

What is the impact of social well-being factors on happiness?

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Abstract

Purpose – The purpose of this study is to examine the effect of social support, healthy life expectancy, freedom to make life choices, generosity, corruption perception, real gross domestic product per capita and the Gini index on happiness.

Design/methodology/approach – In this study, the sample consists of 137 countries observed over the period 2017–2019. A multidimensional approach is used consisting of a principal component analysis and an econometric linear regression model.

Findings – The findings indicate that perception, taking care of other people, corruption perception, freedom to make life choices and healthy life expectancy are the most determining factors of social well-being.

Practical implications – Well-being benefits countries by improving living standards. Indeed, taking care of other people, corruption perception, freedom to make life choices and healthy life expectancy directly and positively correlate with social well-being.

Originality/value – This study contributes to the previous literature in three ways. First, this paper provides fresh and recent data on social well-being. Second, the author introduced a multidimensional approach using a principal component analysis of the different social well-being factors to detect correlation between these indicators and to determine homogeneous clusters. Third, through these indicators, a country's leaders can formulate policies to enhance social well-being because it is closely linked to the improvement of the standard of living, good governance and therefore an increase in GDP.

Keywords Happiness, Inequality, Subjective well-being, Income, Data analysis

Paper type Research paper

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1. Introduction

Well-being is not just the absence of diseases. It is a complex combination of a person's physical, mental, emotional and social health. Well-being is strongly linked to happiness and life satisfaction. Well-being has been defined as the combination of feeling good and functioning well; the experience of positive emotions such as happiness and satisfaction as well as the development of one's potential, having some control over one's life, having a sense of purpose and experiencing positive relationships (Huppert, 2009).

The World Health Organization (2001) defines positive mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”.

JEL Classification — C51, C83, D63, I31, P46

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Therefore, it is important for politicians that they show an understanding of people's well-being. Indeed, a population's well-being represents an essential objective for public authority. Well-being refers both to material (income, fortune, etc.) and immaterial benefits for a population (education, health and social relationships).

The "Well-Being" measurement index includes around 44 indicators covering three areas: society, economy and environment (Wittenbecher and Quentin, 2015). The pivotal creed is the idea that social, human, natural and economic capital should be used, by means of different processes, to create well-being (Bradburn, 1969; Irwin *et al.*, 1979; Bartram, 2012). Nevertheless, taking into account the social, economic and ecological dimensions serves a purely economic objective, which is promoting the gross domestic product (GDP).

In this paper, we propose to empirically examine these proposals by mainly defining the important indicators that improve social well-being by using a principal component analysis to detect correlation between these indicators and to determine homogeneous clusters. To my knowledge, previous studies have rarely used such an approach.

This study tests the effect of social support, healthy life expectancy, freedom to make life choices, generosity, corruption perception, real gross domestic product per capita and the Gini index on happiness.

The rest of the paper is structured as follows. In the first section, we review the literature on the concept of well-being, its measurement and the different obtained empirical findings. The second section presents the results of the estimates of the principal component analysis and the econometric model and discusses the impact of social well-being factors on happiness, in a sample of 137 countries observed during the 2017–2019 period. Finally, the paper concludes with a summary of the main results.

2. Literature review

Previous research has shown that a higher degree of well-being results in increased physical benefits, such as lower cardiovascular incidences, strokes and sleeping disorders, and increased productivity and creativeness at both the professional and personal levels.

Measuring well-being is certainly much more difficult than measuring economic development. It takes into account intangible values, such as a population's social relationships, health and satisfaction. The economic development of a country is commonly measured by changes in GDP (Weiss and Fershtman, 1998). This important economic indicator, however, reaches its limits when it comes to capturing all the dimensions of a population's well-being and the quality of life. Indeed, GDP does not inform about the state of health of a population, neither the balance between private and professional life, the quality of environment or the level of satisfaction of a population (Tavernier *et al.*, 2015). To properly measure the well-being of a country, the analytical framework needs to be broadened.

