The Geography of Happiness

Spatial heterogeneity in micro-level determinants of well-being

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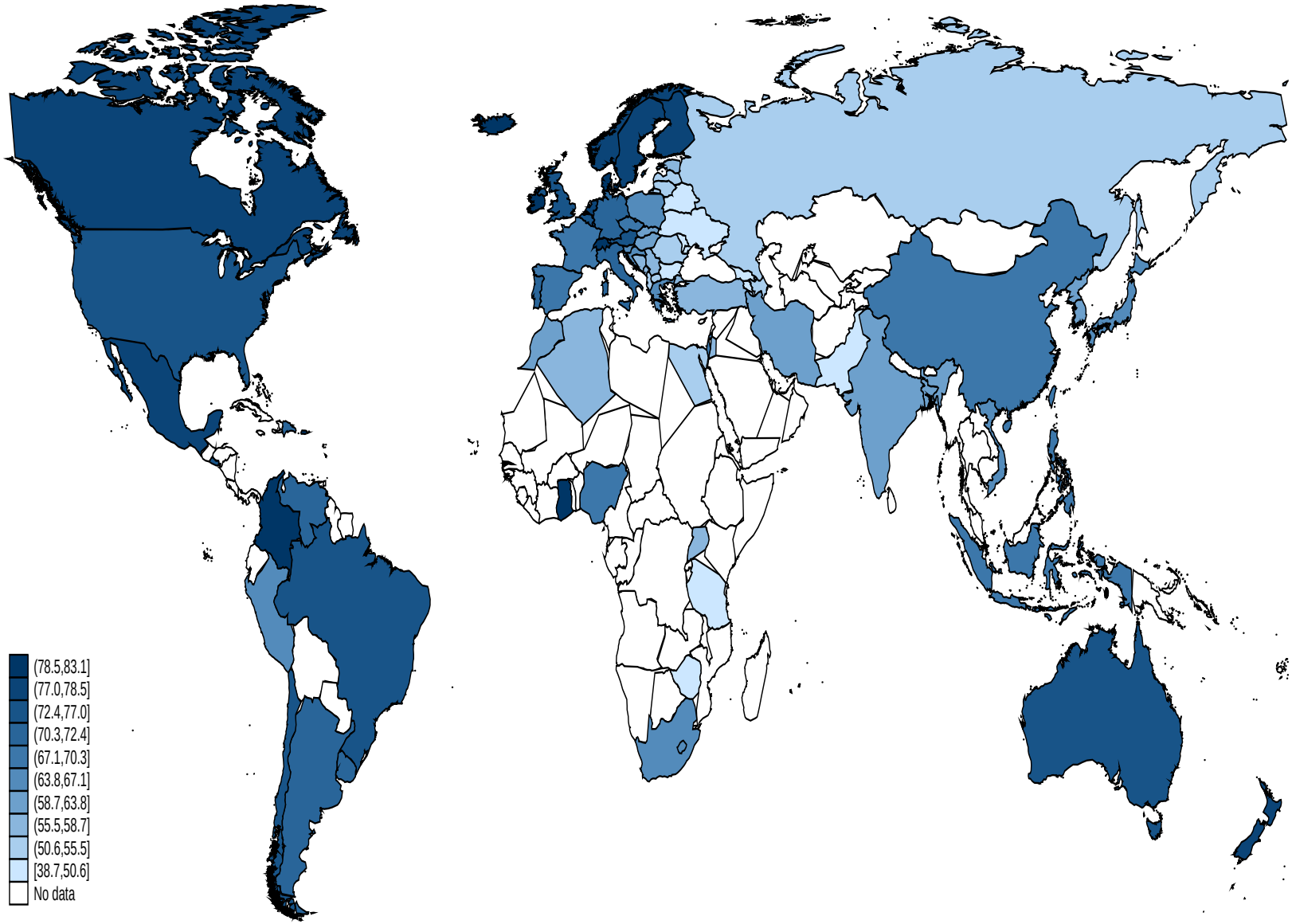
Outline

