

Spring 2012

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Recommended Citation

Lang, Julie (2012) "The Most Influential Factors in Determining the Happiness of Nations," *Major Themes in Economics*, 14, 33-54.

Available at: <https://scholarworks.uni.edu/mtie/vol14/iss1/5>

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The Most Influential Factors in Determining the Happiness of Nations

Julie Lang

ABSTRACT. Previous research has found that the most influential factors determining the happiness of nations are the Human Development Index (HDI) and the GINI index. Using data from The World Bank, United Nations Development Programme (UNDP) Human Development Reports, The World Database of Happiness, the Satisfaction with Life Scale, and the New Economic Foundation's The (Un) Happy Planet Index 2.0, this study tests three regression models to determine what factors are most influential in determining the happiness of nations, holding everything else constant. All three models suggest that plentiful precipitation contributes to happiness. Two models imply that low corruption, a high Human Development Index, and low unemployment also matter. One model finds a positive relationship between happiness and a more equal income distribution.

I. Introduction

"When I am abroad, I always make it a rule never to criticize or attack the government of my own country. I make up for lost time when I come home."

Winston Churchill

Governments have a difficult task. Along with being the first to take the blame if things go wrong, they are responsible for the wealth, health, and security of every individual [Davies 2009]. Not all governments are created equal. Some are better at governing than others. But what does "better" mean? Low corruption? Better health? High GDP? Or do all of these affect the happiness of the people?

The government of the country of Bhutan has made its most important goal the peace and happiness of its people and the safety and sovereignty of the nation. Bhutan's philosophy emphasizes Gross National Happiness (GNH) over financial measures such as Gross Domestic Product (GDP) [Alkire 2011]. Gross National Happiness statistics are not available for other countries, so other measures will be examined in order to find the most influential determinants of the happiness of nations.

The topic is important because life satisfaction ought to be one of the main goals of national and international policymakers [Becchetti,

Trovato, and Bedoya 2011, 273-290]. But how do we measure happiness? What is the connection between wealth and happiness? There is a growing body of literature that considers these questions.

II. Literature Review

Many authors equate the concepts of happiness, wealth, and life satisfaction [Ferrer-i-Carbonell 2005, 997-1019]. This matter of happiness, wealth, and personal satisfaction is not new to the world of science. Many economists, sociologists, and psychologists are investigating the issue to find out what makes us happier or unhappier.

Binswanger uses a treadmill as a metaphor for the continuous search for more happiness by striving for more income, which in turn creates more income but not more happiness [Binswanger 2006, 366-381]. The treadmill effect argues that happiness does not increase along with income because of peoples' concern about status. Binswanger's treadmill also suggests that time-saving technological development does not alleviate time pressure in people's lives. The multi-option treadmill means that beyond a particular level, more opportunities to spend time and money do not increase people's happiness.

Graham, Eggers, and Sukhtankar use panel data from Russia to show that there are many different factors that affect human well-being [Graham, Eggers, and Sukhtankar 2004, 319-342]. Some factors are determined by the socio-economic and demographic variables including income fluctuations, marital status modifications, and educational level. Other factors include self-esteem and optimism. The study concludes that people who have high levels of happiness are more likely to increase their future income because they are more likely to achieve their goals.

Alesina, Di Tella, and MacCulloch study the effect of inequality on individual well-being [Alesina, Di Tella, and MacCulloch 2004, 2009-2042]. According to their study, individuals are less happy when inequality is high and social mobility is low. Americans believe they are able to move up and down the income ladder whereas Europeans believe that they live in a less mobile situation. Individuals are less happy when there is a larger disparity between social classes.

Keely examines welfare as a function of income growth and the assortment of consumer goods [Keely 2005, 333-355]. There is a tendency for people to identify with a group, and they struggle to maintain its way of life. The harder they must struggle, the less happy

they are. Keely concludes that the continual growth of income and goods in developing countries does not lead to a similar increase in happiness after a particular point.

III. Measurements of Happiness

Happiness, or Life Satisfaction, has been measured using many different indices. This study considers three: the Happy Planet Index, the World Database of Happiness, and the Satisfaction with Life Scale. Three separate indices were used because comparing one person's level of happiness to another's is difficult; by its very nature reported happiness is subjective. Yet researchers have found that large data samples across nations and time show patterns in the determinants of happiness.

