

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

**Adrien Fabre** (CNRS, CIRED)

*January 2024*

# Introduction

# What makes a country happy?

Which country is the happiest?

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## HAPPIEST COUNTRIES IN THE WORLD 😊

- |    |   |                          |
|----|---|--------------------------|
| 1  |    | Finland<br>7.769         |
| 2  |    | Denmark<br>7.600         |
| 3  |    | Norway<br>7.554          |
| 4  |    | Iceland<br>7.494         |
| 5  |    | The Netherlands<br>7.488 |
| 6  |  | Switzerland<br>7.480     |
| 7  |  | Sweden<br>7.343          |
| 8  |  | New Zealand<br>7.307     |
| 9  |  | Canada<br>7.278          |
| 10 |  | Austria<br>7.246         |

Source: World Happiness Report 2019

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The answer is often in Scandinavia.

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



# Literature

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Inglehart & Klingemann (2000)

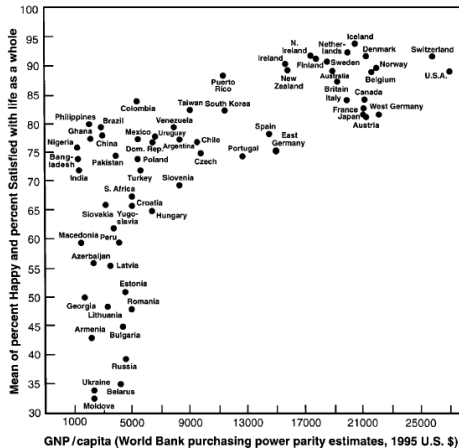


Figure 7.2

Subjective well-being by level of economic development ( $R = 0.70$ ,  $N = 65$ ,  $p < 0.0000$ ).  
Source: World Values Surveys; GNP/capita purchasing power estimates from World Bank, World Development Report, 1997.

# Literature

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We challenge this finding.

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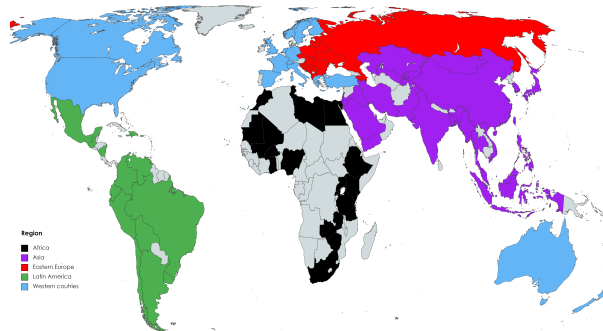
Another simple variable, the country's (macro) region, is a better predictor of national well-being.



# Design

# Data

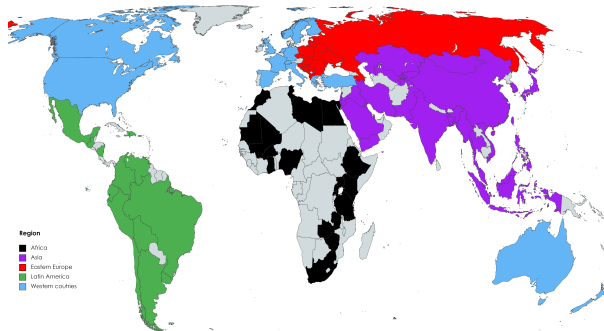
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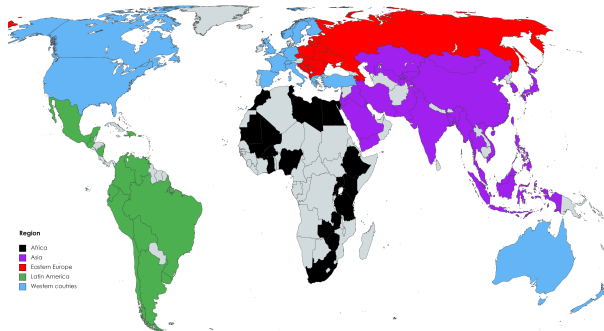


