



COST OF LIVING PREDICTION FOR DIGITAL NOMADS

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BACKGROUND

- Digital nomads leverage IT to work from anywhere (with Wi-Fi)
- Rise in remote work inspiring next generation of world travelers
- Governments now issuing visas to lure IT workers to their countries



QUESTIONS

- What's the **cost of living** at my intended destination? (=city)
 - Ex. How much should I budget to live in [[Medellin \(Colombia\)](#), [Seoul \(Korea\)](#), ...]?
 - Corollaries: How much should I expect to spend on rent / food / transportation / etc.
- Which parts of my budget are more flexible, esp. given my conditions?
 - Ex. What's the cheapest country in South America with a sub-tropical climate?
 - Corollaries: What are my options for cities that meet my set of conditions?

DATA SOURCES

- **City-level price data:** Expatistan
 - Cost of living: “Single person estimated monthly costs” (target)
 - Rent: “Monthly rent for a 45 m² (480 sqft) furnished studio in normal area”
 - Food: “Basic dinner out for two in neighborhood pub”
 - Business expenses: “Cappuccino in expat area of the city”

etc.

Cost of living in Kabul, Afghanistan

List of prices in Kabul
Current as of Sep 2021.

Change the currency:

AFN - Afghani (Afghani)

Exchange rate: 0.01137 USD / AFN

↪ Change back to show only in AFN (Afghani)

Summary of cost of living in Kabul

Family of four estimated monthly costs:

\$1,427 (125,564 Afghani)

Single person estimated monthly costs:

\$614 (54,044 Afghani)

WARNING! These estimates are currently based on just a small amount of data. They provide a decent starting assumption, but they are not yet completely reliable.

Food

Update
prices

AFN USD

	Basic lunchtime menu (including a drink) in the business district	385 Afghani	(\$4.37)
	Combo meal in fast food restaurant (big mac meal or similar)	281 Afghani	(\$3.19)
	500 gr (1 lb.) of boneless chicken breast	165 Afghani	(\$1.87)
	1 liter (1 qt.) of whole fat milk	64 Afghani	(\$0.72)
	12 eggs, large	94 Afghani	(\$1.07)

Did you know that ...

Cost of living in Kabul is 62% cheaper than in Phoenix, Arizona?