Outline

Figure: 1. Life satisfaction



Research Question

What makes us happy:

Research Question

What makes us happy:

1. **Where?**

Research Question

What makes us happy:

1. **Where?**
2. **Why?**

Empirical Strategy

1. Micro: country-specific effects

Empirical Strategy

1. Micro: country-specific effects
2. Macro: cross-country determinants

Outline

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The Geography of Economics and Happiness: Spatial Patterns in the Effects of Economic Conditions on Well-Being

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- World Values Survey, 5 waves, 92 countries

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  - Dep. var: Life satisfaction or Happiness
  - OLS or Ordered Probit

Table: Determinants of subjective well-being, overall (1/2)

	LS (OLS)	LS (OP)	HAP (OLS)	HAP (OP)
Income				
Unemployed				
Education, mid.				
Education, upp.				
Married				
As married				
Divorced				
Separated				
Widowed				
...				
Observations				

Table: Determinants of subjective well-being, overall (1/2)

	LS (OLS)	LS (OP)	HAP (OLS)	HAP (OP)
Income	1.42**			
Unemployed	-4.15**			
Education, mid.	0.92**			
Education, upp.	0.94**			
Married	1.97**			
As married	0.39			
Divorced	-2.67**			
Separated	-4.25**			
Widowed	-0.85**			
...				
Observations	185573			

Table: Determinants of subjective well-being, overall (1/2)

	LS (OLS)	LS (OP)	HAP (OLS)	HAP (OP)
Income	1.42**	0.07**	0.33**	0.06**
Unemployed	-4.15**	-0.19**	-0.99**	-0.16**
Education, mid.	0.92**	0.04**	0.50**	0.08**
Education, upp.	0.94**	0.03**	0.59**	0.10**
Married	1.97**	0.10**	1.27**	0.22**
As married	0.39	0.02	0.70**	0.12**
Divorced	-2.67**	-0.13**	-1.11**	-0.17**
Separated	-4.25**	-0.21**	-1.52**	-0.24**
Widowed	-0.85**	-0.04**	-0.87**	-0.12**
...				
Observations	185573	185573	183778	183778

Table: Determinants of subjective well-being, overall (2/2)

	LS (OLS)	LS (OP)	HAP (OLS)	HAP (OP)
...				
N. children	-0.12**	-0.01*	-0.04**	-0.01**
Age	-0.02**	-0.00*	-0.03**	-0.00**
Male	-0.63**	-0.03**	-0.18**	-0.03**
Trust in others	2.15**	0.10**	0.68**	0.12**
Freedom	3.20**	0.16**	0.53**	0.09**
Religion	1.14**	0.06**	0.58**	0.10**
Observations	185573	185573	183778	183778

