

Title:

國家治理、社會資本與老年人幸福感: 31 國之國際比較

Governance, social capital and happiness: An international comparison cross 31 countries

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中文摘要

研究背景：

許多文獻以個人層次(如性別、年紀、與社經地位等)和國家層次(如經濟、國家治理等)變數來解釋幸福感。多數文獻在個人及國家層次對幸福感的直接效果提出支持性的證據。然而，對於多數文獻對於國家層次變數在個人層次變數影響幸福感的效果並不清楚。本研究以三十一個國家老年人為樣本，藉由跨層次及國家層次變數與個人層次變數對於幸福感的調節效果，探討老年人幸福感的影響因素。

研究方法：

本研究使用四個資料庫。個人層次變數取自國際社會調查，國家層次資料取自世界銀行資料庫、國家貪腐指數、及國家繁榮指標。全部樣本為 9245 位老人。本研究使用多層次分析來進行個人層次與國家層次變數在幸福感的直接效果與交互效果。

研究結果：

研究指出，高教育程度、已婚、有酬工作、較頻繁的宗教活動、及較健康的身體狀況的老人自覺幸福感較高。另外，國家經濟愈好、貪腐程度低、較少的創業與機會、國家治理較好、及較強的社會資本與老人幸福感有正向的顯著相關。此外，國家治理會使婚姻地位及健康對個人幸福感的負面影響減弱。較強的社會資本也使幸福感在教育程度上的差異變小。本研究結果顯示國家層次上，國家治理及社會資本在個人層次變項對幸福感的影響有跨層次的調節作用。盼國家政策執行者重視國家治理與加強社會資本的凝聚與連結以增加老年人生活福祉。

Abstract

Study Background

Although the effects of individual-level and country-level variables on happiness are well documented, much theoretical and empirical controversy surrounds the question of how country-level variables actually shape the individual's subjective happiness is unclear. Literature is limited in the mechanism how country-level variables condition on the effects of individual-level variables on happiness. This study focuses on the effects of individual-level variables on happiness for the elderly by examining the cross-level interaction between individual-level and country-level variables.

Methodology:

Using a data set from the International Social Survey Programme (ISSP), a cross-sectional comparison across 31 countries were conducted. In total, 9245 samples were collected. Multi-level analysis was employed to measure the meso effects of happiness from individual level and contextual level.

Results and Conclusion

Results demonstrate that higher educational degree ($p < .001$), married status or with civil partnership ($p < .001$), paid job ($p < .05$), more frequent attendance of religious services ($p < .001$), and better health status ($p < .001$) relate positively to subjective happiness. Considering main effects of country level, the corruption score ($p < .05$), better economy ($p < .1$), fewer entrepreneurship and opportunities ($p < .05$), better scores on governance ($p < .001$), and stronger social capital ($p < .10$) are shown to be positively correlated with higher score of happiness for the elderly. In addition, the effect of marital status ($p < .01$) and health ($p < .001$) on their subjective happiness were shown to be conditioned by governance respectively. Also, the effect of education on subjective happiness was shown to be conditioned by social capital ($p < .001$). The governance and stronger social capital leads to the differences of subjective happiness resulted from being social deprived among elderly appear to be negligible. Our findings expect to serve to raise the awareness of policymakers on the protecting effects of county-level variables on happiness for the elderly.

Introduction

Related factors with the happiness have been well-documented in literature. Directed effect on happiness can be attributed to individual demographics (*i.e.*, sex, age, education etc) and context-level variables (*i.e.*, economy, social capital, and governance). However, literature is limited in how country-level variables condition the relationship of individual-level variables on happiness is not clear. If individual demographics affects the elderly subjective happiness, are other variables likely mediate the relationship? What are the mechanisms that affect happiness through country-level variables? This study focuses on the effects of individual-level variables on happiness for the elderly by examining the cross-level interaction between individual-level and country-level variables. Using a data set from the International Social Survey Programme (ISSP), a cross-sectional comparison across 31 countries are conducted. In total, 9245 samples are collected. Multi-level analysis (MLA) is conducted to measure the meso effects of happiness from individual level and contextual level.