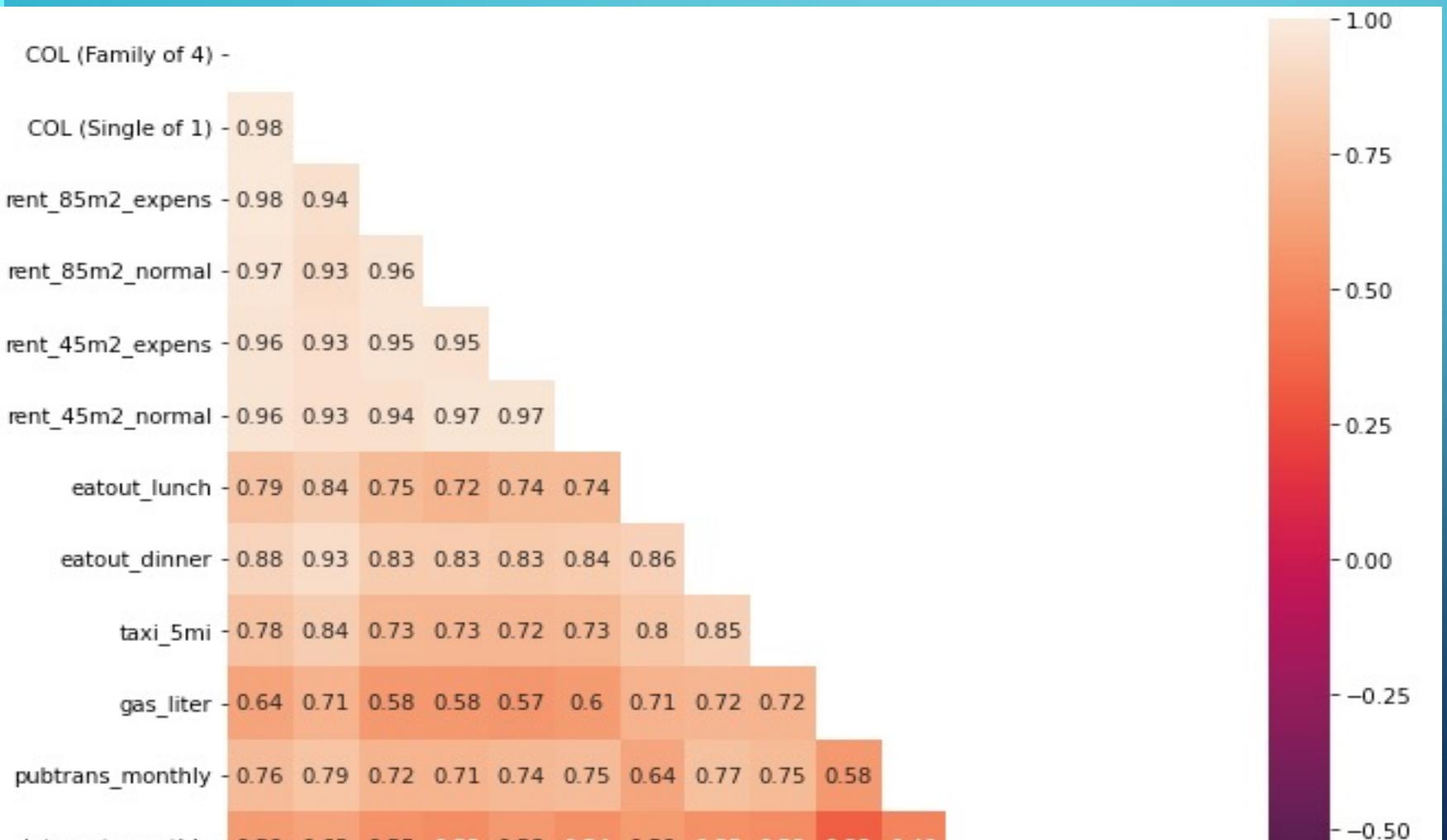
Cost of living in Tashkent is 13% cheaper than in Kabul?

Cost of living in Karachi is 14% cheaper than in Kabul?

Cost of living in Kabul is 64% cheaper than in Brisbane?

RESULTS

- Decision #1: Don't use scraped prices to predict COL



Future Direction:
Predict prices of
individual
goods/services?

