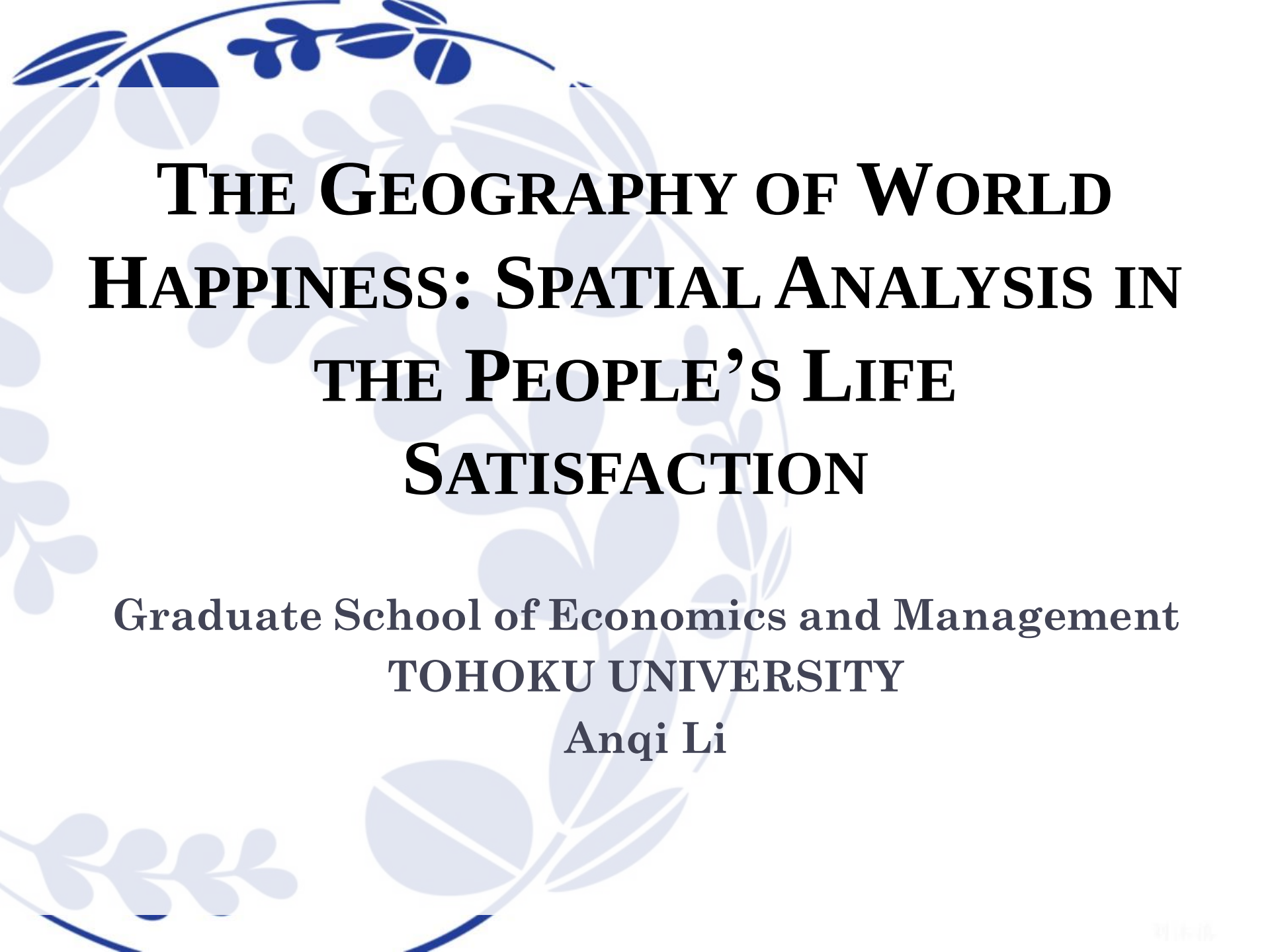




THE GEOGRAPHY OF WORLD HAPPINESS: SPATIAL ANALYSIS IN THE PEOPLE'S LIFE SATISFACTION

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INTRODUCTION

Your life goes well when you are happy.