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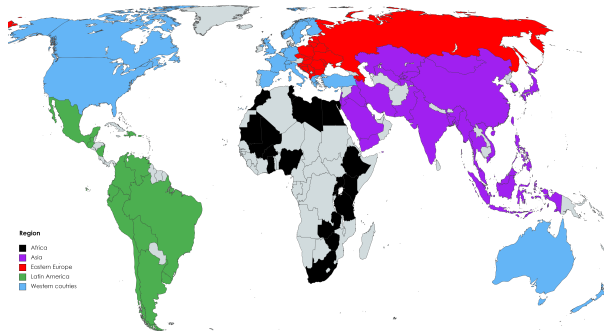
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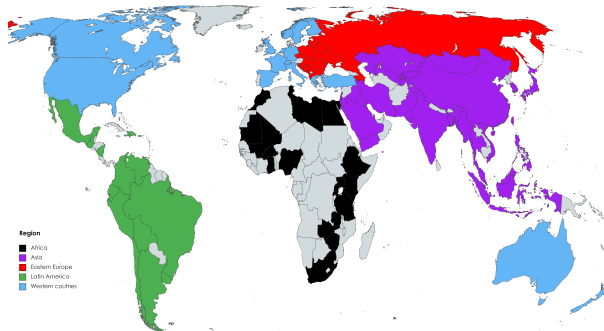
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**Happiness**: “Taking all things together, would you say you are:”

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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



## What is national well-being?

With the two well-being questions, **we can define various** national **indicators** (all weighted using survey weights, all excluding 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.

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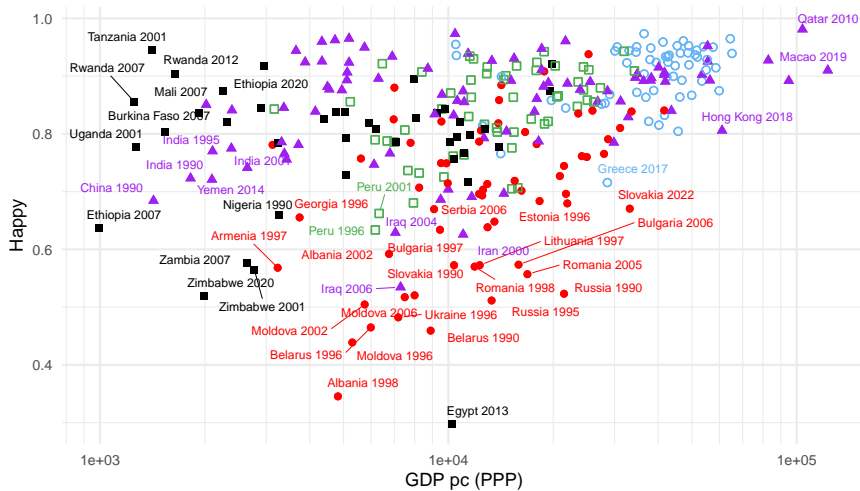
For robustness, we also run our analyses without this imputation (excluding countries with missing GDP data).

# National well-being and income



# Graphical evidence

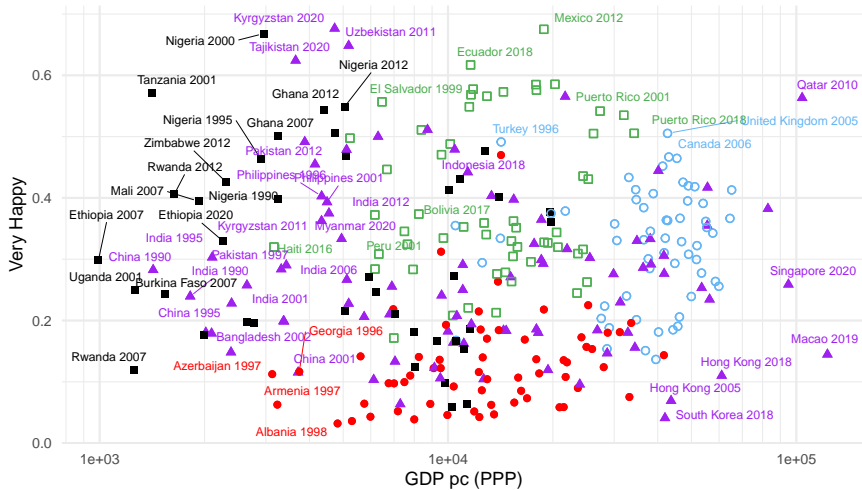
Happy vs. log GDP p.c. (PPP) — All waves of WVS.