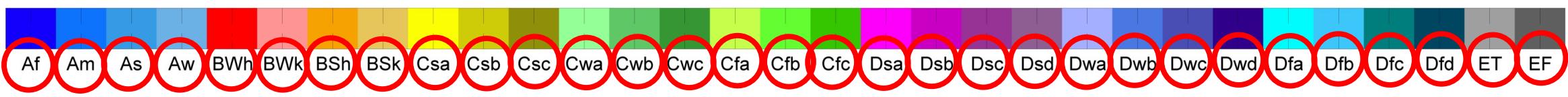
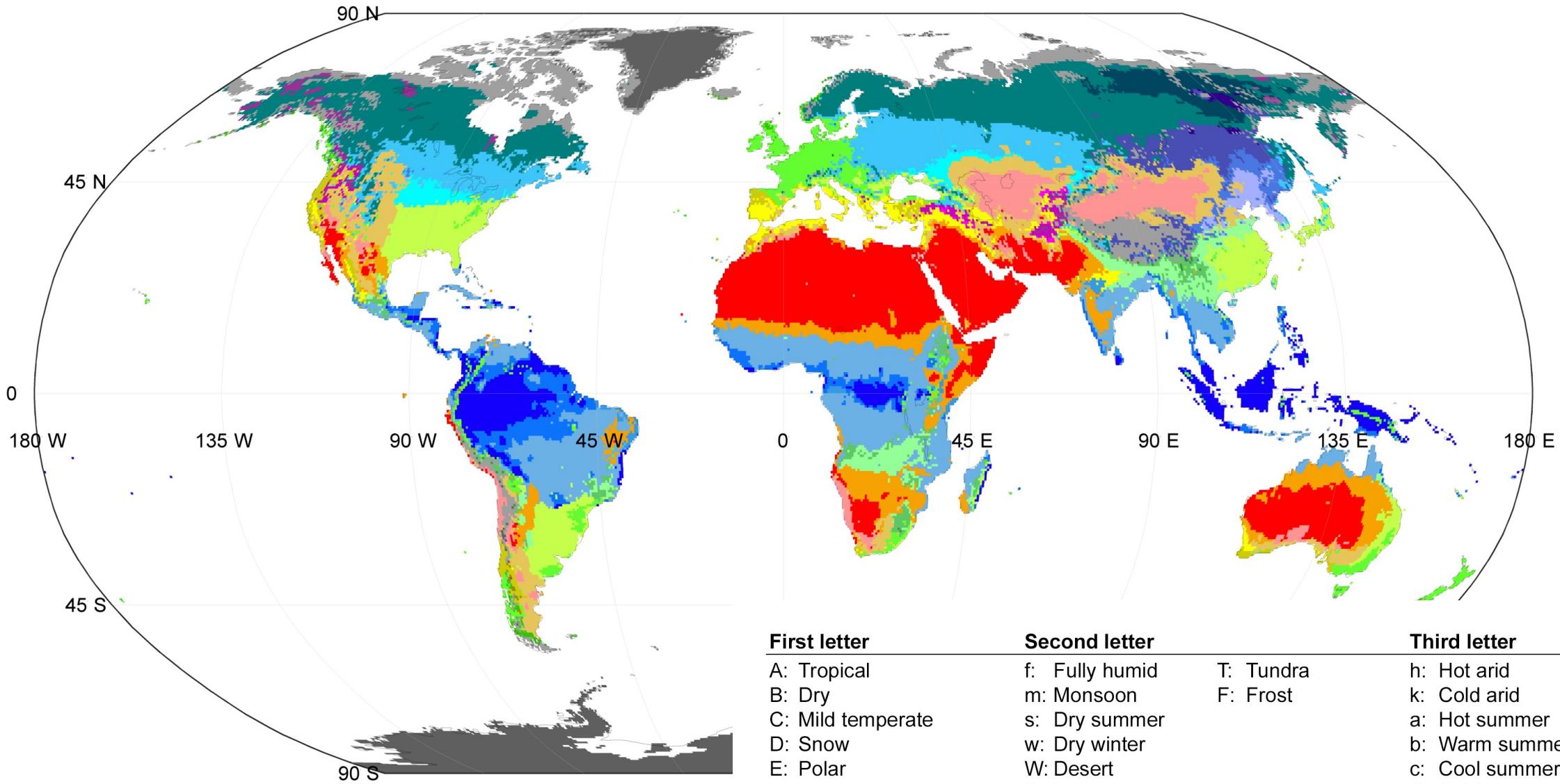
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- **City-level feature data:** SimpleMaps.com, “Basic” dataset
 - Primary: Country, Population, Lat, Lng, Capital*
 - Secondary: Climate* (derived from hanschen.org/koppen)
- **Country-level feature data:** Wikipedia
 - GDP per capita (nominal, PPP), Human Development Index (HDI)
 - Region*, Subregion*