The first measure comes from the New Economic Foundation's "The (Un) Happy Planet Index" first published in July 2006 and updated in July 2009. The report presents the Happy Planet Index. The HPI takes into consideration both objective data as well as subjective data but does not use income as an explicit variable. It also accounts for how the planet's resources are used. The goal of development is to provide high standards of human welfare while responsibly consuming resources. The Happy Planet Index incorporates three separate indicators: ecological footprint, self-reported life satisfaction, and life expectancy. Ecological footprint measures the impact on the environment of human consumption. The ecological footprint measures how much land area is needed to sustain a given population at its present levels of consumption, technological development, and resource efficiency. The second factor, self-reported life satisfaction, is based on the views of American psychologist Ed Diener who defines the concept of well-being in terms of three dimensions: positive affect (the frequency that a person experiences positive moods and emotions), negative affect (the frequency that a person experiences negative moods and emotions), and life satisfaction (reflecting on an individual's overall evaluation of their life). This measure is created from international surveys which simply ask "If you consider your life overall, how satisfied would you say you are nowadays?" Responses are given on a scale of 1 to 10 with 1 being very dissatisfied and 10 being extremely satisfied. Although this method is not perfect, it is generally accepted worldwide as an indicator of human well being due to the comparisons with other national statistics ["(Un) Happy Planet Index 2.0" 2006]. The third indicator, life expectancy, measures

the average number of years that a person born in a country can expect to live. The Happy Planet Index is computed as follows:

$$\text{HPI} = \frac{\text{Life Satisfaction} \times \text{Life Expectancy}}{\text{Ecological Footprint}}$$

The HPI can be thought of as a measure of the ecological efficiency of delivering human well-being. It shows the average time of happy life produced by a given nation per unit of planetary resources consumed. Put another way, it reflects the efficiency with which countries convert the earth's finite resources into the well being of their citizens ["(Un) Happy Planet Index 2.0" 2006]. Although the Happy Planet Index does not directly reveal the "happiest" country in the world, it shows the relative efficiency with which nations convert the planet's natural resources into long and happy lives for their citizens. The nations at the top of the index show that it is possible to attain high life satisfaction and long life expectancy without over-stretching the planet's resources. Additionally, the HPI shows that high levels of resource consumption do not consistently produce high levels of well-being. It also reveals that there are different ways to achieve similar levels of well-being. The West can offer longevity and life satisfaction but only at a vast cost in terms of resource consumption ["(Un) Happy Planet Index" 2009].

The second measure is from The World Database of Happiness, the Happiness in Nations. The World Database of Happiness defines happiness as "the degree to which an individual judges the overall quality of his life-as-a-whole favorably" [Happiness in Nations 2012]. There are two components of happiness within this measure: hedonic level of affect, the degree to which pleasant effects dominate, and contentment, the perceived realization of wants. These components symbolize affective and cognitive evaluations of life and are seen as subtotals in the overall evaluation of life known as overall happiness. The hedonic level of affect can be measured in three ways: by direct questioning, by projective tests and by ratings based on non-verbal behavior. The preferred method is direct questioning, in particular when the individual is asked several times during a specific period how pleasant he/she feels at that time. On the other hand, contentment can only be assessed by using direct questions. It cannot be accurately measured by indirect questioning or by peer-ratings. The questions must clearly focus on aspirations of wants in

a life-perspective. In principle, happiness is measurable but not all the questionnaires and observation schedules used for its measurement are considered acceptable. Many measures that link to larger phenomena are left out in this database of happiness. All of the answers in this study are based on questions that successfully passed a test for face-validity. Moreover, accepted answers are classified in five different ways: i) focus, ii) time-frame, iii) mode of observation, iv) rating-scale type, and v) rating-scale range. The number of potential combinations is enormous because of all the sub-divisions within these classifications. Subtle differences in wording cause many questions to fit within the same combination. These questions are denoted by a supplementary sign so that each question has a specific code. Responses are given on an 11-step scale with 0 being very dissatisfied and 10 being extremely satisfied. The verbal scale has 3-steps: very happy, pretty happy, and not too happy. Examples of classification and scale types are found in Appendix I [Happiness in Nations 2012]. The World Database of Happiness (WDH) uses the word "happiness" to describe the subjective enjoyment of life-the degree to which an individual judges the overall quality of life-as-a-whole favorably.