2.1 *What is well-being?*

The well-being of a population amounts to having sufficient means to meet its needs, organize its life independently, use and develop its capacities and pursue its objectives (Pawin, 2014). It therefore relates to quality of life (Tavernier *et al.*, 2015). In addition to material dimensions such as income, wealth, consumption and housing, the notion of well-being also covers intangible dimensions such as education, health and social relationships (Baudelot and Gollac, 2003; Frey, 2008). It also includes the legal and institutional framework which allows citizens to participate in political life and which ensures the physical safety of people.

Finally, well-being depends on environmental factors, such as water quality, air quality and noise pollution.

In an approach to well-being that aims to be as broad as possible, we consider not only the objective living conditions dimension, but also a population's subjective perceptions (De Pietro *et al.*, 1984; Argyle *et al.*, 1994). This results in the following research questions:

- RQ1. How do people rate their housing conditions and the state of the environment?
- RQ2. Do they feel safe?
- RQ3. Are they satisfied with their life in general?

2.2 How do statistics measure well-being?

To measure well-being, the Federal Statistical Office (FSO) in Switzerland has developed around 44 indicators (Wittenbecher and Quentin, 2015). The base line idea is that well-being results from the allocation of the economic, natural, human and social capital of a country by means of different processes. The purely economic approach, where only GDP growth is considered, is extended to other social, economic and ecological dimensions. In line with this proposal, the measurement index is subdivided into seven main themes:

- (1) *Framework conditions*: The processes of creating, distributing and preserving well-being take place within a social, economic and ecological framework. This is bound by the structure of society and the economy and takes into account the reactions of society to environmental changes. It also includes public institutions (social insurance, public health, education system and political institutions) as well as certain areas of political action (social, financial, environmental policies, etc.).
- (2) *Resources*: These represent the inputs necessary for the creation of well-being. We consider four types of resources: economic, natural, human and social resources. In addition to nonfinancial and financial resources, resources include, for example, environment quality, education and health of a population, social relationships and the level of trust in society.
- (3) *Activities*: These refer to all the processes of transforming resources into goods and services. This system of indicators takes into account different activities in the social, economic and environmental spheres. In addition to economic production processes, it includes natural processes, domestic and family work (preparing meals, cleaning, playing with children) and leisure activities.
- (4) *Effects on resources*: The processes of the creation and use of goods and services transform resources. These transformations are either the result of targeted investment decisions (investments in material capital, investment in human capital and education), or side effects which can be either positive or negative (increase in social capital through unpaid work, decrease in natural capital through pollution of soil, water and air).
- (5) *Goods and services*: They can be tangible or intangible and represent the offer of well-being. They include dimensions that satisfy particular needs, as well as some fundamental functions of the environment without which life would not be possible. In addition to economic goods and services, dimensions such as water supply, natural landscapes or volunteer work are considered.
- (6) *Use of goods and services*: Effective well-being results from the use and consumption of goods and services.

- (7) *Well-being*: This includes tangible and intangible, objective and subjective fundamentals. This indicator system considers ten dimensions of well-being. It should not, however, be seen only as the end result of the production processes and use of goods and services. Some dimensions serve as inputs in the process of creating this very well-being (financial wealth of households or human capital) and other components arise directly during the process of its creation: income and capital from labor is acquired through economic production, and some activities that are carried out for themselves can directly contribute to well-being.

The 2020 World Happiness Report, released on March 20, 2020, ranks 156 countries based on an average of three-year surveys between 2017 and 2019. The 2020 report especially focused on the environmental, social, urban and natural dimensions, and considers links between happiness and sustainable development.

2.3 Review of previous studies

This indicator system broadens the perspective in several respects. Below are some findings that touch on several economic development dimensions of well-being. In particular, we observe that not all population groups participate equally in economic development and well-being.