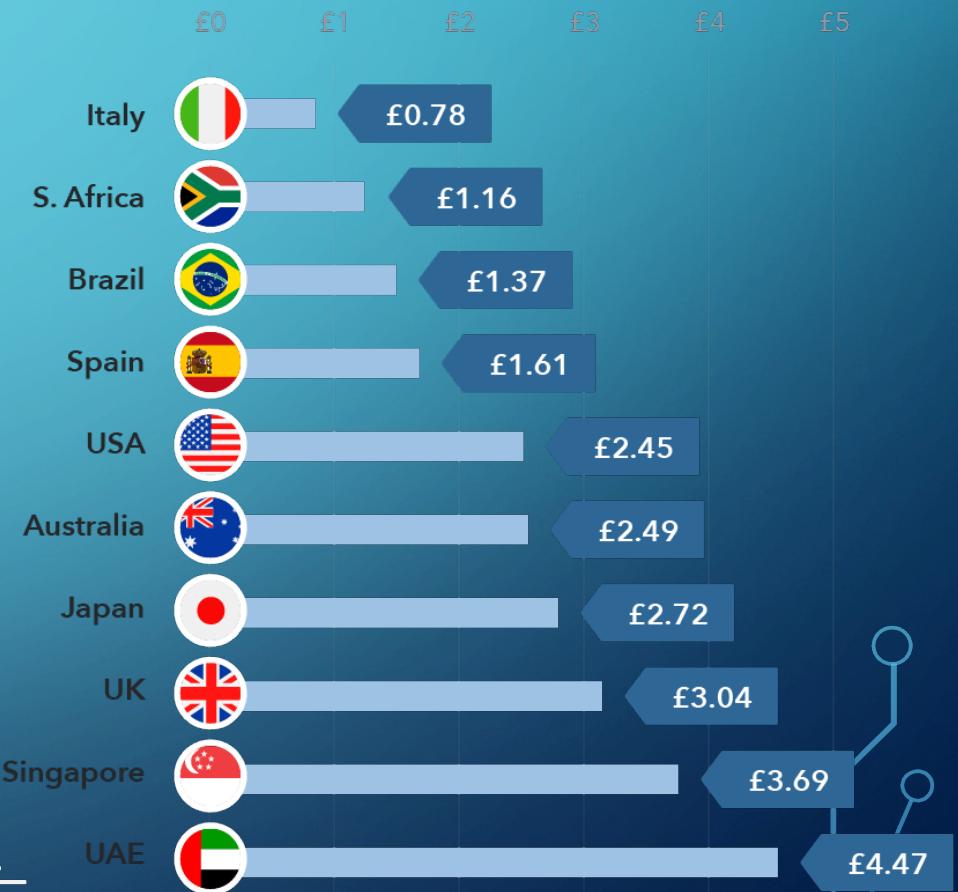
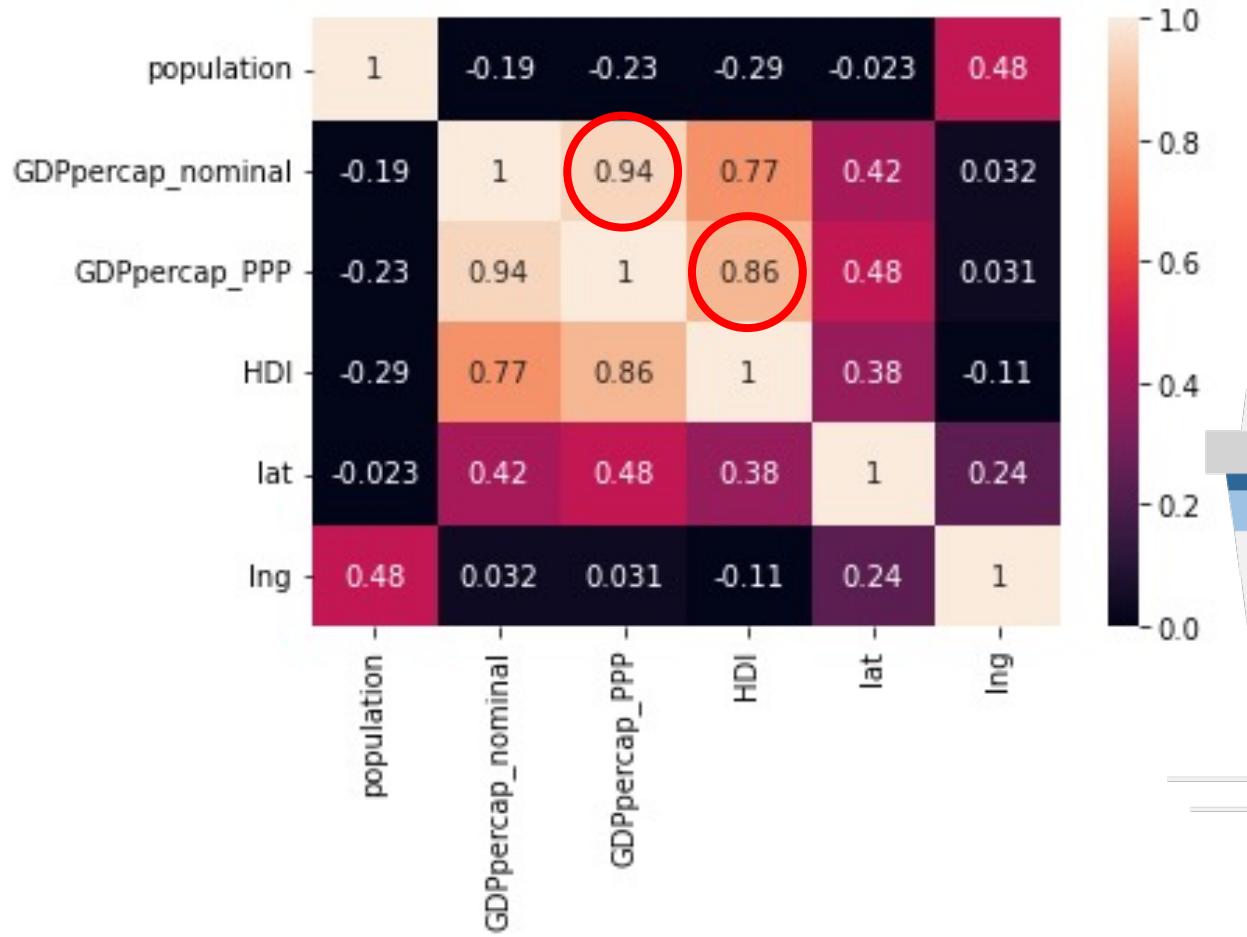
~41,000
cities!