The third measure is the Satisfaction with Life Scale (SWLS). The Satisfaction with Life Scale is created from a survey. The survey's questions allow individuals to weight areas of their lives in terms of their own values. It should be noted that measuring respondents' satisfaction with common areas might also provide useful additional information [Frisch 1992]. The Satisfaction with Life Scale is intended to measure an individual's global judgment of life satisfaction, which depends on a comparison of life circumstances to one's standards. Due to its brief format, it can be included in an evaluation with minimal cost in time. The reading level of the scale is between 6th and 10th grade levels, and therefore, is usable with most adults. The five items of the Satisfaction with Life Scale and scoring instructions can be found in Appendix II. Criticisms arise from the assumption that individuals place equal value on all life areas but there seems to be consistent results. In the end, the Satisfaction with Life Scale is a one-minute, five-item instrument designed to measure global judgments of satisfaction with one's life [Diener 2009].

IV. Possible Determinants of Happiness

The Human Development Index (HDI) is a significant alternative to other established measures of human development such as gross domestic product (GDP) [Sagar and Najam 1998, 249-264]. The HDI measures the average success of a country in three dimensions of human development: a long and healthy life, access to knowledge, and a decent standard of living. The HDI is the geometric mean of normalized indices measuring success in each of the dimensions [Klugman, et al, 2011]. The method for calculating this index is as follows:

$$\text{HDI} = (\text{H}_{\text{Health}} * \text{H}_{\text{Education}} * \text{H}_{\text{Living Standard}})^{1/3}$$

The H_i indices are normalized indicators of success. The health dimension, H_{Health} , captures life expectancy (le). The education dimension, $H_{\text{Education}}$, depends on mean years of schooling (mys) and expected years of schooling (eys). The living standard dimension, $H_{\text{Living Standard}}$, is calculated using Gross National Income (gni). Equations for the indicators are as follows:

$$H_h = \frac{le - le_{\min}}{le_{\max} - le_{\min}}$$

$$H_e = \left(\left(\frac{mys - mys_{\min}}{mys_{\max} - mys_{\min}} \right) \times \left(\frac{eys - eys_{\min}}{eys_{\max} - eys_{\min}} \right) \right)^{1/2}$$

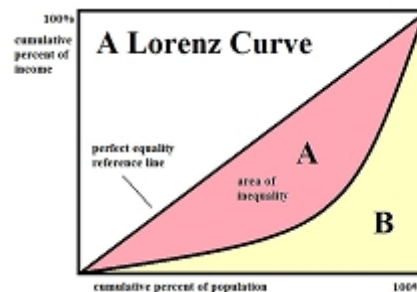
$$H_l = \frac{\ln(gni) - \ln(gni_{\min})}{\ln(gni_{\max}) - \ln(gni_{\min})}$$

Minimum and maximum values are set for each dimension in order for the indices to range between 0 and 1. Thus, life expectancy has a minimum of 20 years and a maximum of 83.2 years, mean years of schooling ranges from 0 to 13.2, expected years of schooling are in the interval of [0, 20.6], and gross national income has a minimum of 163 and a maximum of 108,211 [Klugman, Rodriguez, and Choi 2011]. The HDI ignores the relationship between the actual development of the country and the environmental impact of a country's development.

The GINI coefficient measures the statistical dispersion of income levels. It represents the average distance between the incomes of every person. The coefficient's size reflects the proportion of total income that a country would need to redistribute in order to obtain an equal distribution of income. It has a value between 0 and 1, where a coefficient of zero represents perfect equality and a coefficient of one implies perfect inequality. The GINI coefficient is derived from the Lorenz curve of income distribution that illustrates the actual degree of inequality in the distribution of income [Lambert and Aronson 1993, 1221-1227]. The GINI coefficient equation is shown below, with the Lorenz curve represented by the function $Y = L(X)$:

$$G = 1 - 2 \int_0^1 L(X) dX$$

Refer to the diagram below. The 45-degree line represents an even distribution of income. Area A, between the line of perfect equality and the Lorenz curve, represents inequality. Area B is the area underneath the Lorenz curve. The GINI coefficient can be calculated as $A / (A+B)$.