A study in Switzerland (Wittenbecher and Quentin, 2015) found that disposable income is growing at a slower rate than GDP. In other words, GDP growth is only partially reflected in income. Households spend on average 57% of their gross income on consumer spending. The main item is housing and energy, which absorbs over 25% of expenditure. This study also showed that more than 80% of the Swiss population enjoys good mental health. Employed workers have significantly fewer psychological problems than nonactive people and the unemployed. Integration into a social network is one of the main factors that protect mental health. The greater the social integration, the better the mental health will be. The authors also found that consumption of materials and energy tends to increase less sharply than GDP. This indicates a gain in terms of efficiency. In other words, the Swiss use less materials and energy to produce a range of added value. Finally, this study revealed that satisfaction with life is high. Indeed, nearly three-quarters of the inhabitants say they are very satisfied with their life. People with higher incomes are more satisfied than those with low incomes. This applies to the Swiss as well as to foreigners.

In another study, Ruggeri *et al.* (2020) used data from 2006 to 2012 to examine the well-being of 21 countries. They concluded that both the composite score and individual dimensions from their approach represented a means of analysis for exploring appropriate policies to protect and improve well-being.

3. Empirical analysis

3.1 Description of data

The World Happiness Report's use of a single item subjective well-being measure is fundamentally different from more traditional Index-based approaches, which use a range of indicators such as the United Nation's Human Development Index, the 2011 OECD Better Life Index, or the 2013 Social Progress Index (OECD, 1976, 2011; Helliwell *et al.*, 2017).

In this study, data are collected from people in 137 countries over the period 2017–2019 and taken from the Gallup World Poll (GWP). Each measured variable reveals a population-weighted average score on a scale ranging from 0 to 10 which is tracked over time and compared against other countries. The main variables used by OECD and GWP currently are:

- (1) *Social support*: the perception and reality that one is cared for, receives assistance from other people, and most importantly, that one is part of a supportive social network.

- (2) *Healthy life expectancy*: is average life in good health.
- (3) *Freedom to make life choices*: is the national average of binary responses to the question “Are you satisfied or dissatisfied with your freedom to choose what you do with your life?”
- (4) *Generosity*: is the state of being kind and generous.
- (5) *The corruption perceptions index*: (CPI) is an index which has been published annually by Berlin-based Transparency International since 1995, which ranks countries “by their perceived levels of public sector corruption, as determined by expert assessments and opinion surveys”.
- (6) *Real gross domestic product per capita*
- (7) *Gini index*: measures the degree of income inequality on a scale from 0 (= total equality of incomes) to 1 (= total inequality).

The descriptive statistics for the full set of 137 countries are reported in Table 1. This table shows that the average happiness score is 5.558. For this variable, the median is 5.556, showing that this distribution is symmetrical. In other words, 50% of the countries have a score above 5.556, while the rest are below this value.

A principal component analysis was carried out in order to detect correlation between the different indicators and to determine homogeneous clusters. However, this method requires a matrix with n rows representing the countries and p variables representing the chosen indicators. For this purpose, we used the 2020 GWP report, which features the averaged happiness score over the period 2017–2019 for each country. The matrix is thus composed of 137 rows (countries) and 8 variables (indicators).

Table 2 shows that the indicators were selected form a coherent set. Indeed, the KMO measure [1] is greater than 0.7. This table indicates that we need to reject the null hypothesis that correlation between the indicators are zero (Probability of Bartlett’s test is zero, less than 5%). In other words, the different indicators do correlate with each other.