World map of Köppen climate classification for 1901–2010



RESULTS

- Decision #2: Discard GDP per capita (PPP)



RESULTS

Model #1 (baseline)

- GDP per capita (nominal)
- HDI
- GDP per capita (PPP)*
- Longitude
- *Population*
- *Latitude*

$R^2_{\text{train}} = 0.715$ (adj. 0.712)

$R^2_{\text{val}} = 0.648$

$R^2_{\text{test}} = 0.685$

Model #2 (M1 + dummies)

- Capital
- Subregion
- Region
- Climate

$R^2_{\text{train}} = 0.818$ (adj. 0.809)

$R^2_{\text{val}} = 0.865$

$R^2_{\text{test}} = 0.788$

STRATEGY

Save for national capitals...	+\$380
...in regional capitals	-\$120
Save for the Caribbean...	+\$1038
...in South America	-\$870
Save for Mediterranean hot summer climates (Csa)...	+\$190
...in warm summer continental/hemiboreal climates (Dfb)	-\$300

FUTURE DIRECTIONS

- Repeat analysis for different prices (target variables)
 - Is rent influenced by the same features as COL? Is food?
- Further subdivide climate, combine with seasonal weather patterns
 - Relevant to human migration and climate change
- Subdivide by (sub)region and see if trends persist
 - Could climate be much more predictive of COL in some (sub)regions than others?

