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

Adrien Fabre (CNRS, CIRED)

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Introduction

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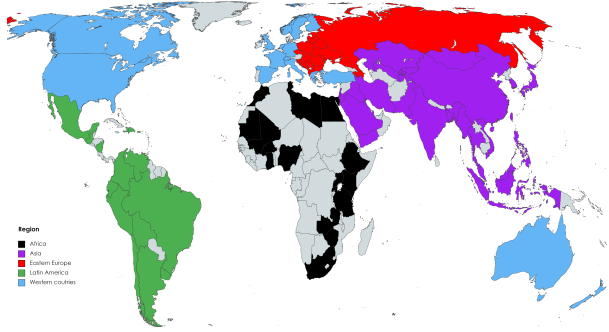
Another simple variable, the country's (macro) region, is a better predictor of national well-being.

Design

Data

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



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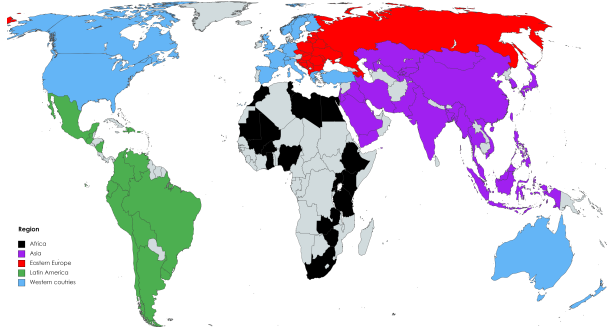

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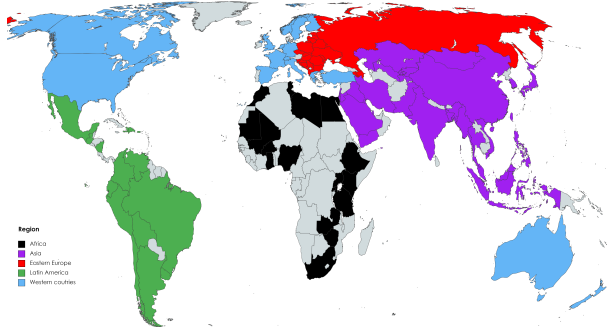

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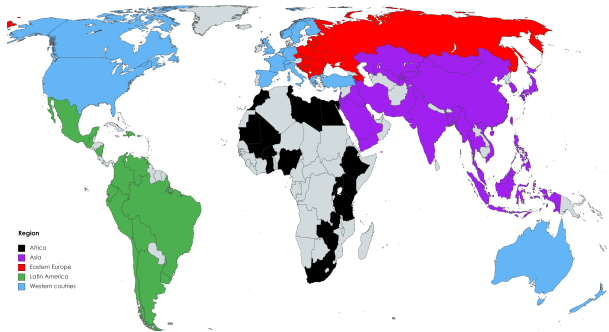
Very happy; *Quite happy*; *Not very happy*; *Not at all happy*; PNR



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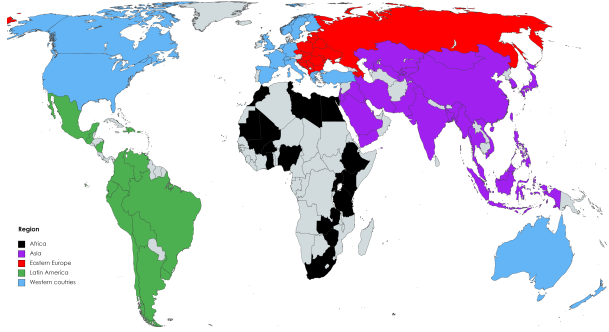
Satisfaction: "All things considered, how satisfied are you with your life as a whole these days?"
1-Completely dissatisfied – *10-Completeley satisfied*; PNR



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Bond & Lang (19) show that no single indicator can reliably identify two group's relative well-being, justifying reliance on several indicators.