Happiness is experiences of pleasure and purpose over time.

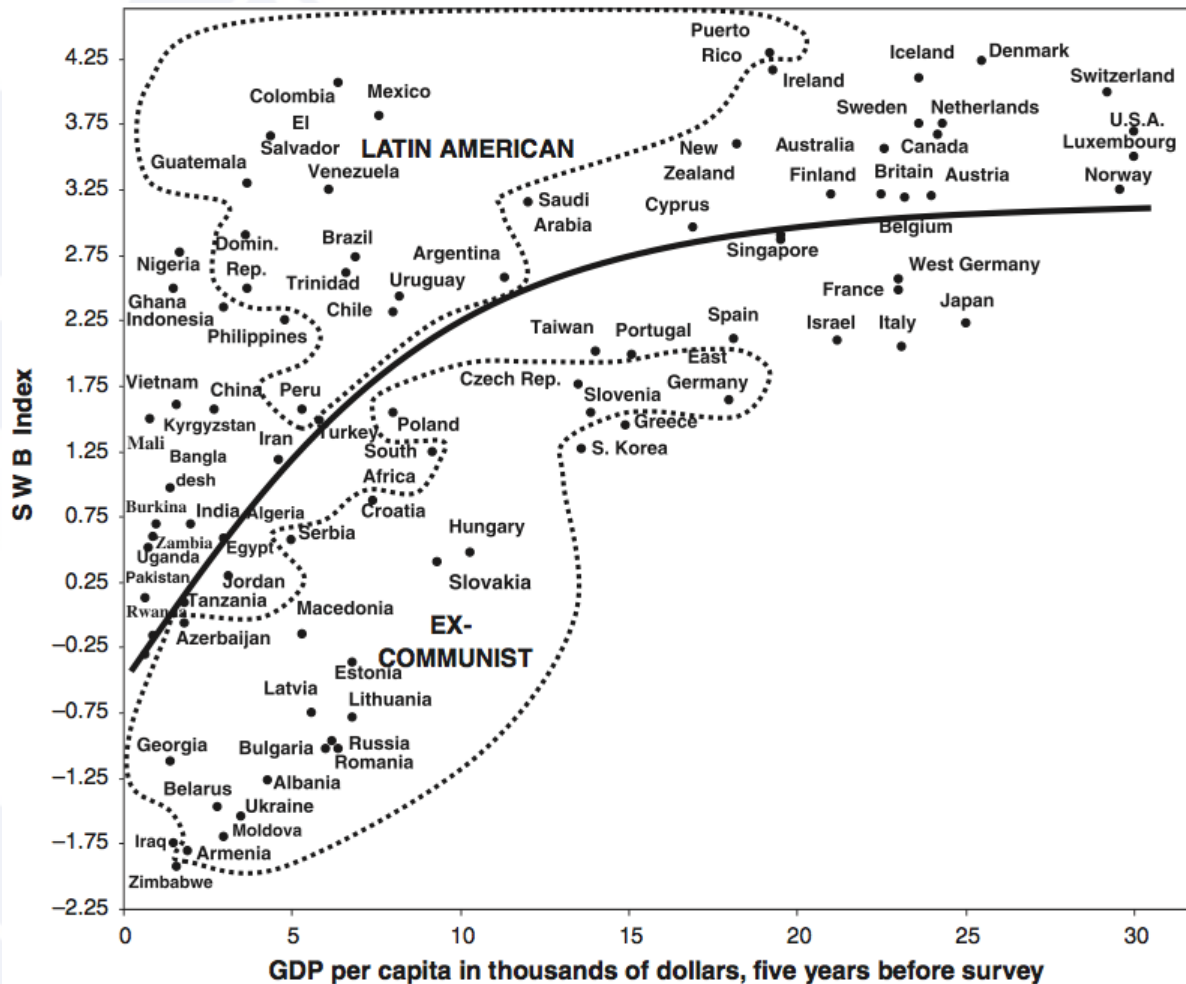
Life satisfaction (LS) is measured on a 1-10 scale, based on the question: “*All things considered, how satisfied are you with your life as a whole these days?*”

World Happiness Report

- Dependent Variable: averaged national happiness scores
- Independent Variables: Social-demographic + Macroeconomic
- Linear Regression Analysis (OLS)

EASTERLIN PARADOX

Easterlin argued that life satisfaction does rise with average incomes but only up to a point. Beyond that, the marginal gain in happiness declines.