Table: Income and Life Satisfaction, by country

Rank	Country	Coeff.	t-stat	Rank	Country	Coeff.	t-stat
1	Morocco	5.07	16.23	47	Montenegro	1.50	5.62
2	Moldova	3.92	17.43	48	Croatia	1.49	5.86
3	Hungary	3.65	7.74	49	Russian Fed.	1.34	11.15
4	Mali	3.57	8.11	50	Trinidad-Tobago	1.32	3.52
5	Macedonia	3.48	7.78	51	India	1.32	7.11
6	Rwanda	3.33	10.26	52	Taiwan	1.31	8.95
7	Burkina Faso	3.20	7.96	53	Singapore	1.28	6.08
8	Viet Nam	3.18	10.78	54	Slovenia	1.24	3.55
9	Cyprus	3.15	7.14	55	Dominican Rep.	1.18	2.43
10	Ethiopia	3.12	10.18	56	Japan	1.10	9.69
11	Philippines	3.11	8.07	57	Hong Kong	1.08	3.47
12	Ghana	3.06	9.53	58	Venezuela	1.06	3.83
13	Bangladesh	2.95	9.49	59	Uruguay	1.00	3.14
14	North Korea	2.92	6.92	60	France	0.99	6.97
15	Georgia	2.77	12.40	61	Andorra	0.89	2.75
16	Poland	2.72	11.03	62	United States	0.88	7.27
17	Iran	2.71	12.80	63	Chile	0.84	5.82
18	Albania	2.64	7.22	64	Spain	0.83	7.80
19	China	2.47	11.91	65	Greece	0.82	2.47
20	Bosnia-Her.	2.43	9.69	66	Finland	0.79	4.57
21	Zambia	2.41	6.26	67	Slovakia	0.74	3.18
22	Armenia	2.27	7.31	68	Czech Republic	0.73	3.99
23	El Salvador	2.27	3.56	69	Switzerland	0.71	4.65
24	Jordan	2.26	5.41	70	Netherlands	0.71	3.89
25	Azerbaijan	2.24	6.03	71	Malaysia	0.68	1.88
26	Romania	2.19	10.95	72	South Africa	0.68	6.09
27	Turkey	2.18	12.03	73	Argentina	0.67	3.05
28	Israel	2.15	5.83	74	Germany	0.67	6.57
29	South Korea	2.14	8.71	75	Belgium	0.61	2.74
30	Ukraine	2.13	10.14	76	Mexico	0.59	5.47
31	Lithuania	2.13	6.86	77	United Kingdom	0.58	3.25
32	Tanzania	1.97	2.99	78	Iceland	0.57	2.61
33	Bulgaria	1.95	7.03	79	New Zealand	0.52	2.83
34	Egypt	1.89	8.72	80	Austria	0.52	2.09
35	Indonesia	1.86	6.77	81	Puerto Rico	0.43	1.49
36	Nigeria	1.85	10.82	82	Canada	0.43	3.52
37	Iraq	1.72	5.52	83	Brazil	0.41	2.30
38	Pakistan	1.72	6.17	84	Colombia	0.41	3.80
39	Algeria	1.72	3.46	85	Sweden	0.35	3.00
40	Latvia	1.71	6.60	86	Australia	0.34	2.87
41	Thailand	1.61	5.17	87	Denmark	0.26	1.59
42	Belarus	1.60	8.11	88	Malta	0.24	0.88
43	Zimbabwe	1.58	2.93	89	Portugal	0.24	0.87
44	Peru	1.55	6.66	90	Italy	0.22	1.29
45	Estonia	1.54	6.92	91	Norway	0.17	1.16
46	Serbia	1.52	7.91	92	Ireland	-0.10	-0.34

Note: Source: World Values Survey.

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92	Ireland	-0.10	-0.34

Note: Source: World Values Survey.