Individual-level variables

Most discussions and arguments focus on the association between socio-economics status and happiness, such as educational level and income. Studies demonstrate that happiness is strongly associated with the individual's age, gender, marital status, religion and etc (Helliwell, Layard, & Sachs, 2012; Helliwell, Layard, & Sachs, 2013). Previous studies find that age has a U-shaped effect on happiness (Blanchflower & Oswald, 2008; Hayo & Seifert, 2003). Happiness is approximately U-shaped through the life-course; mental distress tends to reach a maximum in middle age. A recent study indicates that the older cohorts enjoy higher levels of subjective well-being than their younger cohorts, but they experience sharper declines (Jivraj, Nazroo,

Vanhoutte, & Chandola, 2014). Detrimental health conditions and physical limitations play a crucial role in explaining scale biases in the reporting style of older individuals (Angelini, Cavapozzi, Corazzini, & Paccagnella, 2012; Ul-Haq et al., 2014). Research findings on gender differences on happiness are inconsistent. One study indicates that women continue to be happier than men, when other variables holding constant. However, the gender difference in later life turns to be somewhat smaller in magnitude (Richard A Easterlin, 2001). Opposite to many studies on general happiness, no noticeable gender effects are found in Hayo & Seifert's (2003) studies (Hayo & Seifert, 2003). In general, educational degree has no clear effect on happiness, but education is indirectly related to happiness through its effect on income, job security, and faster promotion (Helliwell et al., 2012; Oreopoulos & Salvanes, 2011). In turn, better job bring better status on retirement. The lower-educated report lower levels of well-being when in work, but they also report a greater drop in well-being when they retire, especially for those are not voluntary retired (Dingemans & Henkens, 2014; Helliwell et al., 2012). In addition, more social involvement and more attendance of religion are more likely to perceive happier especially in the countries which life is harder, while the effect is not so strong in more affluent countries (Diener, Tay, & Myers, 2011; Lim & Putnam, 2010). Diener et al (2011) also argue that the associations of religiosity and happiness were mediated by social support, feeling respected, and purpose or meaning in life, especially in poorer countries. Other studies also find that that poor health, separation, unemployment and lack of social contact are all strongly negatively associated with subjective well-being (Dolan, Peasgood, & White, 2008; Helliwell et al., 2012; Helliwell et al., 2013).

Country-level variables

Country to country differences in happiness are widely documented. Beyond the micro-level predictors of happiness, previous studies have found strong evidence for the importance of both income and social context variables in explaining within-country and international differences in happiness. In terms of a cross-sectional perspective, individual income is positively related to the subjective well-being (Easterlin, 1974). A later study conducted by Easterlin argues that subjective well-being varies directly with income and inversely with material aspirations (Richard A. Easterlin, 2001). However, at a time-series perspective, the population does not on average happier when the country's income rises, especially in some advanced countries (Richard A. Easterlin, 2001; Helliwell et al., 2012). However, not all advanced countries enjoy the greater happiness as economic rises. They continue to argue that certain nations may have a genetic advantage in well-being (Proto & Oswald, 2014). Helliwell et al (2012, 2013) indicate that the international similarity of the estimated equations suggests that the large international differences in average life evaluations are not due to different approaches to the meaning of a good life, but to differing social, institutional, and economic life circumstances. In addition, one study continues to argue that GDP per capita, health life expectancy, social support, and freedom are positively related to individual happiness, while perceived corruption in government is shown to be negatively related to happiness. They argue that it is possible that high income in a country is good for longer health life expectancy, social support, freedom and corruption.(Helliwell et al., 2012)

The source of happiness include the set of social interactions through which individuals are interconnected which referred to as “social capital” which is defined as networks together with shared norms, values and understandings that facilitate cooperation within or among groups” (OECD, 2001, p 41). One study indicates that

bonding and bridging social cohesion, civic participation, heterogeneous socio-economic relationships, and political efficacy and trust appear to be correlated with community health after controlling for neighbourhood deprivation (Poortinga, 2012). Evidence of positive correlation between several proxies of social capital and happiness are also found in Sarracino's study in western Europe, Australia, Canada and Japan (2012) and Rodríguez-Pose & von Berlepsch's study (2014) for European countries.