The GINI index is the GINI coefficient stated as a percentage (i.e. GINI coefficient * 100). The GINI index is an excellent way to measure inequality because it is a rate and therefore can be used to compare countries.

Ethnic group diversity is measured as the percentage of the largest ethnic group. For instance, Albania's ethnic groups are: Albanian 95%, Greek 3%, and other 2% (Vlach, Roma (Gypsy), Serb, Macedonian, and Bulgarian). So the largest ethnic group percentage would be 95% for Albanian. Data on ethnic diversity for all 111 countries was collected

from the World Factbook's People and Society ["People and Society" 2012].

Corruption is assessed using Transparency International's Corruption Perceptions Index which measures the perceived levels of public sector corruption in 183 countries and territories around the world. The Corruption Perceptions Index (CPI) ranks countries/territories based on how corrupt their public sector is perceived to be. It is a composite index, a combination of polls, drawing on corruption-related data collected by a variety of trustworthy institutions. The Corruption Perceptions Index reflects the views of observers from around the world, including experts living and working in the countries/territories assessed. A country/territory's score signifies the perceived level of public sector corruption on a scale of 0 to 10, where 0 means that a country is perceived as highly corrupt and 10 means that a country is perceived as very clean. A country's rank indicates its position relative to the other countries/territories included in the index ["Corruption Perceptions Index" 2011].

Data on the unemployment rate is from the World Factbook. The unemployment rate is the percent of the labor force without jobs that have actively sought work within the past four weeks. It is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labor force ["Unemployment Rate," 2012].

Average precipitation is measured in mm per year. According to the World Bank, precipitation is defined as any type of water that falls from clouds as a liquid or a solid. Average precipitation is the long-term average (over time and space) of annual precipitation in the country ["Average Precipitation in Depth" 2012]. Average precipitation and temperature are correlated based on the Global Climate Maps from the Sustainable Development Department (SD), Food and Agriculture Organization of the United Nations ["Global Climate Maps" 2012].

V. Model

The following regression equation was estimated:

$$\text{Life Satisfaction} = \beta_0 + \beta_1 (\text{GINI}) + \beta_2 (\text{HDI}) + \beta_3 (\text{Ethnic}) + \beta_4 (\text{Corrupt}) + \beta_5 (\text{Unemploy}) + \beta_6 (\text{AvgPre})$$

Three different regressions were run; each one used a different measure

of Life Satisfaction. GINI is the GINI index, HDI is the Human Development Index, Ethnic is ethnic group diversity, Corrupt is corruption, Unemploy is unemployment, and AvgPre is average precipitation.

It is predicted that the coefficient on the variable GINI will be negative. A decrease in the GINI index means that the income distribution is more equal, which should increase happiness.

The coefficient on HDI should be positive. Longer life, better education, and higher living standards should make people happier.

It is predicted that the variable Ethnic will be positively related to happiness. As the percentage of the largest ethnic group increases, the less diversity there is within the country. Less diversity means there are not as many things to possibly disagree about. Therefore, citizens will be happier.

The coefficient on Corrupt should also be positive. As the Corruption Perceptions Index score increases, the perceived level of public sector corruption falls. As a result, people should be happier.

The coefficient on the variable Unemploy is expected to be negative. It is expected that unemployed people are likely to be less happy. Therefore as the unemployment rate of the country decreases, the happiness of the country increases.

The coefficient on AvgPre is expected to be positive. This is because of the correlation between average precipitation and temperature. As the amount of precipitation increases, so does the average temperature. Individuals seem to be happier in warmer weather or tropical locations. Other variables were considered but not included because data on them were not available. These variables include creativity, spirituality, loyalty, welfare, desire for adventure, and government stability.