Figure: 2a. Income and Life Satisfaction: World

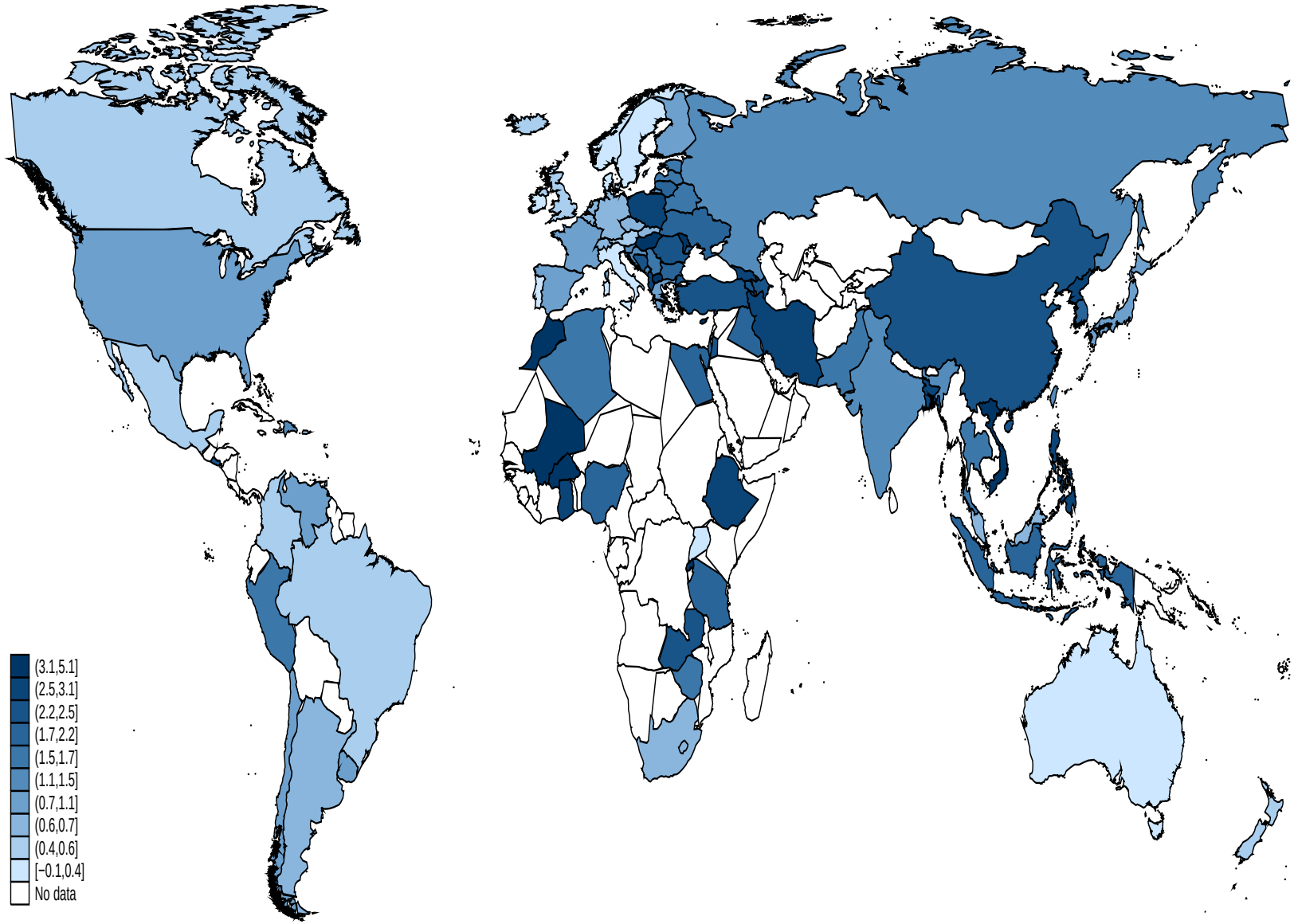