Table 3 shows the correlation matrix confirmed by Bartlett’s test [2]. We can see that the indicators which correlate most with well-being are real GDP per capita (0.771), health life

	Obs	Mean	Std. Deviation	Min	Max
Happiness score	137	5.55820	1.093948	2.817	7.808
Real GDP per capita	137	0.89737	0.360726	0	1.537
Social support	137	1.17358	0.269346	0.352	1.548
Healthy life expectancy	137	0.71309	0.241335	0.101	1.138
Freedom to make life choices	137	0.47200	0.136981	0.066	0.693
Generosity	137	0.18643	0.102654	0	0.57
Perception of corruption	137	0.13645	0.114909	0	0.533
Percentage Gini index	137	35.0782	11.97127	0	62.73

Table 1.
Descriptive statistics

Kaiser–Meyer–Olkin measure of sampling adequacy (K-M-O)	0.840
Bartlett’s test of sphericity	Approx. Chi-Square df Sig
	610.698 28 0.000

Table 2.
KMO and
Bartlett’s test

Table 3.
Correlation matrix

	Happiness score	GDP	Social support	Healthy life	Freedom	Generosity	Corruption	Gini index
Happiness Score	1.000	0.771	0.762	0.768	0.538	0.064	0.417	-0.313
GDP	0.771	1.000	0.788	0.849	0.383	-0.110	0.298	-0.422
Social support	0.762	0.788	1.000	0.730	0.417	-0.051	0.184	-0.293
Healthy life	0.768	0.849	0.730	1.000	0.399	-0.097	0.325	-0.373
Freedom	0.538	0.383	0.417	0.399	1.000	0.253	0.439	-0.213
Generosity	0.064	-0.110	-0.051	-0.097	0.253	1.000	0.314	-0.093
Corruption	0.417	0.298	0.184	0.325	0.439	0.314	1.000	-0.278
Gini Index	-0.313	-0.422	-0.293	-0.373	-0.213	-0.093	-0.278	1.000

expectancy (0.768), social support (0.762) and freedom (0.538). The negative Gini index (-0.313) shows that increasing inequalities negatively affect social welfare. This finding is important since, in the authors' opinion, it has not been reported in previous studies.

The plot of the indicators (Figure 1) provided by the principal component analysis shows that citizens with higher well-being scores are those with high GDP, high average life in good health and those who socially support others.

On the other hand, the plot shows that the Gini index negatively affects social welfare. This finding is consistent with that of *Alesina et al. (2004)* in Europe, and of *Niimi (2018)* in Japan.

Figure 2 shows the distribution of the different countries. If we compare the two Figures 1 and 2, we notice that the countries on the right part of the y-axis are those that are known for their social well-being (Finland, Luxembourg, North Cyprus, Belgium, . . .), unlike the others where we find a high level of inequality (South Sudan, Madagascar, Chad, Congo, . . .).

An econometric study is then conducted to further probe this dependency relationship between the different indicators and social well-being.