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

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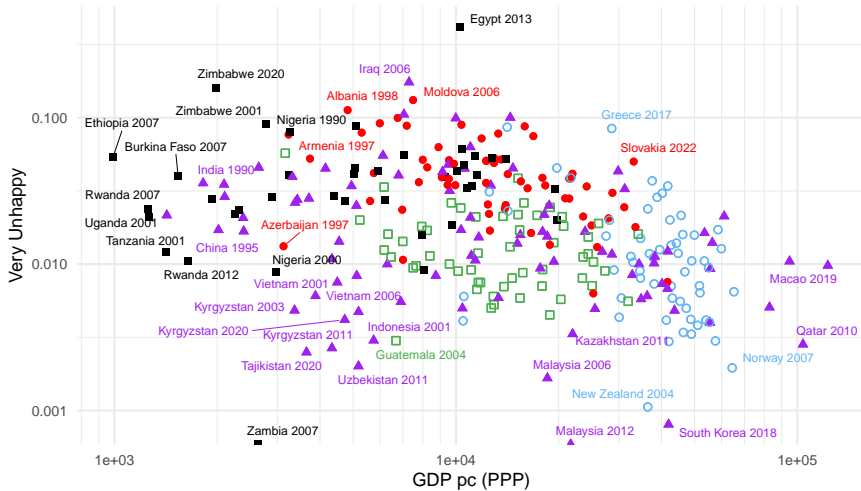
Very Happy vs. log GDP p.c. (PPP) — All waves of WVS.



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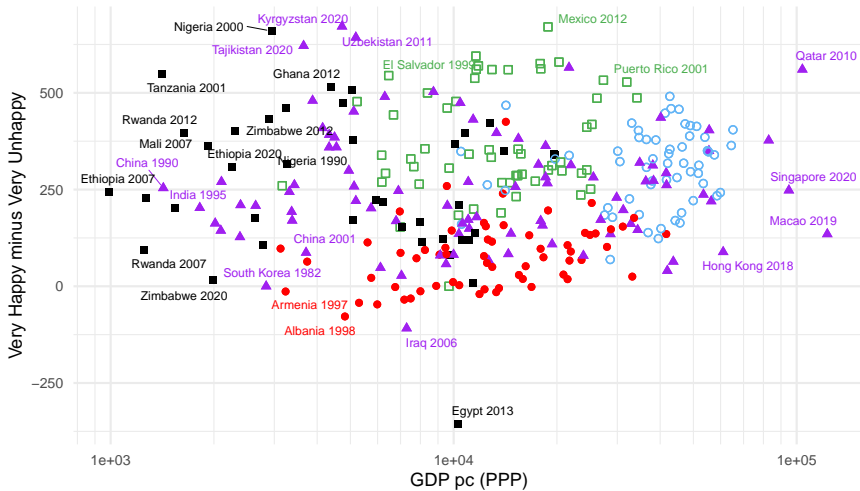
Very Unhappy vs. log GDP p.c. (PPP) — All waves of WVS.



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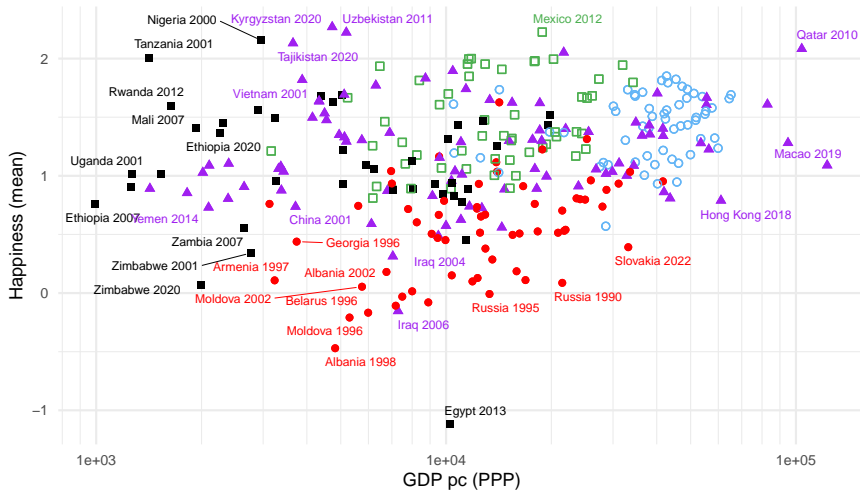
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**V. Happy – V. Unhappy** vs. **log GDP p.c. (PPP)** — All waves of WVS.