To summarize the models:

Dependent Variable:

Life Satisfaction

= measured according to the Happy Planet Index (HPI)

= measured according to the World Database of
Happiness

= measured according to the Satisfaction with Life Scale

Independent Variables:

GINI = GINI index values

HDI = Human Development Index values

Ethnic = Ethnic group diversity percentages

Corruption = Corruption Perceptions Index values

Unemploy = Unemployment values

AvgPre = Average precipitation values

VI. Data

Information on 111 countries around the world was collected and analyzed. The HPI index values are from The (Un) Happy Planet Index 2.0, HPI 2.0 Results downloaded from the New Economic Foundation (NEF). The NEF provides the complete data file containing overall scores as well as component results ["(Un) Happy Planet Index 2.0" 2009]. The World Database of Happiness, the Happiness in Nations provides a table of the average happiness. It is measured on a scale of 0 to 10 based on how much people enjoy their life-as-a-whole [*Happiness in Nations* 2012]. The Satisfaction with Life Scale (SWLS) is based on a five-item scale (see Appendix II) designed to measure global judgments of satisfaction with one's life [Diener 2009].

The GINI index values are from The World Bank, GINI Index databank, which gives the most recent year for which there is data. The data are based on primary household survey data developed from government statistical agencies and World Bank country departments ["World Bank"]. The Human Development Index (HDI) values are from the United Nations Development Programme (UNDP) Human Development Reports, which provides a table of the 2011 results. Life expectancy at birth is supplied by the UN Department of Economic and Social Affairs, expected years of schooling by the UNESCO Institute for Statistics, mean years of schooling by Barro and Lee, and GNI per capita by the World Bank and the International Monetary Fund [*Human Development Reports* 2011]. The ethnic group diversity values are from the Central Intelligence Agency's World Factbook, People and Society tab from each country ["People and Society" 2012]. The corruption variable values come from the Corruption Perceptions Index, which provides a table of 2011 results. The ranks are based on how corrupt the public sector is perceived to be ["Corruption Perceptions Index" 2011]. The unemployment values are from the Central Intelligence Agency's World Factbook, which provides a table of the most recently available unemployment rates ["Unemployment Rate" 2012]. Average

precipitation values come from a World Bank table of the most recent values (2009). The data is measured in mm per year of the long-term average in depth of annual precipitation in the country ["Average Precipitation in Depth" 2012].

VI. Results

Regressions were conducted to determine which variables have the largest influence on life satisfaction (measured against three different happiness indices). Forward, backward, and stepwise models were run. The regression results are reported in the Tables below.

Happy Planet Index			
Variable	Estimated Coefficient	T-Ratio	P-Value
GINI*	-1.041	-2.005	0.048
LOGGINI	44.693	1.997	0.049
HDI	24.463	1.949	0.054
ETHNIC	8.51E-02	1.798	0.075
CORRUPT	-1.6146	-0.9322	0.353
LOGCORRU	-3.0351	-0.3387	0.736
UNEMPLOY*	-0.19051	-2.313	0.023
AVGPRE*	6.67E-03	5.119	0.000
CONSTANT	-94	-1.45	0.150
R-SQUARE ADJUSTED			0.4014

World Database of Happiness			
Variable	Estimated Coefficient	T-Ratio	P-Value
GINI	1.37E-02	0.3206	0.749
LOGGINI	0.35019	0.1908	0.849
HDI*	4.2401	5.926	0.000
ETHNIC	-3.76E-03	-1.147	0.254
CORRUPT*	0.43999	2.703	0.008
LOGCORRU	-1.563	-1.904	0.060
UNEMPLOY*	-1.28E-02	-2.103	0.038
AVGPRE*	3.26E-04	2.845	0.005
CONSTANT	1.6098	0.3068	0.760
R-SQUARE ADJUSTED			0.6224

Satisfaction with Life Scale			
Variable	Estimated Coefficient	T-Ratio	P-Value
GINI	6.13E-03	3.25E-03	0.997
LOGGINI	35.971	0.4292	0.669
HDI*	73.817	2.938	0.004
ETHNIC	-1.59E-02	-0.1431	0.886
CORRUPT*	23.665	4.346	0.000
LOGCORRU*	-81.761	-3.007	0.003
UNEMPLOY	-0.27528	-1.147	0.254
AVGPRE*	1.05E-02	2.813	0.006
CONSTANT	19.298	8.07E-02	0.936
R-SQUARE ADJUSTED			0.4787

*Significant variables

The GINI index, unemployment, and average precipitation were significant in the The Happy Planet Index model. In The World Database of Happiness model, the Human Development Index (HDI), corruption, unemployment, and average precipitation were significant. The Satisfaction with Life Scale model found that the Human Development Index (HDI), corruption, and average precipitation were significant. The signs of the significant variables were all as expected. All three models had different variables that were very strongly significant, with the p-value less than 0.01. For the Happy Planet Index it was average precipitation, for the World Database of Happiness it was the Human Development Index (HDI), and for the Satisfaction with Life Scale it was corruption.