How we measure income

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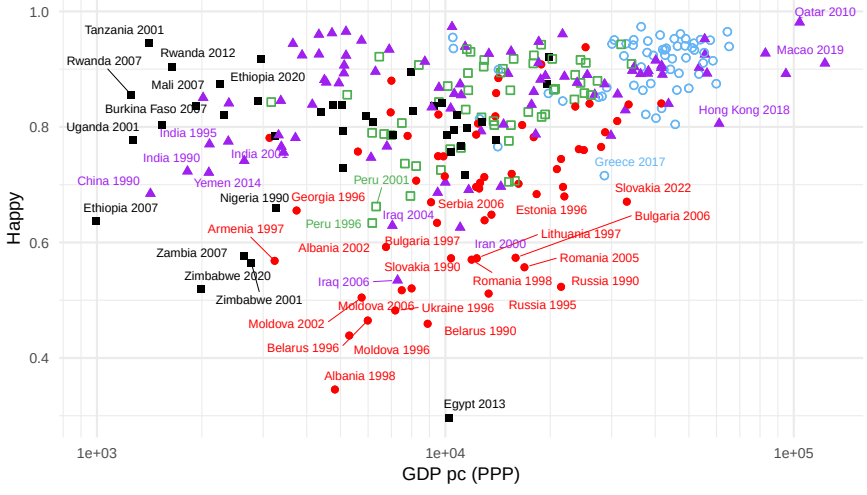
- For robustness, we also run our analyses without this imputation (excluding countries with missing GDP data).

National well-being and income

Graphical evidence

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



Waves = 1 to 7 (R^2 = 0.17) ■ Africa ▲ Asia ● Eastern Europe □ Latin America ○ Western

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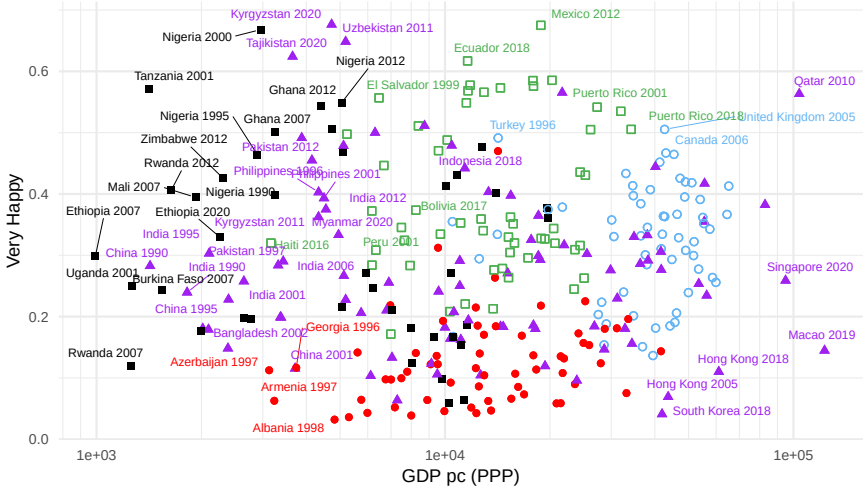
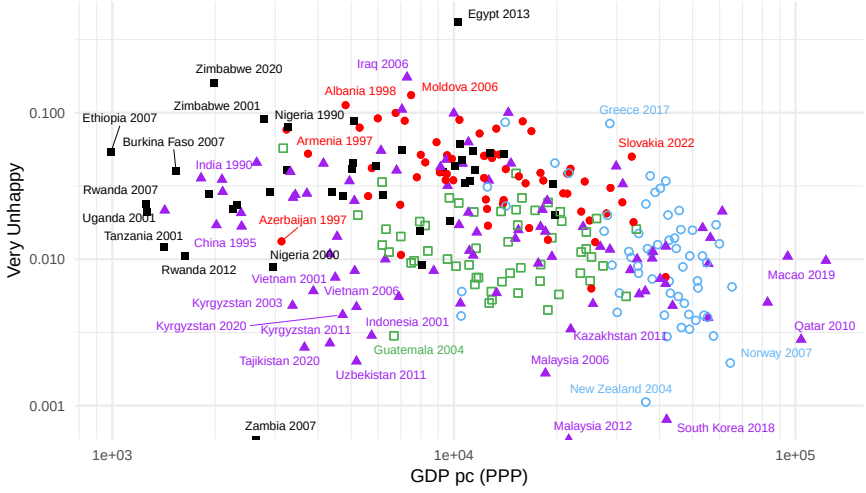