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



Waves = 1 to 7 ( $R^2 = 0.07$ )

■ Africa

▲ Asia

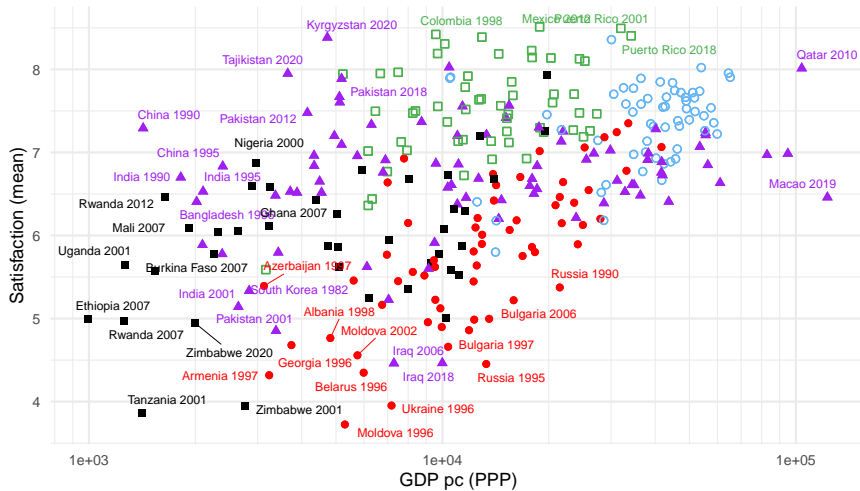
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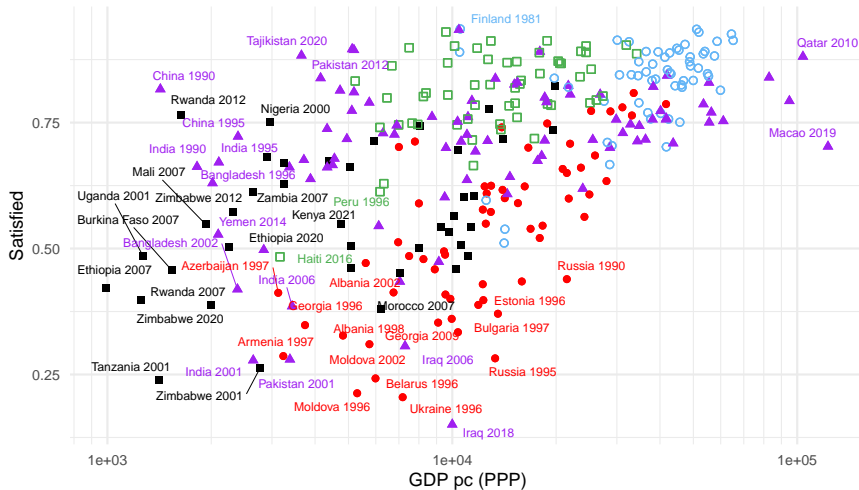
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Satisfaction (mean) vs. log GDP p.c. (PPP) — All waves of WVS.