Figure: 2b. Income and Life Satisfaction: Europe

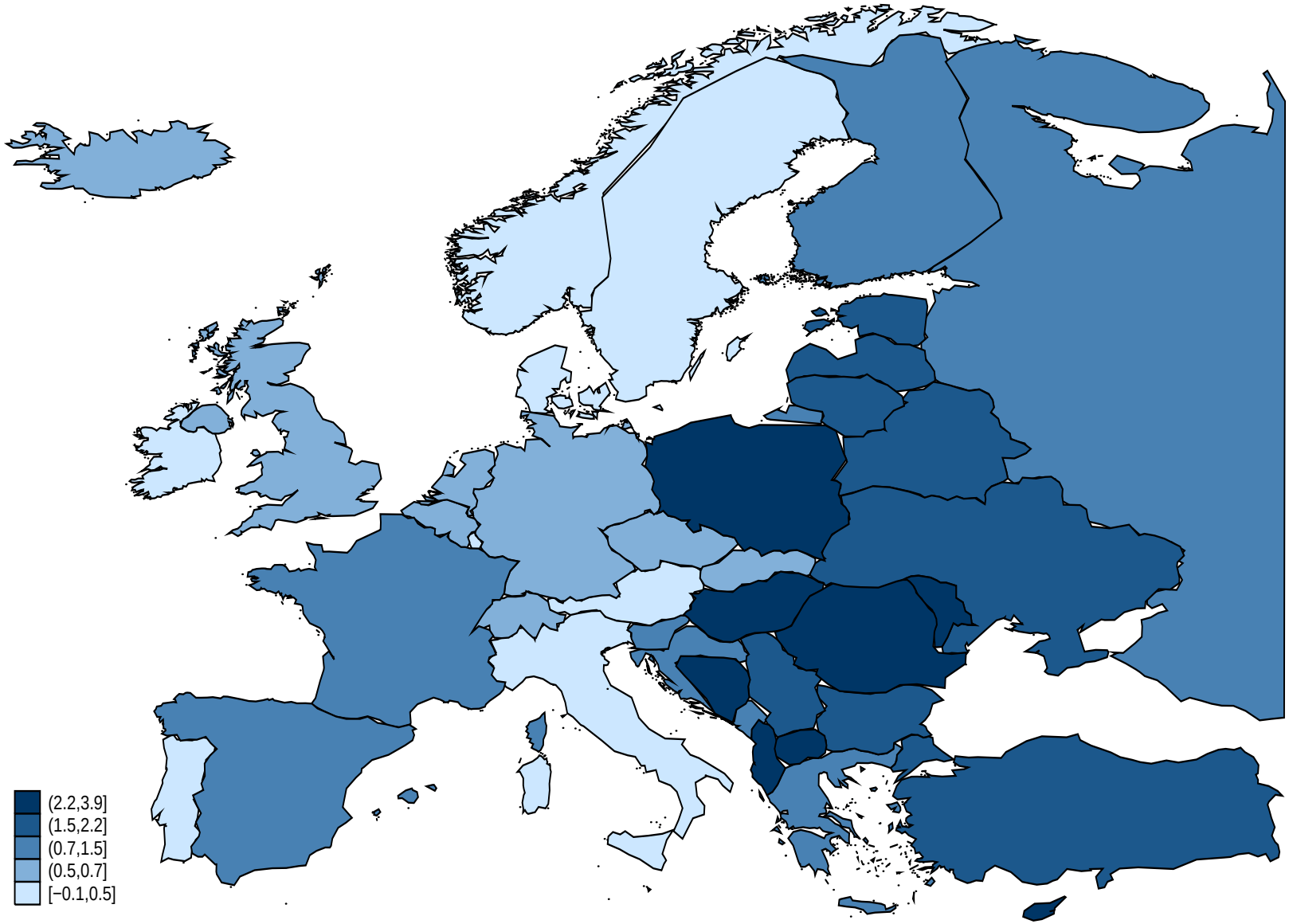