Waves = 1 to 7 (R^2 = 0.01) ■ Africa ▲ Asia ● Eastern Europe □ Latin America ○ Western

Graphical evidence

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



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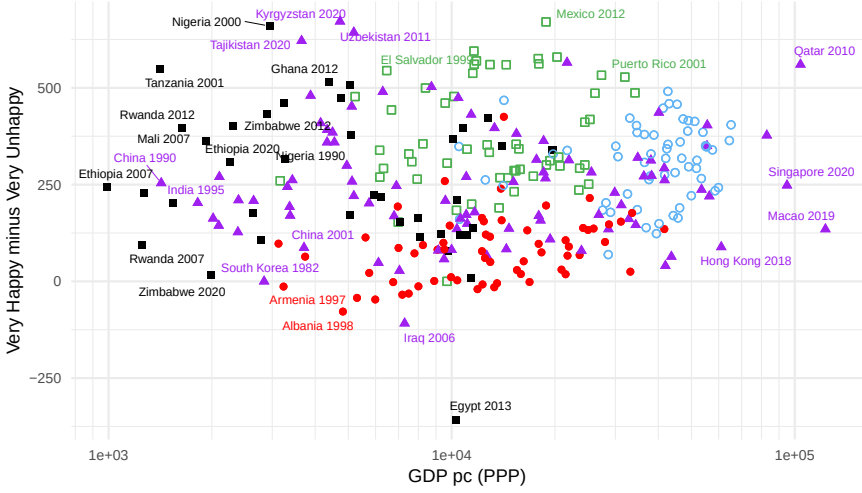
V. Happy – V. Unhappy vs. log GDP p.c. (PPP) — All waves of WVS.



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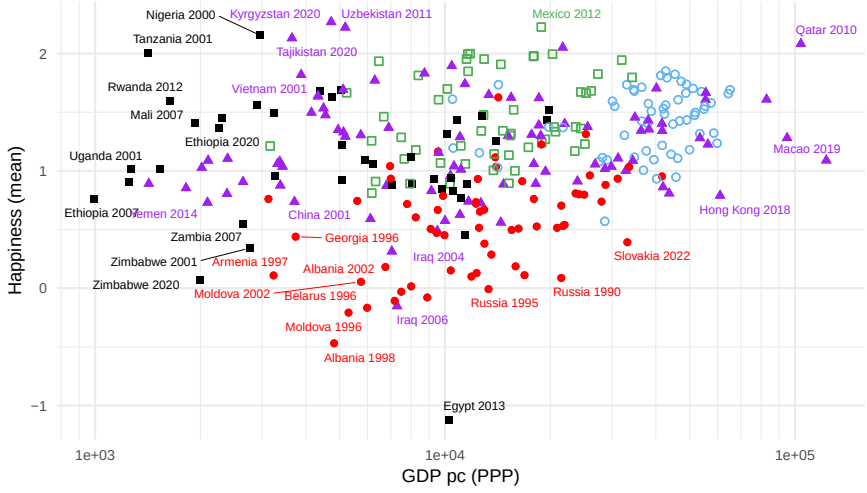
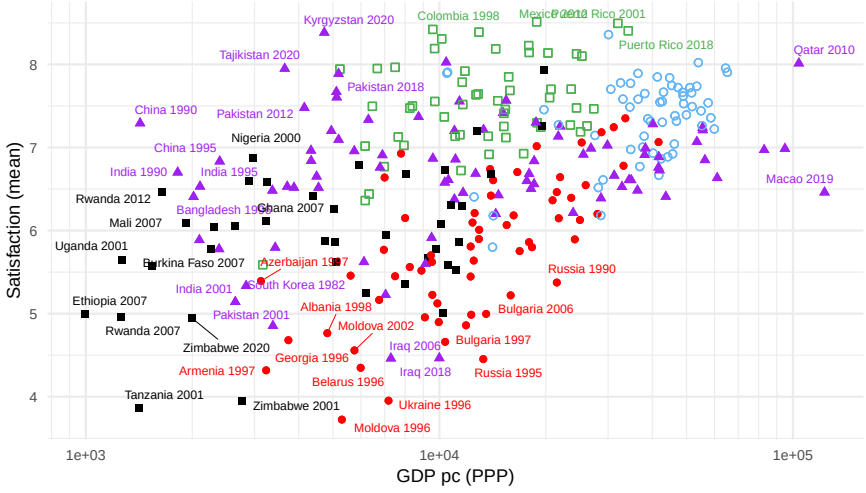
Happiness (mean) vs. log GDP p.c. (PPP) — All waves of WVS.