MY EMPIRICAL ANALYSIS

- **Individual-level:**

The evaluated national LS after controlling social-demographic characteristics , and the factors related to personality.

- **Country-level:** the spatial similarity in people's happiness.

- **Divide data into three classes :**

	Low-Fin.sat	Middle- Fin.sat	High-Fin.sat
Scale	1~4	5~7	8~10
Number of observations	23,121	39,457	24,749

Satisfaction with financial situation (FS) was measured on a 1-10 scale, based on the question: “*How satisfied are you with the financial situation of your household?*”.

SPATIAL MODEL

$$(1) \quad Y_{ij} = C_j\beta_j + X_i\gamma + u_{ij}, \quad j=1,\dots,N, i=1,\dots,n_j$$

$$(2) \quad \begin{aligned} \beta &= (\beta_1, \dots, \beta_N)' \\ \beta &= \rho_1 W\beta + Z_j\alpha + e \\ e &= \rho_2 We + f, f \sim N(0, \sigma^2 I_N) \end{aligned}$$

Y_{ij} : dependent variable, life satisfaction for all individual i within a country j .

C_j : country dummy variables.

X_i : individual-level explanatory variables.

Z_j : country-specific explanatory variables.

W : Spatial weight matrix, which is a $N \times N$ matrix that represents the spatial relationship among N countries.

$$\circ \quad W_{ij} = \begin{cases} 1, & \text{if the country } i, j \text{ are in the same region} \\ 0, & \text{otherwise} \end{cases}$$

Regions: Africa, Latin America, North America, Europe, Western Asia, Eastern Asia, Southern Asia, Central Asia, South-Eastern Asia, Pacific.



DATASET

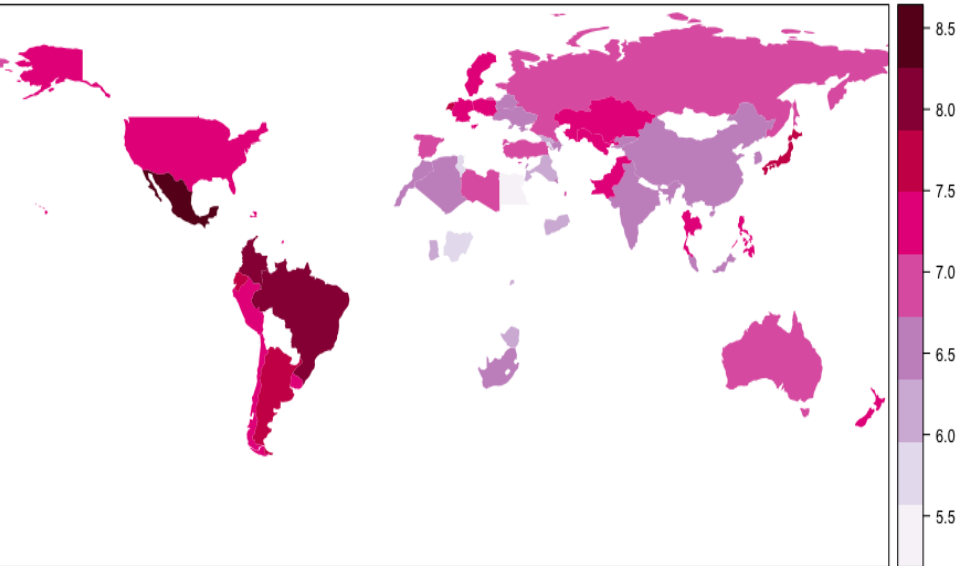
- ◉ **Individual-level Data:** A large samples of individuals for 58 countries, are from the World Value Survey (2010-2012 Wave 6).
 - ◉ **Country-level Data:** The data source are from the World Bank Database.
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RANK FOR THE ESTIMATES OF LIFE SATISFACTION