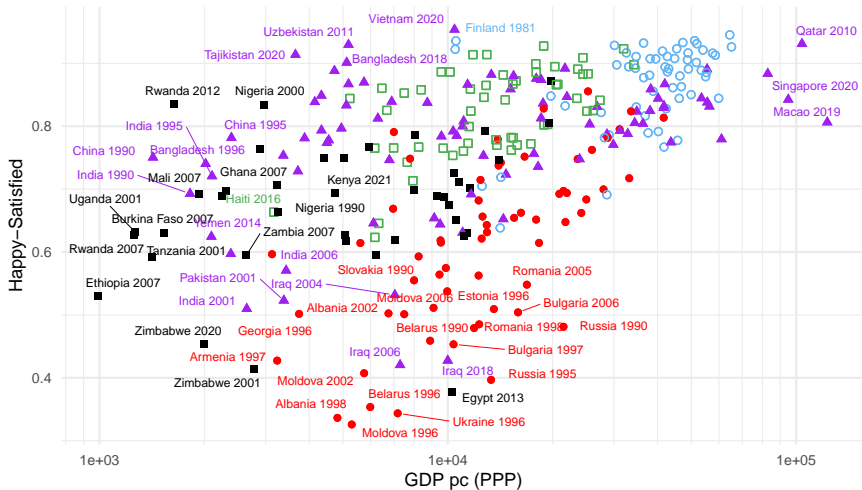
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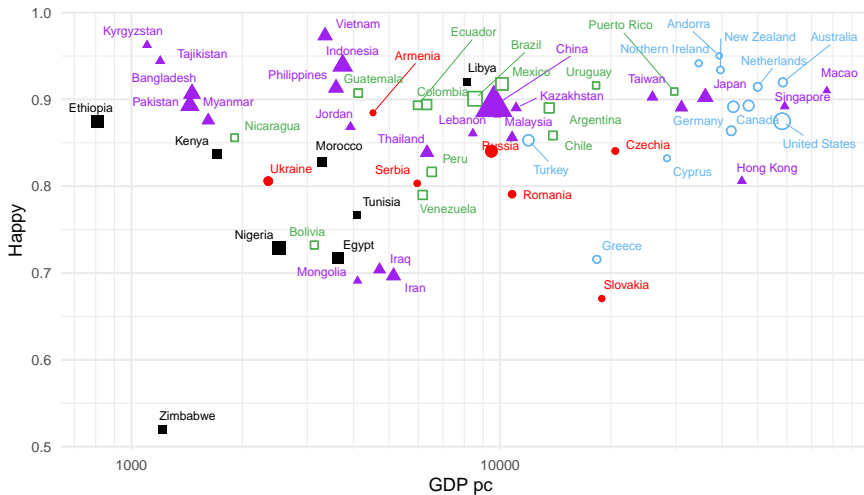
Happy + Satisfied vs. log GDP p.c. (PPP) — All waves of WVS.





# Graphical evidence

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



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

## Variance explained by GDP p.c. [► More results](#)

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

$$well-being_i = \alpha + \beta income_i + u_i$$

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Happiness variable	log GDP p.c.		sextile PPP	Income cluster				Mean	Max
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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
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**Happiness (mean)** is poorly explained by income (8% at best).



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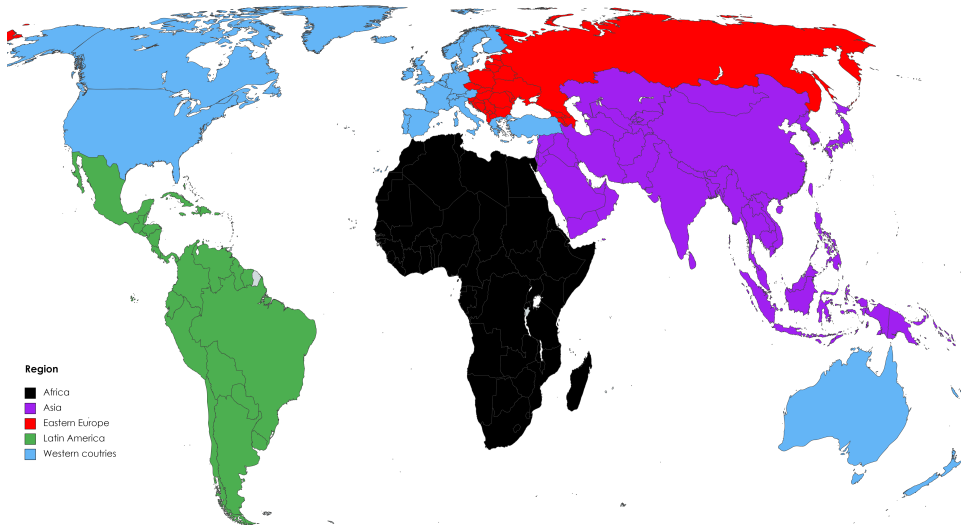
The happiest countries are Western (24), in Latin America (19), Asia (16) or Africa (6).

Blanchflower & Bryson (2023) show that on respective positive/negative affects, the happiest state is: Bhutan (well-rested), Denmark (satisfaction), Finland (anger), Hawaiï (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.



# Share of explained variance that is explained by income [► More results](#)

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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
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## Region is a better predictor of national well-being than income

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For the best-predicting income indicator, **income explains 30% of the explained variance**, on average over all well-being indicators

This indicator explains 19% of the explained variance for **Happiness** and 32% for **Satisfaction**.

## Region is a better predictor of national well-being than income

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

For the best-predicting income indicator, **income explains 30% of the explained variance**, on average over all well-being indicators

This indicator explains 19% of the explained variance for **Happiness** and 32% for **Satisfaction**.

**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**

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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		