Although the factors related to happiness are well documented at micro and macro level. Answer to the question how country mechanism affect the individual perceive happiness, and how country-level variables moderatethe effects of individual-level variables on happiness for the elderly are not clear. Using a data set from the International Social Survey Programme (ISSP), a cross-sectional analysis across 31 countries were conducted by examining the main effect interaction of individual-level, country-level variables and cross-level interaction.

Methodology

Data and Variables

Data are collected from four data base (Table 1). The subjective data are taken from the dataset of the International Social Survey Programme (ISSP), which is an annual program of international collaboration on social science surveys. The general approach is to add a standardized, international comparable questionnaire to an existing regular national survey or a special survey if necessary. Specific themes are chosen within the ISSP, and specific questions developed. In total, 31 countries/regions are included in our research sample. Since the ISSP is often attached to existing national surveys, the survey methods and sampling strategies vary by nationals, but all research aims for a representative sample of the adult population. Detailed information on country-specific survey methods and sampling methods was available in the online codebook of the 2012 ISSP study (<http://www.gesis.org/en/services/data/sruvey-data/issp/modules-study-overview/>). The total weighting has been normalized to ensure that the sample distributions of the different countries were adjusted according to the known population distributions of each country (*i.e.*, sex, age). Internal weighting for each specific country is provided in the ISSP data and codebook. The ISSP data samples are representative of the population of each country (Klein & Harkness, 2001; Scholz, Harkness, & Faaß, 2003).

Table 1 Variables and Data Sources

Variable	Measure	Data Source	Measurement Indicators
Individual level (n=9245)			
1 Sex	Single	International Social Survey Programme	--
2 Age	Single	International Social Survey Programme	--
3 Education level	Single	International Social Survey Programme	--
4 Marital status (married / civil)	Single	International Social Survey Programme	--
5 Paid work (paid, partnership)	Single	International Social Survey Programme	--
6 Attendance of religious services	Single	International Social Survey Programme	--
7 Health	Single	International Social Survey Programme	--
Country level (n=31)			
1 Life Expectancy	Single	World Development Indicators	--
2 Population ages >= 65(% of total)	Single	World Development Indicators	--
3 GDP	Single	World Development Indicators	--
4 Health expenditure (% of total GDP)	Single	World Development Indicators	--
5 Corruption index score	Single	Corruption Perceptions Index	a combination of polls collected from different surveys and assessments from 12 different institutions.
6 Economy	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • macroeconomic policies • economic satisfaction and expectations • foundations for growth • national sector efficiency

Table 1 Variables and Data Sources (continued)

Variable	Measure	Data Source	Measurement Indicators
Country level (n=31)			
7 Entrepreneurship & Opportunity	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • a country's entrepreneurial environment • its promotion of innovative activity • the evenness of opportunity
8 Governance	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • elective and accountable government • fair elections and political participation • rule of law
9 Education	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • access to education • quality of education • human capital
10 Health	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • basic health outcomes (both objective and subjective) • health infrastructure • preventative care
11 Personal freedom	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • guaranteeing individual freedom • encouraging social tolerance.
12 Social capital	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • social cohesion and engagement • community and family networks
13 Safety & Security	Composite	Legatum Prosperity Index	<ul style="list-style-type: none"> • national security • personal safety

Dependent Variable: Happiness

In the ISSP data, the concept of happiness is operationalized with a single question that asks people how happy or unhappy they are with their life in general. Despite skepticism that such an ephemeral phenomena could be accurately measured with a single item, a number of prior studies have provided evidence supporting the reliability and validity of this approach (Vanassche, Swicegood, & Matthijs, 2013). The nature of the research that we present here to require that happiness to be reliably measured across countries. The cumulative evidence on this issue demonstrates that there is substantial cross-national reliability in single item measures of happiness. The single item produces a scale of 1-7 with a higher score indicating a greater happiness (1=completely unhappy; 2=very unhappy; 3=fairly unhappy; 4=neither happy nor unhappy; 5=fairly happy; 6=very happy; 7= completely happy).