The regression for the Happy Planet Index has an Adjusted R-Squared of 0.4014, which means that 40.14 percent of the variation in the dependent variable can be explained by the regression line of:

$$\text{Life Satisfaction} = -94 - 1.041(\text{GINI}) - 0.19051(\text{Unemploy}) + 0.00667(\text{AvgPre}).$$

The regression line for the World Database of Happiness has an Adjusted R-Squared of 0.6224, which means that 62.24 percent can be explained by the regression line of:

Life Satisfaction = 1.6098 + 4.2401 (HDI) + 0.43999 (Corrupt) - 0.0128 (Unemploy) + 0.000326 (AvgPre).

The regression for the Satisfaction with Life Scale has an Adjusted R-Squared of 0.4787, which means that 47.87 percent can be explained by the regression line of:

Life Satisfaction = 19.298 + 73.817 (HDI) + 23.665 (Corrupt) + 0.0105 (AvgPre).

These are fairly good fits. There are many other variables that influence life satisfaction but they are hard to perfectly measure.

A possible issue is multicollinearity. One way to determine if there is multicollinearity is by the variance inflation factor (VIF). The VIF suggests which covariate to remove. The covariate needs to be removed if the VIF is greater than ten. The VIF values are all less than ten so the models did not need to be altered. Another way to assess multicollinearity is to examine the condition index. If the condition number is greater than the square root of one thousand then there is multicollinearity. Once again, multicollinearity is not indicated and the models do not need to be changed.

VII. Conclusion

This paper set out to find the most influential factors in determining the happiness of nations. The research provided insights into what these factors might be. All three models suggest that plentiful precipitation contributes to happiness. Two models imply that low corruption, a high Human Development Index, and low unemployment also matter. One model finds a positive relationship between happiness and a more equal income distribution. Even though the factors used explain some of the variations, there are still many other factors that are influential and immeasurable. If there were more time and better information, it would be good to gather data on other factors, specifically creativity, spirituality, loyalty, welfare, desire for adventure, and government stability.

Appendix I

Classification of happiness questions

<i>Substantive Meaning</i>	Focus	The kind of happiness addressed.
	Timeframe	The period considered.
<i>Method of Assessment</i>	Mode	The technique by which happiness is assessed.
	Scale-type	How the observation is scored.
	Scale range	Number of degrees of happiness distinguished.
<i>Sub-variant</i>	Wording	Variation in phrasing of otherwise equivalent query.

EXAMPLE

Self-report on single question (verbal):

'Taken all together, how would you say things are these days? Would you say that you are....?'

3 very happy

2 pretty happy

1 not too happy

This question is classified as follows: O-HL/c/sq/v/3/aa

Focus	Overall: Happy Life	O-HL
Timeframe	Current	c
Mode	Self report on single question	sq
Scale type	Verbal rating scale	v
Scale range	4 step rating scale	3
Sub-variant	Wording	aa

Classification by focus

Kind of happiness addressed

Overall appraisal of life

Keyword happiness

O-HL Overall: Happiness in Life

O-HP Overall: Happy Person

O-H? Overall: Happiness: item not reported

O-H* Overall: Happiness: various items

Keyword life-satisfaction

O-SLu Overall: Satisfaction with Life (unspecified)

O-SLC Overall: Satisfaction with Life-Course

O-SLL Overall: Satisfaction with Life one Leads
O-SLS Overall: Satisfaction with Life-Situation
O-SLW Overall: Satisfaction with Life-as-a-Whole
O-SP Overall: Satisfied Person
O-SQL Overall: Satisfaction with Quality of Life
O-SL? Overall: Satisfaction with Life: item not reported
O-SL* Overall: Satisfaction with Life: various items

Further keywords

O-BW Overall: Best vs. Worst possible life
O-DT Overall: Delighted vs. Terrible life
O-G BB Overall: Good-Bad Balance
O-LWL Overall: Life Worth Living
O-QLS Overall: Quality of Life-Situation
O-* Overall: various items