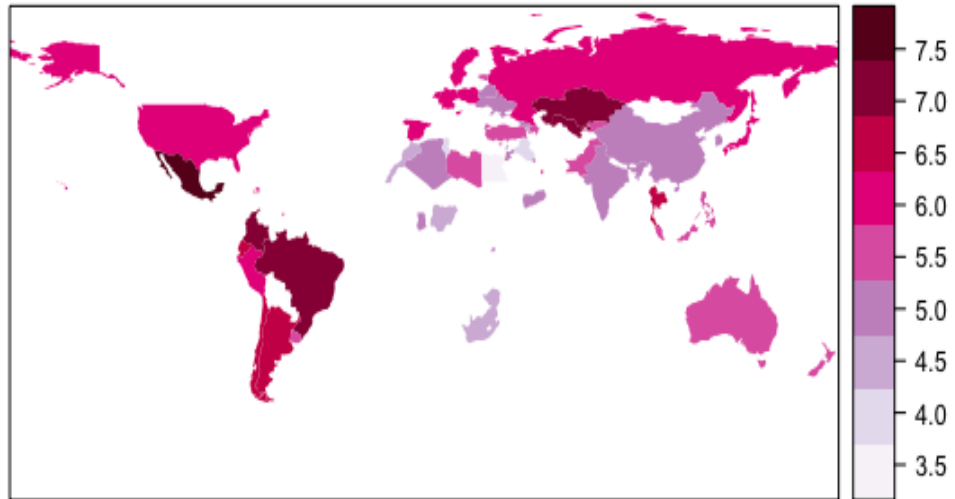
Country	LS	rank1	FS_low	rank2	FS_middle	rank3	FS_high	rank4	Country	LS	rank1	FS_low	rank2	FS_middle	rank3	FS_high	rank4
Algeria	6.5168	42	5.0976	43	6.5387	47	7.649	55	Malaysia	6.5288	41	5.6188	27	6.581	46	7.9147	49
Argentina	7.5025	7	6.6981	7	7.4162	8	8.4553	19	Mexico	8.4306	1	7.6221	1	8.2671	1	9.0043	2
Armenia	5.9376	56	4.5733	53	6.3563	54	8.2331	31	Morocco	6.3423	47	4.3134	54	6.144	56	8.7592	7
Australia	7.0203	24	5.3896	33	7	25	8.3985	20	Netherlands	7.5097	6	6.1132	17	7.4548	6	8.3893	22
Azerbaijan	6.6646	37	5.2859	36	6.9878	28	8.0668	39	New Zealand	7.1425	20	5.3293	34	7.1502	19	8.5943	13
Belarus	6.4741	45	5.0959	44	6.8787	30	8.3404	25	Nigeria	5.9493	55	4.2962	55	6.4575	49	7.6986	53
Brazil	7.9179	3	6.8937	5	7.7089	3	8.9942	3	Pakistan	7.1669	19	5.2959	35	7.1234	21	8.6708	10
Chile	7.3052	15	6.3327	9	7.2756	14	8.4727	18	Peru	7.3718	13	6.2745	11	7.2269	16	8.598	12
China	6.7114	34	5.1028	42	6.7551	37	8.1769	33	Philippines	7.4571	8	5.5408	30	7.314	11	8.8346	5
Colombia	8.144	2	7.3102	2	8.0146	2	9.1634	1	Poland	7.4303	10	6.2797	10	7.3964	10	8.545	14
Cyprus	6.826	31	6.1495	16	6.8366	31	7.7363	52	Qatar	6.9765	25	6.2547	14	6.8364	32	8.3121	26
Ecuador	7.6917	4	6.7101	6	7.5626	4	8.7599	6	Romania	6.6794	36	5.1707	41	6.7739	36	8.2699	28
Egypt	5.3943	58	3.4524	58	5.7294	58	7.9193	47	Russian Federation	6.9573	28	5.9716	22	7.0498	24	7.7434	51
Estonia	6.7463	32	5.4163	31	6.9374	29	8.2618	30	Rwanda	6.3285	48	5.2038	40	6.3835	53	7.6641	54