Individual-level variables

We have taken several additional individual factors into account. The selection of these controls is based on reported patterns of association in literature and the theoretical possibility that they might condition the association among subjective happiness and other variables. The individual attribute variables includes age, age-squared, gender (1 = male, 0 = female). Educational degree ranges from (0 = no formal education; 1 = primary school; 2 = lower secondary; 3 = upper secondary; 4 = post secondary, non-tertiary; 5 = lower level tertiary, first stage; 6 = upper level tertiary). Health status is measured as Likert scale (1 = poor; 2 = fair; 3 = good; 4 = very good; 5 = excellent). Frequency of attendance of religious services ranges as from never (coded as 0) to several times a week or more often (coded as 8).

Country-level variables

We consider country-level variables hypothesized to contribute to the elderly's perceived happiness. As shown in [Table 1](#), life expectancy, population ages 65 and above (% of total), Gross Domestic Product and health expenditure (% of total GDP) are obtained from the data set of World Development Indicators from the World Bank (The World Bank, 2013a, 2013b, 2013c, 2013d).

Based on the data from the Transparency International, the corruption perceptions index are obtained (Transparency International, 2013). The Corruption Perceptions Index (CPI) ranks countries and territories based on how corrupt their public sector is perceived to be. It is a composite index – a combination of polls collected from different surveys and assessments from 12 different institutions. The validity of statistical assessment for CPI is detailed in previous studies (Saisana & Saltelli, 2012; Wilhelm, 2002). A country/territory's score indicates the perceived level of public sector corruption on a scale of 0-100, where 0 means that a country is perceived as highly corrupt and a 100 means that a country is perceived as very clean.

Other eight sub-indices are obtained from the Legatum Prosperity Index (Legatum Institute, 2012a, 2012b). The prosperity index is unique by defining prosperity as the combination of wealth and well-being. These eight sub-indices for country performance are measured by some key areas listed in [Table 1](#).

Statistical Analysis

According to the meso paradigm (House, Rousseau, & Thomas-Hunt, 1995), studies of individual behavior within organizations suggest that researchers need to measure both individual-level variables as well as the attributes of the context. Hierarchical linear modeling (HLM), as a multi-level technique, is specifically designed to overcome the weaknesses of the disaggregated and aggregated data analysis methods discussed in Bryk & Raudenbush (1992). HLM examines both

lower-level and high-level variance in outcome measure, while maintaining the proper level of analysis for independent variables. The total variation in a dependent variable is decomposed into within-group variance and between-group variance, and the two sources of variation are studied simultaneously. Data were analyzed by SPSS 19 (Scientific Software Inc., Chicago). Because the clustering of respondents within countries/regions violates the ordinary least square (OLS) assumption of independent cases, we employ HLM to test for the association of happiness with individual-level and country-level variables. Three indices of goodness-of-fit were reported. The difference in deviance ($-2 \log$ likelihood) of two nested models had a χ^2 distribution with degrees of freedom (df) equal to the additional number of predictors in the larger model. The Akaike's information criterion (AIC) is an alternative measure of fit that corrects for model complexity (*i.e.*, number of predictors) (Akaike, 1998). Bayesian Information Criterion (BIC) is an index used as an aid in choosing between competing models. The index takes into account both the statistical goodness of fit and the number of parameters that have to be estimated to achieve this particular degree of fit, by imposing a penalty for increasing the number of parameters (Kass & Wasserman, 1995). Smaller values for $-2LL$, AIC, and BIC means better fit. Two-tailed p values are reported to reflect significance of the independent variables. The analyses were conducted using maximum marginal likelihood estimation for mixed effects regression model via the program of mixed model in SPSS (Hedeker & Gibbons, 1996).

Results

Table 2 reports the descriptive analyses for variables at individual level. Data were collected from 31 countries/regions. The sample size for each country ranges from 124 (Philippines) to 845 (France) subjects. The percentage of subsample of total

population ranges from 9.7 (South Africa) to 31 (Australia). The variables for country level are demonstrated in [Table 3](#).