Waves = 1 to 7 (R^2 = 0.07) ■ Africa ▲ Asia ● Eastern Europe □ Latin America ○ Western

Graphical evidence

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



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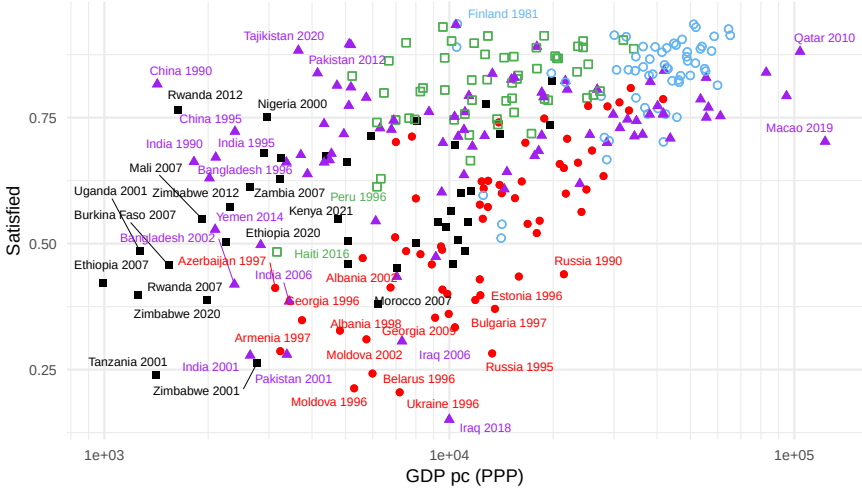
Satisfied vs. log GDP p.c. (PPP) — All waves of WVS.



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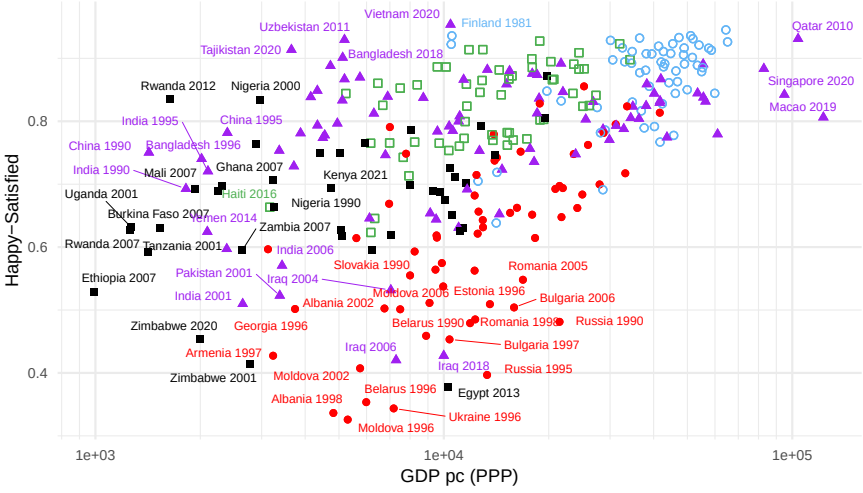
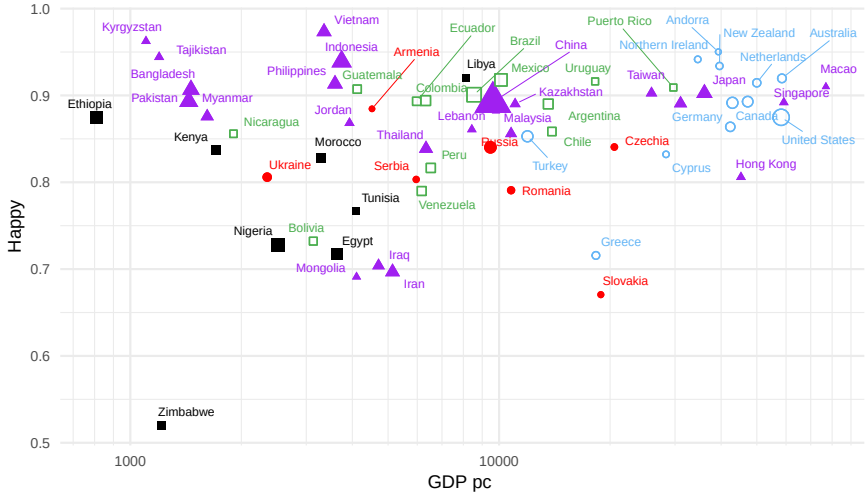
Happy + Satisfied vs. log GDP p.c. (PPP) — All waves of WVS.