Figure: 3a. Being unemployed and Life Satisfaction: World

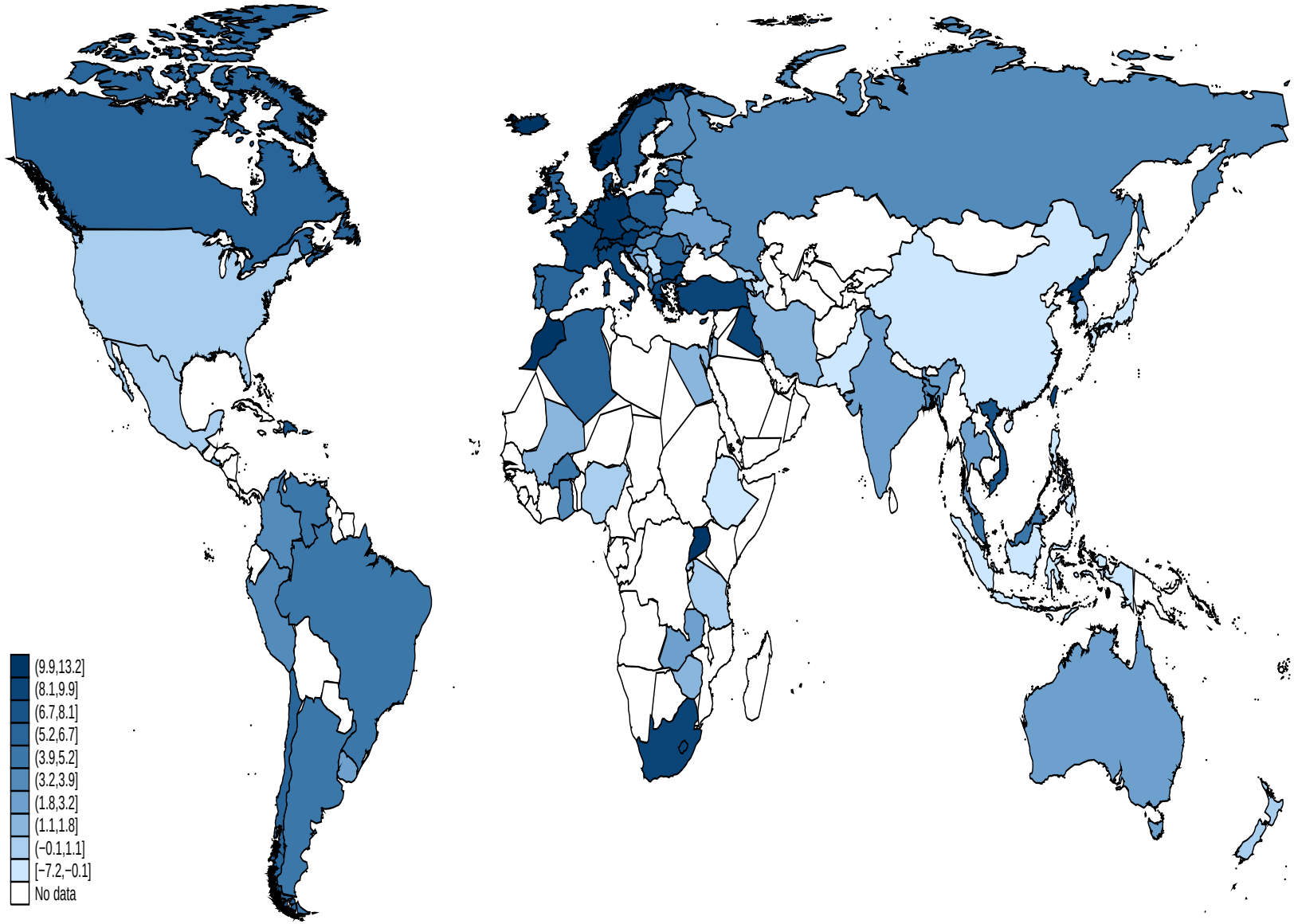
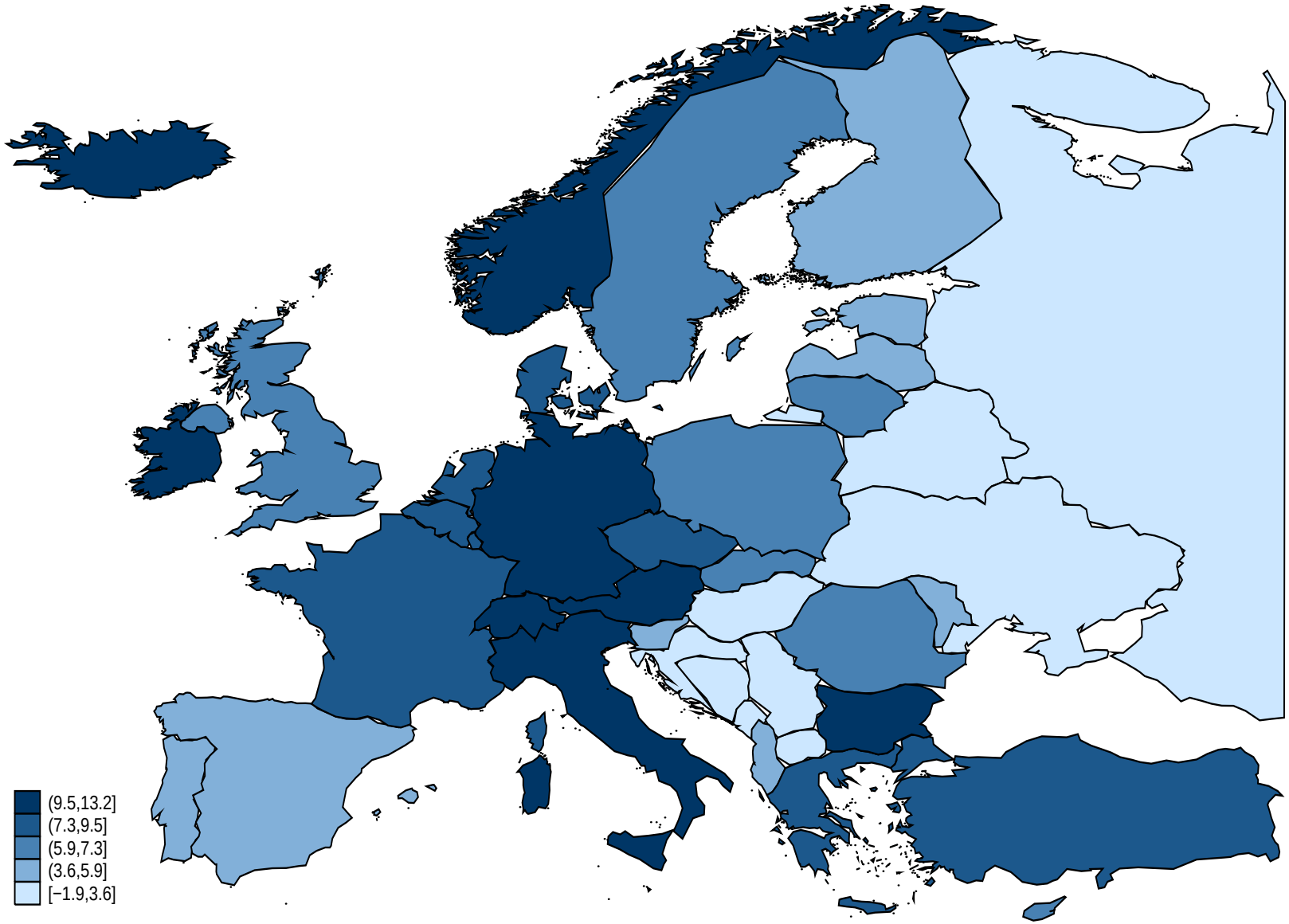