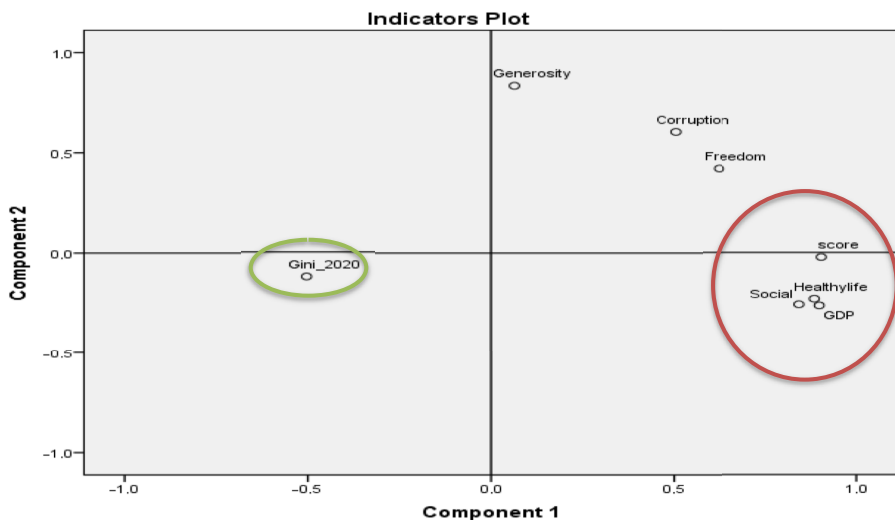


Figure 1.
Indicators plot

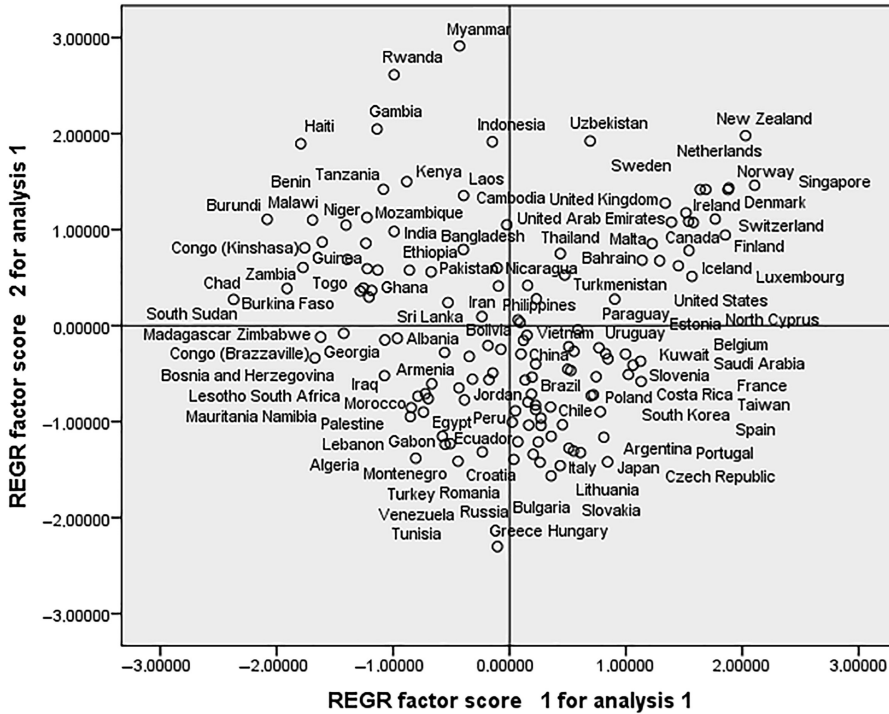


Figure 2.
Countries plot

3.2 Econometric approach

In order to determine the impact of the different indicators on social well-being, we opt to eliminate the Gini index, since its impact is found to be negative on social well-being. The data come from the 2020 GWP report, based entirely on survey scores and answers to the main life evaluation question asked in the poll, and represents the average over the period 2017–2019 for each country.

Then, we propose the following model. Subscripts i ($i = 1 \dots 137$) denote country index.

$$HS_i = \alpha_1 + \alpha_2 GDP_i + \alpha_3 SS_i + \alpha_4 HLE_i + \alpha_5 FRE_i + \alpha_6 GEN_{i+} + \alpha_7 COR_{i+} + \varepsilon_{it} \quad (1)$$

where:

HS : Happiness score,

GDP : Real GDP per capita,

SS : Social support,

HLE : Healthy life expectancy,

FRE : Freedom to make life choices,

GEN : Generosity,

COR : Perception of corruption.

3.3 Results and discussion

The results for this regression are reported in Table 4.

The resulting model is:

$$HS_i = 1.762 + 0.597GDP_i + 1.351SS_i + 1.179HLE_i + 1.2FRE_i + 0.515GEN_i + 1.25COR_i \quad (2)$$

The estimates show that all indicators positively affect social well-being, with the exception of state of being kind and generous, which is not significant.

Furthermore, we found that perception and taking care of other people is the most determining factor (1.351) of social well-being, together with corruption perception (1.25), freedom to make life choices (1.2) and average life in good health (1.179). Income (0.597) and state of being kind and generous (0.515) come in second position. Author's estimates show that the R-squared is 0.7439, showing that overall, the model is significant.

Figure 3 shows the linear relationship between each indicator with happiness. We notice that the relationship between well-being indicators and happiness is highly dynamic, except for the generosity indicator, which is stable.