Georgia	6.1758	51	4.9735	47	6.6528	42	8.6857	9	Singapore	6.7143	33	5.6508	26	6.8216	35	7.9176	48
Germany	7.4254	11	6.0937	18	7.3974	9	8.4889	16	Slovenia	7.3465	14	6.0922	19	7.4271	7	8.4855	17
Ghana	6.0917	52	4.8402	49	6.6412	43	7.9476	45	South Africa	6.4973	43	4.6488	52	6.6988	40	8.1279	36
Haiti	7.1214	23	6.2653	13	6.8363	33	6.9115	57	Spain	6.9726	26	5.9248	23	6.9957	26	8.1502	35
Hong Kong	6.937	30	5.5458	29	6.8316	34	8.0487	41	Sweden	7.122	22	6.2683	12	7.1283	20	8.1767	34
India	6.6274	39	5.081	45	6.5352	48	8.2661	29	Thailand	7.4172	12	6.5699	8	7.2422	15	8.7348	8
Iraq	6.0232	54	4.0568	57	6.2688	55	7.9389	46	Trinidad And Tobago	7.2163	16	6.1828	15	7.1908	18	8.5033	15
Japan	7.6418	5	5.9729	21	7.4818	5	8.8374	4	Tunisia	5.7868	57	4.1224	56	6.1181	57	8.0537	40
Jordan	6.2711	49	4.9096	48	6.6101	45	8.0862	38	Turkey	6.9656	27	5.7202	25	7.0736	23	8.3649	24
Kazakstan	7.2114	17	7.0982	4	7.1999	17	7.5556	56	Ukraine	6.6314	38	5.2712	37	7.1027	22	8.3908	21
South Korea	6.5697	40	5.2091	39	6.7297	39	8.1135	37	United States Of America	7.1732	18	6.0332	20	7.2807	13	8.3653	23
Kuwait	6.4885	44	5.0241	46	6.3897	52	7.9819	43	Uruguay	7.4356	9	5.7592	24	7.2928	12	8.6233	11
Kyrgyzstan	6.7031	35	5.4056	32	6.6227	44	8.2808	27	Uzbekistan	7.1249	21	7.1019	3	6.9937	27	6.2613	58
Lebanon	6.3959	46	5.2275	38	6.4324	51	7.8701	50	Yemen	6.2345	50	4.7496	50	6.6724	41	8.0422	42
Libyan Arab Jamahiriya	6.9408	29	5.5604	28	6.7388	38	8.2229	32	Zimbabwe	6.0272	53	4.7296	51	6.4437	50	7.9747	44