Figure: 3b. Being unemployed and Life Satisfaction: Europe



Methods: macro

- Spatial ARMA:

$$\begin{aligned} P &= \rho W_1 P + X\gamma + u \\ u &= \lambda W_2 u + \varepsilon \\ \varepsilon &\sim N\left(0, \sigma^2 I_n\right) \end{aligned} \tag{1}$$

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Table: Macro determinants of micro effect of **income**

	(1)	(2)	(3)	(4)
Log GDP per capita				
Unemployment rate				
Inflation rate				
Government size				
Trade Openness				
Log Population				
Urban population				
Life expectancy				
Birth rate				
ρ	0.67**			
λ				
R^2	0.15			
Observations	92			

Table: Macro determinants of micro effect of **income**

	(1)	(2)	(3)	(4)
Log GDP per capita		-0.49**		
Unemployment rate		0.01		
Inflation rate		-0.00		
Government size		0.00		
Trade Openness		0.00		
Log Population				
Urban population				
Life expectancy				
Birth rate				
ρ	0.67**	0.20		
λ				
R^2	0.15	0.48		
Observations	92	92		

Table: Macro determinants of micro effect of **income**

	(1)	(2)	(3)	(4)
Log GDP per capita		-0.49**	-0.46**	
Unemployment rate		0.01	0.01	
Inflation rate		-0.00	-0.00	
Government size		0.00	-0.00	
Trade Openness		0.00	0.00	
Log Population			-0.08	
Urban population			-0.00	
Life expectancy			-0.01	
Birth rate			-0.02	
ρ	0.67**	0.20	0.17	
λ				
R^2	0.15	0.48	0.50	
Observations	92	92	92	

Table: Macro determinants of micro effect of **income**

	(1)	(2)	(3)	(4)
Log GDP per capita		-0.49**	-0.46**	-0.45**
Unemployment rate		0.01	0.01	0.00
Inflation rate		-0.00	-0.00	-0.00
Government size		0.00	-0.00	-0.00
Trade Openness		0.00	0.00	0.00
Log Population			-0.08	-0.08
Urban population			-0.00	-0.00
Life expectancy			-0.01	-0.01
Birth rate			-0.02	-0.02
ρ	0.67**	0.20	0.17	
λ				0.22
R^2	0.15	0.48	0.50	0.50
Observations	92	92	92	92

Table: Macro determinants of micro effect of **being unemployed**

	(1)	(2)	(3)	(4)
Log GDP per capita				
Unemployment rate				
Inflation rate				
Government size				
Trade Openness				
Log Population				
Urban population				
Life expectancy				
Birth rate				
ρ	0.65**			
λ				
R^2	0.13			
Observations	91			

Table: Macro determinants of micro effect of **being unemployed**

	(1)	(2)	(3)	(4)
Log GDP per capita		-1.14**		
Unemployment rate		-0.13		
Inflation rate		0.00		
Government size		0.16		
Trade Openness		-0.00		
Log Population				
Urban population				
Life expectancy				
Birth rate				
ρ	0.65**	0.62**		
λ				
R^2	0.13	0.30		
Observations	91	91		

Table: Macro determinants of micro effect of **being unemployed**

	(1)	(2)	(3)	(4)
Log GDP per capita		-1.14**	-1.54*	
Unemployment rate		-0.13	-0.16*	
Inflation rate		0.00	0.00	
Government size		0.16	0.18*	
Trade Openness		-0.00	-0.01	
Log Population			0.09	
Urban population			0.03	
Life expectancy			0.02	
Birth rate			-0.05	
ρ	0.65**	0.62**	0.59*	
λ				
R^2	0.13	0.30	0.31	
Observations	91	91	91	

Table: Macro determinants of micro effect of **being unemployed**

	(1)	(2)	(3)	(4)
Log GDP per capita		-1.14**	-1.54*	-1.41**
Unemployment rate		-0.13	-0.16*	-0.17**
Inflation rate		0.00	0.00	0.00
Government size		0.16	0.18*	0.35**
Trade Openness		-0.00	-0.01	-0.02
Log Population			0.09	-0.38
Urban population			0.03	0.01
Life expectancy			0.02	-0.08
Birth rate			-0.05	-0.11
ρ	0.65**	0.62**	0.59*	
λ				0.81**
R^2	0.13	0.30	0.31	0.12
Observations	91	91	91	91

Key findings

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2. **Income**: stronger effect where **GDP per capita** lower
3. **Being unemployed**: stronger effect in countries where
   - GDP per capita higher
   - unemployment higher
   - government size smaller

Outline

What next?

1. Income ✓

What next?

1. Income ✓
2. Employment status ✓

What next?

1. Income ✓
2. Employment status ✓
3. Gender 

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 
7. Age

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 
7. Age
8. Education

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 
7. Age
8. Education
9. Religion

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 
7. Age
8. Education
9. Religion
10. Trust

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
4. Children 
5. Marital status 
6. Social relations 
7. Age
8. Education
9. Religion
10. Trust
11. Freedom

What next?

1. Income ✓
2. Employment status ✓
3. Gender 
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6. Social relations 
7. Age
8. Education
9. Religion
10. Trust
11. Freedom
12. ...