Waves = 1 to 7 (R^2 = 0.23) ■ Africa ▲ Asia ● Eastern Europe □ Latin America ○ Western

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:

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

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Happiness variable	log GDP p.c.		Income cluster					Mean	Max
	PPP	nominal	sextile PPP	k = 5 PPP	k = 6 PPP	k = 7 PPP	k = 7 nominal		
Very Happy	0	0	0.04	0.01	0.06	0.03	0.03	0.02	0.06
Happy	0.1	0.12	0.14	0.13	0.15	0.14	0.16	0.13	0.16
Very Unhappy	0.04	0.06	0.07	0.07	0.08	0.08	0.11	0.07	0.11
Satisfied	0.2	0.24	0.2	0.21	0.2	0.2	0.24	0.21	0.24
Satisfaction (mean)	0.14	0.17	0.13	0.15	0.14	0.14	0.17	0.15	0.17
Happiness (mean)	0.03	0.04	0.07	0.06	0.09	0.07	0.07	0.06	0.09
Happy + Satisfied	0.18	0.22	0.19	0.2	0.2	0.19	0.23	0.2	0.23
V. Happy – V. Unhappy	0	0.01	0.04	0.02	0.06	0.03	0.04	0.03	0.06
Mean	0.09	0.11	0.11	0.1	0.12	0.11	0.13	0.11	0.13
Max	0.2	0.24	0.2	0.21	0.2	0.2	0.24	0.21	0.24
Number of obs.	304	304	304	304	304	304	304		

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

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Counting the occurrences of countries for each wave–indicator (including all waves combined), Switzerland is the happiest (10 occurrences) followed by Mexico (9) and Kyrgyzstan (6).

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The happiest countries are Western (24), in Latin America (19), Asia (16) or Africa (6).

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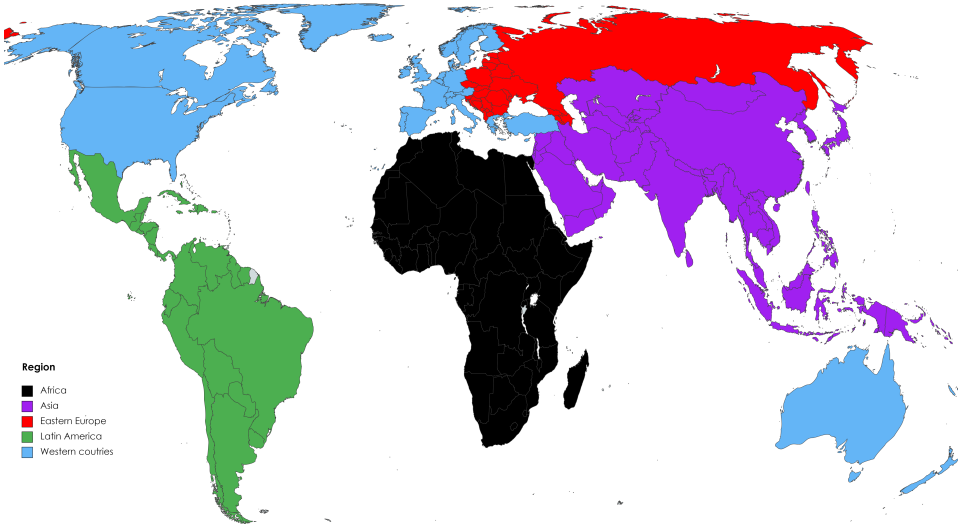
Blanchflower & Bryson (2023) show that on respective positive/negative affects, the happiest state is: Bhutan (well-rested), Denmark (satisfaction), Finland (anger), Hawaï (enjoy), Paraguay (smile), Taiwan (sadness), Uzbekistan (worry), Vietnam (pain).

