0.47	0.49
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Income is never a better predictor than region ($s_i < 50\%$)

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For the best-predicting income indicator, income explains 22% of the explained variance for **Happiness** and 34% for **Satisfaction** (31% on average over all well-being indicators).

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For the best-predicting income indicator, income explains 22% of the explained variance for **Happiness** and 34% for **Satisfaction** (31% on average over all well-being indicators).

Region is a better predictor than region in 95% of alternative specifications: looking at each wave separately, weighting countries by population, dropping pandemic years...
(including 86% of 88 specifications involving the best-predicting income variable) ▸ More results

Conclusion

Robustness checks

Variance explained by PPP income cluster (k = 7)

Go back

Happiness variable	All waves	Only selected waves							
	Pop. weight	1 & 2	3	4	5	6	7	Mean	Max
Very Happy	0.05	0.24	0.07	0.15	0.07	0.2	0.25	0.14	0.25
Happy	0.23	0.22	0.22	0.23	0.23	0.21	0.13	0.21	0.23
Very Unhappy	0.06	0.22	0.15	0.16	0.18	0.12	0.18	0.15	0.22
Satisfied	0.23	0.18	0.23	0.36	0.29	0.22	0.16	0.24	0.36
Satisfaction (mean)	0.16	0.17	0.18	0.33	0.21	0.19	0.13	0.2	0.33
Happiness (mean)	0.11	0.18	0.13	0.2	0.16	0.2	0.15	0.16	0.2
Happy + Satisfied	0.28	0.21	0.25	0.32	0.28	0.24	0.17	0.25	0.32
V. Happy – V. Unhappy	0.06	0.15	0.08	0.16	0.09	0.2	0.21	0.14	0.21
Mean	0.15	0.2	0.16	0.24	0.19	0.2	0.17	0.19	0.24
Max	0.28	0.24	0.25	0.36	0.29	0.24	0.25	0.25	0.36
Number of obs.	304	26	56	40	58	60	64		

Share of explained variance that is explained by PPP income cluster (k = 7)

Go back

Happiness variable	All waves	Only selected waves							
	Pop. weight	1 & 2	3	4	5	6	7	Mean	Max
Very Happy	0.16	0.29	0.09	0.31	0.13	0.48	0.51	0.28	0.51
Happy	0.53	0.33	0.33	0.53	0.36	0.51	0.47	0.44	0.53
Very Unhappy	0.2	0.26	0.27	0.36	0.33	0.46	0.43	0.33	0.46
Satisfied	0.54	0.25	0.28	0.58	0.4	0.46	0.32	0.4	0.58
Satisfaction (mean)	0.34	0.23	0.23	0.5	0.31	0.4	0.24	0.32	0.5
Happiness (mean)	0.31	0.24	0.18	0.44	0.25	0.47	0.4	0.32	0.47
Happy + Satisfied	0.54	0.27	0.32	0.57	0.39	0.48	0.36	0.42	0.57
V. Happy – V. Unhappy	0.2	0.2	0.11	0.34	0.16	0.47	0.45	0.28	0.47
Mean	0.35	0.26	0.23	0.45	0.29	0.47	0.4	0.35	0.47
Max	0.54	0.33	0.33	0.58	0.4	0.51	0.51	0.44	0.58
Number of obs.	304	26	56	40	58	60	64		