Table 2 Subsamples and population samples for 31 countries

Country	n	%	N
Australia	588	31.0	1900
Belgium-Flanders	286	23.6	1210
Belgium-Wallonia	375	20.7	1816
Bulgaria	279	27.8	1003
Chile	292	18.7	1559
Croatia	236	19.7	1197
Czech Republic	343	19.0	1804
Denmark	233	16.8	1388
Finland	224	16.7	1340
France	845	25.5	3319
Germany-East	137	24.3	564
Germany-West	239	21.4	1115
Great Britain	212	22.7	936
Israel	210	17.4	1210
Japan	325	24.9	1306
Korea (South)	247	16.1	1535
Lithuania	253	21.4	1181
Netherlands	407	27.7	1472
Norway	355	19.4	1834
Philippines	124	10.3	1200
Poland	225	20.2	1115
Portugal	261	25.6	1019
Russia	323	21.4	1511
Slovak Republic	256	22.7	1128
Slovenia	248	22.9	1082
South Africa	292	9.7	3000
Sweden	308	26.6	1158
Switzerland	249	20.5	1212
Taiwan	383	17.4	2199
Turkey	166	10.8	1543
United States	324	21.2	1529
Total	9245		45385

The descriptive analyses for in individual- and country-level variables are shown in Table 3a and Table 3b. The correlation analyses for in individual- and country-level variables are shown in Table 4a and Table 4b.

Table 3a Descriptive analysis for variables at individual level

Individual level (n=9245)	Mean%	Mean	SD	Min	Max
Sex (female)	55.40			45.10	73.10
Marital status (married / civil)	56.80			29.10	72.00
Paid work (paid, partnership)	9.10			1.60	32.30
Age		72.92	6.29	65.00	102.00
Age square		5356.11	951.80	4225.00	10404.00
Education level		2.52	1.67	.00	6.00
Attendance of religious services		3.71	2.36	1.00	8.00
Health		2.40	1.24	1.00	5.00

Table 3b Descriptive analysis for variables at country level

Country level (n=31)	Mean	SD	Min	Max
Life Expectancy	77.44	6.22	49.48	84.19
Population ages >= 65(% of total)	15.22	4.59	3.83	24.40
LG GDP	3.71	.63	2.62	5.20
Health expenditure (% of total GDP)	9.03	2.49	4.07	17.85
Corruption index score	65.45	17.52	28.00	90.00
Economy	1.65	1.11	-.56	3.33
Entrepreneurship & Opportunity	2.46	1.12	-.12	4.14
Governance	1.82	1.60	-2.11	4.28
Education	1.59	.88	-.76	2.65
Health	1.88	1.23	-2.40	3.35
Personal freedom	1.61	1.78	-2.31	3.82
Social capital	1.16	1.86	-3.26	4.47
Safety & security	1.66	1.57	-1.85	3.71

Table 4a Correlation matrix for individual-level variables

Individual level (n=9245)	Mean	SD	1	2	3	4	5	6	7	8
1 Sex	1.55	.50	1							
2 Marital status	.57	.50	-.29 **	1						
3 Paid work	.09	.29	-.07 **	.04 **	1					
4 Age square	5356.11	951.80	.04 **	-.19 **	-.15 **	1				
5 Education level	2.52	1.67	-.13 **	.11 **	.07 **	-.14 **	1			
6 Attendance of religious services	3.71	2.36	.11 **	-.01	.02 *	.01	-.09 **	1		
7 Health	2.40	1.24	.14 **	-.10 **	-.09 **	.13 **	-.13 **	.01	1	
8 Happiness	4.98	1.07	-.08 **	.18 **	.06 **	-.03 **	.16 **	.03 **	-.28 **	1