Geography of Life Satisfaction

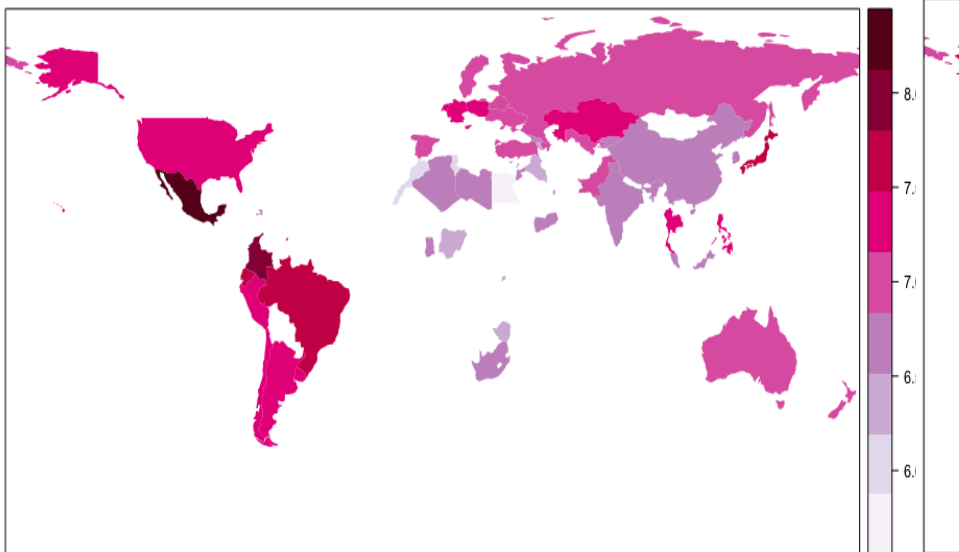
Life Satisfaction



Life Satisfaction

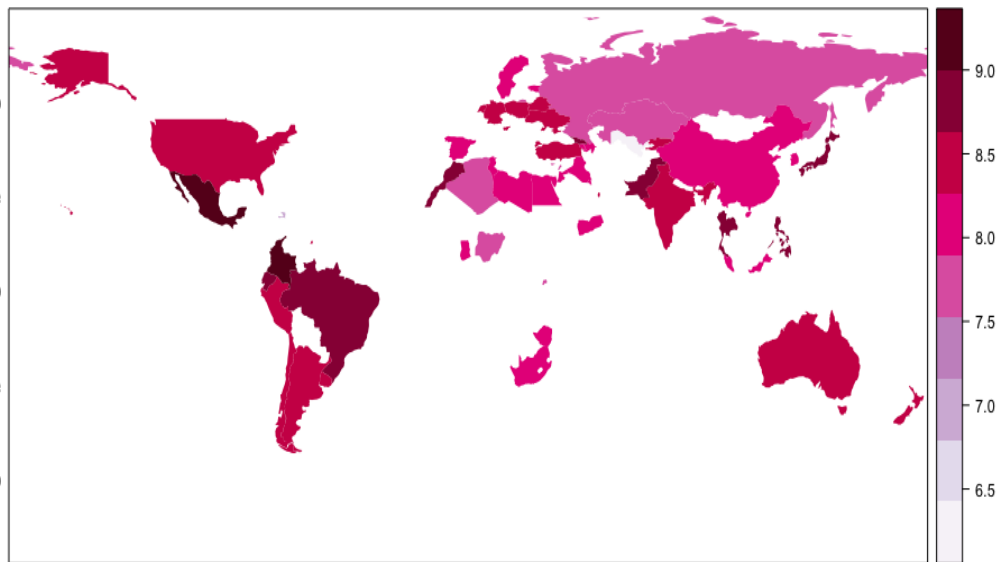


Life Satisfaction



Low Financial Satisfaction

Life Satisfaction



Middle Financial Satisfaction

High Financial Satisfaction

DETERMINANTS OF LIFE SATISFACTION , BY FINANCIAL SATISFACTION

	Coefficients	t-value	low Fin.sat.	t-value	middle Fin.sat.	t-value	high Fin.sat.	t-value
Inflation Rate	0.0093***	5.3458	0.0051	1.4214	0.0138***	6.5388	0.0044	1.412
Unemployment Rate	0.0097***	2.5352	0.021**	2.7592	0.0094	1.8239	0.0113	1.3015
Government Expenditure	-0.0079***	-3.8764	-0.0182***	-3.9076	0.0025	1.0413	-0.0019	-0.5619
Life Expectancy	0.0259***	11.0622	0.0264***	5.072	0.022***	8.1829	0.0328***	9.5459
Forest Area	0.0022***	4.8836	0.0017***	5.6754	0.0013**	2.2764	0.0024***	2.8015
Gini Index	-0.0188***	-17.2747	-0.0216***	-8.7585	-0.0158***	-11.8524	-0.0127***	-7.5335
log(GDP per capital)	0.0476***	2.2431	0.0994***	2.5813	0.048***	2.6349	-0.0273	-1.0488
log(Population)	0.146***	34.1964	0.1132***	13.0593	0.1478***	29.8913	0.1644***	25.7961
log(Urban population)	0.3695***	10.2531	0.0767	0.9143	0.327***	7.477	0.5937***	9.8688
Trade Openness	0.0004**	2.2728	-0.0002	-0.5492	0.0004	1.962	-0.0005	-1.851
ρ_1	0.1717***	28.2438	0.1883***	11.2688	0.1605***	14.3693	0.1507***	19.06
ρ_2	0.4787***	34.9944	0.485***	16.8018	0.4721***	21.3479	0.4242***	15.7623
Number of observations	87,327		23,121		39,457		24,749	



CONCLUSION

- When people talk about happiness, they should take spatial factor into consideration.
 - Latin Americans seemed to be naturally happier than other regions, but Africans did the opposite.
 - People with high-financial, the effect of macro-economic factors on their happiness is smaller than others.
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Thank you very much !