Sum-scores

O-Sum Overall: Summed overall appraisals of life-as-a-whole

Hedonic level of affect

Self estimated average

A-AOE Affect: Average Overall Estimate

Computed average

A-ARE Affect: Average Repeated overall Estimates (time sampling)
A-ASA Affect: Average of Specific Affects

Computed Affect Balance (positive minus negative affects)

A-BB Affect: Balance (Bradburn's index, ABS)
A-BBr Affect: Balance (Brenner's index)
A-BD Affect: Balance (Diener's Daily Mood Form)
A-BL Affect: Balance (Lichter's index)
A-BK Affect: Balance (Kamman's index)
A-BS Affect: Balance (Schultz's index)
A-BC Affect: Balance (Cohen's index)
A-BW Affect: Balance (Watson's index, PANAS)

Further items

A-CP Affect: Cheerful Person
A-CA Affect: Cheerful Appearance
A-? Affect: item not reported
A-* Affect: various items

Sum-scores

A-Sum Affect: Summed appraisals

Contentment*Overall self estimate*

C-RA Contentment: Realization of Aspirations
C-RG Contentment: Realization of Goals
C-A Contentment: Accomplishments in life
C-W Contentment: getting things Wanted

Computed average

C-ASG Contentment: Average Success in Goals
C-P Contentment: Person

Various items

C-? Contentment: item not reported
C-* Contentment: various items

Sum-scores

C-Sum Contentment: Summed appraisals

Mixed questions*Ambiguous items*

M-TH Mixed: Time Happy
M-PL Mixed: Pleasure in Life
M-FH Mixed: Feel Happy
M-LS Mixed: Life Success

Mixed multiple items

M-AO Mixed: Affect + Overall
M-AC Mixed: Affect + Contentment
M-CO Mixed: Contentment + Overall
M-ACO Mixed: Affect + Contentment + Overall

Classification by time-reference

Period to which life-appraisal pertains

Period of average

Present

c current (today, these days, present)

cw last week

cm last month, last few weeks

cq last quarter

cy last year

Momentary

m momentary (now)

mi last instant

mh last hour

mp last part of day

md last day

Generally

g generally

Lately (past and future happiness not included)

se since event

h hitherto

Miscellaneous

u time frame unspecified

? time frame not reported

* various time frames combined

Period of change

ch1w change in 1 week

ch2w change in 2 weeks

ch3w change in 3 weeks

ch1m change in 1 month

ch2m change in 2 months

ch1y change in 1 year

Classification by observation mode

Method by which appraisal is estimated

Self reports*Single closed questions*

sq 1 question

sqt 1 question, asked twice (in same interview)

sqr 1 question, repeated (in successive interviews)

Multiple closed questions

mq <1 questions

mqt <1 questions, asked twice (in same interview)

smr <1 questions, repeated (in successive interviews)

Open questioning

oq open question

pq projective questioning

fi focussed interview

Content-analysis of ego-documents

cr life review

cd dairies

Ratings by others*Ratings based on clinical contact*

rc rating by clinician

Ratings based on daily contact

rdp rating by peers

rdn rating by nurses

rdt rating by teachers

rdf rating by family

rdv rating by various

Ratings based on systematic observation

ri rating by interviewer (of happy appearance)

tsb time sampling of happy behaviors

Miscellaneous

* Multiple observation methods

? Observation method not reported

Classification by rating-scales

How observations are scored

Scale type

Verbal scales

v verbal: each response option labeled

Numerical scales

n numerical: only extremes defined

graphical scales

c circles

f faces

l ladder

lg Life-graph (happiness plotted on a time-scale)

m mountain scale

ol open line scale (responses categorized afterwards)

t thermometer scale

Miscellaneous

%t % time happy

rs rank-order of subjects

? rating scale not reported

* various rating-scales combined

Appendix II

Satisfaction with Life Scale

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Slightly Disagree
- 4 = Neither Agree or Disagree
- 5 = Slightly Agree
- 6 = Agree
- 7 = Strongly Agree

- _____ 1. In most ways my life is close to my ideal.
- _____ 2. The conditions of my life are excellent.
- _____ 3. I am satisfied with life.
- _____ 4. So far I have gotten the important things I want in life.
- _____ 5. If I could live my life over, I would change almost nothing.

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