3.4 Comparative study

The contribution of this study is the use of a multidimensional approach based on a principal component analysis and a linear regression, which is unlike traditional approaches which

Happiness score	Coef	Std. Err	t	p > t	[95% conf. Interval]	
GDP	0.597	0.291	2.05***	0.042	0.021	1.172
Social support	1.351	0.309	4.37*	0.000	0.739	1.964
Healthy life	1.179	0.395	2.98*	0.003	0.398	1.961
Freedom	1.200	0.437	2.75*	0.007	0.336	2.064
Generosity	0.515	0.527	0.98	0.330	-0.527	1.557
Corruption	1.250	0.510	2.45**	0.016	0.24	2.26
Constant	1.762	0.26	6.78*	0.000	1.248	2.277

Table 4.
Estimation of the regression model

Note(s): *, ** and *** denote statistical significance at the 1, 2 and 5% levels, respectively

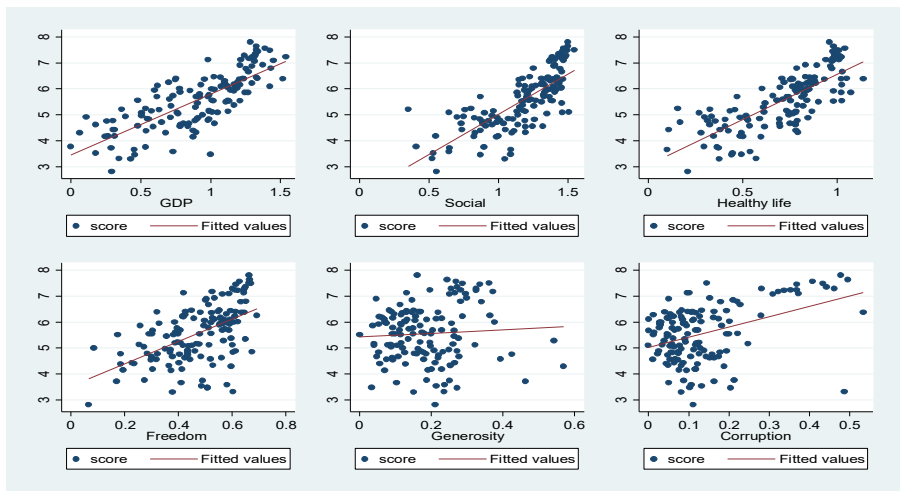


Figure 3.
Countries plot

tend to use single measures (e.g. happiness, life satisfaction) or economic proxies. Indeed, this approach has the advantage of studying the different variables simultaneously, rather than in a bivariate way.

4. Conclusion

The aim of this paper is to examine the impact of human well-being indicators on happiness.

First, we presented a multidimensional approach represented by a principal component analysis of the different factors affecting social well-being to detect correlation between these indicators and to determine homogeneous clusters. To this end, we used survey-based GWP data collected from 137 countries covering the period 2017–2019. We found that perception and taking care of other people, corruption perception, the freedom to make life choices, average life in good health, income and state of being kind and generous positively affect happiness, except the Gini index, which has a negative effect.

Second, we opted to eliminate the Gini index, since it negatively affects social welfare, and we used an econometric model to determine which factors affect well-being the most. We found that perception and taking care of other people is the most determining factor of social well-being, together with corruption perception, freedom to make life choices and average life in good health.

The present study may open up venues for further research. For example, more variables that account for well-being need to be considered, such as political and civil unrest, internal conflicts or natural disasters such as the Covid-19 pandemic. It is likely that these shocks can seriously affect people's social well-being.

Notes

1. The Kaiser–Meyer–Olkin (KMO) test is a statistical measure to determine how suited data are for factor analysis.
2. Bartlett's test is used to test homoscedasticity.

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Sweden	Argentina	Bangladesh
New Zealand	Honduras	Gabon
Austria	Latvia	South Africa
Luxembourg	Ecuador	Iraq
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