** <.01, *<.05

Table 4b Correlation matrix for country-level variables

Country level (n=31)	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Life Expectancy	77.44	6.22	1													
2 Population ages >= 65(% of total)	15.22	4.59	.59 **	1												
3 LG GDP	3.71	.63	.20	.16	1											
4 Health expenditure (% of total GDP)	9.03	2.49	.32	.44 *	.52 **	1										
5 Corruption index score	65.45	17.52	.64 **	.53 **	.36 *	.61 **	1									
6 Economy	1.65	1.11	.68 **	.40 *	.52 **	.46 **	.82 **	1								
7 Entrepreneurship & Opportunity	2.46	1.12	.52 **	.52 **	.42 *	.65 **	.89 **	.79 **	1							
8 Governance	1.82	1.60	.60 **	.42 *	.41 *	.66 **	.96 **	.82 **	.90 **	1						
9 Education	1.59	.88	.64 **	.53 **	.25	.43 *	.57 **	.67 **	.71 **	.53 **	1					
10 Health	1.88	1.23	.86 **	.73 **	.43 *	.64 **	.75 **	.77 **	.73 **	.71 **	.77 **	1				
11 Personal freedom	1.61	1.78	.44 *	.46 **	.33	.63 **	.81 **	.70 **	.79 **	.80 **	.57 **	.61 **	1			
12 Social capital	1.16	1.86	.49 **	.40 *	.34	.53 **	.83 **	.78 **	.88 **	.85 **	.72 **	.65 **	.79 **	1		
13 Safety & security	1.66	1.57	.63 **	.71 **	.08	.46 *	.75 **	.63 **	.74 **	.68 **	.70 **	.75 **	.77 **	.66 **	1	
14 Happiness	4.96	.38	.42 *	.17	.46 **	.52 **	.67 **	.71 **	.60 **	.78 **	.31	.50 **	.65 **	.69 **	.43 *	1

** <.01, *<.05

Individual-level results

As shown in [Table 5](#), each hierarchical linear model analysis are conducted in a hierarchical fashion. This null model ([model 1](#)) is referred as a one-way ANOVA with random effects and is the simplest possible random effect linear model and is discussed in detail by Bryk and Raudenbush (1992). The motivation for this model is the question on how much countries/regions vary in their mean subjective happiness. [Model 1](#) provides estimates of the country variance (*i.e.*, variance in the dependent variable attributable to countries) and residual variance without individual-level covariates or county-level construct in the model. The intraclass correlation coefficient (ICC) for the subjective happiness was 12.5%, indicating that about 12.5% of the variation in symptoms was associated with differences between countries/regions. Studies argue that HLM is not necessary if ICC is sufficiently close to zero, as this implies that level-1 units (individuals) are statistically independent (James, 1982; Kreft & de Leeuw, 1998). Values of ICC smaller than .05 can invalidate hypotheses tests and confidence intervals when multilevel analysis is not used. Further, based on a likelihood ratio test, the null hypothesis that this variation is zero is rejected ($p < .001$).

We first add individual-level control variable in [model 2](#). Results indicate that male ($p < .001$), younger elderly ($p < .05$), and higher education ($p < .001$) are positively correlated with the elderly's subjective happiness. Results of [model 3](#) demonstrates that higher educational degree ($p < .001$), married status or with civil partnership ($p < .001$), and paid work ($p < .05$) relate positively to subjective happiness. Gender and age turn to be not significantly correlated. After two additional social variables ($p < .001$) are added in [model 4](#), more frequent attendance of religious services ($p < .001$) and better health status ($p < .001$) appears to be happier than the others when other individual-level variables holding constant.