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

Region grouping

WVS countries grouped into the five UN regional groups.



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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This follows the LMG methodoly (Lindeman, Merenda & Gold, 1980; Grömping, 2007).

Share of explained variance that is explained by income

More results

Happiness variable	log GDP p.c.		Income cluster						
	PPP	nominal	sextile PPP	k = 5 PPP	k = 6 PPP	k = 7 PPP	k = 7 nominal	Mean	Max
Very Happy	0	0.01	0.11	0.03	0.14	0.07	0.08	0.06	0.14
Happy	0.24	0.3	0.32	0.31	0.34	0.32	0.37	0.32	0.37
Very Unhappy	0.24	0.32	0.35	0.36	0.37	0.36	0.48	0.35	0.48
Satisfied	0.35	0.42	0.35	0.36	0.36	0.36	0.42	0.37	0.42
Satisfaction (mean)	0.26	0.31	0.24	0.26	0.25	0.26	0.32	0.27	0.32
Happiness (mean)	0.08	0.12	0.18	0.14	0.21	0.16	0.19	0.15	0.21
Happy + Satisfied	0.32	0.39	0.34	0.35	0.35	0.35	0.41	0.36	0.41
V. Happy – V. Unhappy	0.01	0.03	0.12	0.05	0.15	0.09	0.1	0.08	0.15
Mean	0.19	0.23	0.25	0.23	0.27	0.24	0.3	0.25	0.3
Max	0.35	0.42	0.35	0.36	0.37	0.36	0.48	0.37	0.48
Number of obs.	304	304	304	304	304	304	304		

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From the previous table, income is never a better predictor than region ($s_i < 50\%$)

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Region is a better predictor than region in 94% 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

Take away and future research

National well-being is more correlated with the world region than with the GDP p.c.

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Despite evidence against translation issues (Diener & Suh, 2000),
We should check whether emotions are better predicted by region than income.

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	0.25	0.06	0.17	0.06	0.12	0.21	0.13	0.25
Happy	0.21	0.19	0.24	0.23	0.22	0.17	0.06	0.19	0.24
Very Unhappy	0.04	0.2	0.15	0.19	0.16	0.1	0.08	0.13	0.2
Satisfied	0.23	0.2	0.22	0.35	0.26	0.23	0.1	0.23	0.35
Satisfaction (mean)	0.16	0.23	0.17	0.32	0.2	0.21	0.05	0.19	0.32
Happiness (mean)	0.09	0.18	0.13	0.22	0.15	0.14	0.07	0.14	0.22
Happy + Satisfied	0.27	0.2	0.25	0.33	0.27	0.21	0.09	0.23	0.33
V. Happy – V. Unhappy	0.05	0.16	0.07	0.19	0.08	0.12	0.16	0.12	0.19
Mean	0.14	0.2	0.16	0.25	0.18	0.16	0.1	0.17	0.25
Max	0.27	0.25	0.25	0.35	0.27	0.23	0.21	0.23	0.35
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	0.19	0.3	0.08	0.36	0.13	0.37	0.47	0.27	0.47
Happy	0.54	0.33	0.36	0.58	0.39	0.48	0.26	0.42	0.58
Very Unhappy	0.25	0.26	0.28	0.57	0.44	0.43	0.34	0.37	0.57
Satisfied	0.57	0.35	0.28	0.56	0.38	0.42	0.25	0.4	0.57
Satisfaction (mean)	0.36	0.37	0.22	0.47	0.3	0.38	0.12	0.32	0.47
Happiness (mean)	0.31	0.25	0.18	0.46	0.25	0.43	0.23	0.3	0.46
Happy + Satisfied	0.57	0.32	0.32	0.57	0.39	0.42	0.24	0.41	0.57
V. Happy – V. Unhappy	0.22	0.22	0.1	0.38	0.16	0.41	0.38	0.27	0.41
Mean	0.38	0.3	0.23	0.5	0.3	0.42	0.29	0.34	0.5
Max	0.57	0.37	0.36	0.58	0.44	0.48	0.47	0.42	0.58
Number of obs.	304	26	56	40	58	60	64		