Table 5 Results of mult-level analyses

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Fixed components									
Intercept	4.959 ***	4.878 ***	4.995 ***	5.069 ***	3.492 ***	4.000 ***	5.914 ***	6.080 ***	6.118 ***
Individual level									
Sex		0.080 ***	0.003	0.030	0.031	0.031	0.031	0.031	0.034
Age square		-2.62E-05 *	6.19E-06	0.004 *	2.83E-05 *	2.85E-05 *	2.85E-05 *	2.89E-05 **	2.976E-05 **
Education		0.074 ***	0.068 ***	0.053 ***	0.052 ***	0.052 ***	0.051 ***	0.051 ***	0.069 ***
Marital status			0.297 ***	0.278 ***	0.279 ***	0.279 ***	0.280 ***	0.280 ***	0.347 ***
Paid work			0.123 **	0.062 +	0.062 +	0.064 +	0.062 +	0.061 +	0.064 +
Attendance of religious services				0.032 ***	0.033 ***	0.033 ***	0.033 ***	0.033 ***	0.034 ***
Health				-0.195 ***	-0.195 ***	-0.195 ***	-0.194 ***	-0.194 ***	-0.231 ***
Country level									
Life Expectancy					0.010				
Population ages >= 65(% of total)					-0.019				
LG GDP					0.117	0.146 ***	0.103		
Health expenditure (% of total GDP)					0.019				
Corruption index score					0.009 *	0.010 **	-0.021 *	-0.019 **	-0.018 **
Economy							0.076	0.102 +	0.093 +
Entrepreneurship & Opportunity							-0.228 *	-0.205 *	-0.201 *
Governance							0.331 **	0.358 ***	0.275 **
Education							0.012		
Health							0.028		
Personal freedom							-0.063		
Social capital							0.092 +	0.072 +	0.106 **
Safety & security							0.040		
Governance * Marital status									-0.036 **
Governance * Health									-0.020 ***
Social capital * Degree									-0.012 **
Variance Components									
Between-country intercept variance	0.999 ***	0.984 ***	0.965 ***	0.908 ***	0.908 ***	0.908 ***	0.908 ***	0.908 ***	0.905 ***
Within-country variance	0.142 ***	0.128 ***	0.117 ***	0.104 ***	0.057 **	0.055 ***	0.028 **	0.027 **	0.024 **
-2 log likelihood	26344.445	26230.957	26058.515	25504.827	25525.374	25507.910	25513.772	25498.347	25486.839
Akaike's Information Criterion	26348.445	26234.957	26062.515	25508.827	25529.374	25511.910	25517.772	25502.347	25490.839
Bayesian Information Criterion	26362.708	26249.220	26076.777	25523.089	25543.635	25526.171	25532.032	25516.608	25505.099

***<.001, **<.01, *<.05, +<.10

Country-level results

When individual-level variables are held constant, higher educational degree, older age, married status, paid work, and better health are shown positively related to subjective happiness. It remains to be seen whether the unique characteristics of particular countries moderate or exacerbate these effects on happiness for the elderly. In [Table 5](#), [model 5](#) shows the main effect of a given country-level characteristics on the subjective happiness for the elderly. Considering main effects, GDP ($p < .10$) and the corruption score ($p < .05$) are shown to be positively correlated with happiness, but the other country-level variables (*i.e.*, life expectancy, population ages 65 and above of total population and % health expenditure of total GDP) are not statistically significant. Therefore, they are eliminated from the full model ([model 6](#)), in order to get a parsimonious model. In [model 7](#), eight sub-index of prosperity index are added to test the effect of country-level variables on the elderly's subjective happiness. As shown in results of [model 8](#), the country with better economy ($p < .1$), fewer entrepreneurship and opportunities ($p < .05$), better scores on governance ($p < .001$), and stronger social capital ($p < .10$) are shown to be positively correlated with higher score of happiness for the elderly.

Interaction effects of cross-level variables

In [Table 5](#), results of [model 9](#) show main effects of given country-level variables and their interaction with individual-level variables, controlling for other individual-level variables. Because country-level variables are highly correlated ([Table 4](#)), multiple the interaction of country-level variables are not considered and tested in a single model. Therefore, the interaction effects with individual variables are only tested for the main effect of country-level (*i.e.*, economic, governance, entrepreneurship & opportunity, and social capital) are significant in [model 8](#). As

shown in results of [model 9](#), governance, are associated with the effect of elderly's marital status ($p < .01$) and health ($p < .001$) on their subjective happiness. This means that the effect of the elderly's marital status and health on happiness is conditioned by governance. The governance does seem to reduce the happiness disadvantage for the elder with poorer health, and for the elderly who are not married or have civil partnership with someone. Also, social capital is shown to have effect ($p < .001$) on the slope of educational degree on the elderly's subjective happiness. Stronger social capital at country level leads to the difference between elderly' subjective happiness with lower education and higher education appear to be negligible. We also test for interaction effects between country-level variables economic and entrepreneurship & opportunity and other individual-level control variables (*i.e.*, sex, age, education, and paid work). These interaction terms did not statistically improve the model fit. We also took attendance of religious services into consideration, but again, this additional detail offered no further explanatory power.

Discussion

Our study contributes to knowledge about subjective happiness for the elderly in several areas. First, in line with the literature, at the individual level, our results demonstrates that higher educational degree, married status or with civil partnership, paid job, more frequent attendance of religious services, and better health status relate positively to subjective happiness. At the country level, the least corruption in government performance, better economy, fewer entrepreneurship and opportunities, better governance, and stronger social capital are shown to be positively correlated with higher score of happiness for the elderly.

Second, we find that the effect of individual-level variables on happiness for the elderly are conditioned by country-level variables, governance and social capital by

testing the interaction effects through MLA. The mechanism of cross-level effects on the relationship of individual-level variables on the subjectively perceived happiness for the elderly are seldom to be tested in previous studies. Most of literature measure happiness at the macro level by using aggregating the scores in total, rather consider the error variance both at the micro level and macro level. Using MLA can reduce the type I error and allows us to test the cross-level effects from country level to individual level by interaction. In our study, governance is associated with the elderly's diminished advantage in happiness compared to the elderly who is not married, or in poorer health. Also, social capital is associated governance is associated with the elderly's diminished advantage in happiness compared to the elderly who has lower educational degree. The governance and stronger socially capital leads to the differences of subjective happiness resulted from being social deprived among elderly appear to be negligible. Our findings expect to serve to raise the awareness of policymakers on the protecting effects of county-level variables on happiness for the elderly.

Third, the non-significant effect of life expectancy on the happiness for the elderly indicate that not all the elderly enjoy the longevity gain from greater life expectancy in their country as they age. In addition, other country-level variables, like health expenditure (% of total GDP) and population ages ≥ 65 (% of total) are shown to no effect on the elderly's happiness. Our arguments have important implication for the individuals and the government for social policy design respectively. Judging by the data, we argue that the government has the responsibility to provide significant social protection for the elderly, but it also should encourage citizens to assume full responsibility for their own well-being. Our results echo the four pillars to reach the Global Sustainability in the Millennium Development Goals, recommended by United Nation (2012): end extreme poverty, environmental sustainability, social inclusion,

and good governance.

Forth, our study provides an evidence that the negative effect of country's entrepreneurship and opportunity on the perceived happiness by the elderly. Previous study provides tentative evidence of an inverse U-shape relationship between (opportunity) entrepreneurship and national happiness. They conclude that opportunity-motivated entrepreneurship may contribute to a nation's happiness, but only up to a point (Naudé, Jos'e Ernesto Amor'os, & Cristi, 2012). On study argues that the motivation of the older entrepreneurs are different from the younger generation (Heimonen, Närhi, Kauppi, & Gustafsson-Pesonen, 2013). They indicate conomic gains are upraised but not in the sense of the most important item of motivation to be entrepreneurs. Social aspects such as belonging to a community and opportunities to create and maintain social contacts were found to be important drivers of entrepreneurship in golden years. There are many push and pull factors to be an entrepreneur, especially for people in later years. Our study is limited in finding how many elderly are entrepreneurs. We can only doubt if the negative relationship is due to the push factors for few older entrepreneurs are the pull factors for the general elderly? Do the pull factors become threatens to their current job security and stability? Answers to this questions is needed for further research in the future.

Conclusion

Our study contributes to knowledge about related factors related to subjective happiness for the elderly. Our findings expect to serve to raise the awareness of policymakers on the protecting effects of county-level variables on happiness for the elderly. Based on our findings, we suggest that the government has the responsibility to provide the elderly significant social protection from being socially deprivedand

participatory institution by supporting them in socially engaged. At the same time, the government should also encourage citizens to assume full responsibility to empower themselves to maintain healthy and being active.

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