General classification of countries: situation by thematic area and Quality of Life Index (QLI)

Criteria for classifying countries' situation

In the past the Social Watch Annual Report has included a ranking of countries' situations based on a wide range of indicators. Up until now the method used to construct this ranking has consisted in calculating the unweighted average of all the scores obtained by a country in each of the thematic areas related to development.[1] Given the practical difficulties involved in taking so many different dimensions into account, we have been working on designing an index that allows us to provide a functional summary of the overall situation of a given country using the available information. Previously, the Social Watch methodology had produced an index ranking countries in relation to each other, based on the average values of their current situations by area. In contrast, the new index we present in this edition aims not only to provide a criterion for ranking the countries in relation to each other, but also to allow the situation in a given country to be monitored over time, by tracking changes in its summary value.

There are several possible strategies for constructing such an index. One is to take into account the different thematic areas and their component indicators, in order to obtain (through factorial analysis) a statistical index that, by reducing the number of dimensions, comes closer in empirical terms to explaining variance between countries. This option, however, is significantly hampered by the heterogeneity of the set of available indicators, both in terms of the number of countries for which information is available, and the degree of comparability between countries.[2]

A second approach, which has already been adopted in several summary indexes in use by various international organisations, is to select certain indicators for which the above-mentioned difficulties can be minimised since there is sufficient and comparable data available for them, and which in empirical terms show an evolution that reflects that of a series of basic indicators of economic and social development.

In principle, opting for summary measurements means consciously leaving out certain dimensions that on a conceptual level may be considered essential. By reducing the analytic dimensions and selecting a set of variables that has a strong correlation with the range of original variables allows us still to explain the same levels of variance between countries while using fewer variables. In other words, reducing the number of variables allows us to include the situation of a greater number of countries.[3]

Within this general approach, Social Watch decided to take as its starting point the methodological proposal presented in the 2001 Philippines Social Watch Report[4] relating to the construction of a Quality of Life Index (QLI). After a series of adjustments, this index finally proved to have a very high correlation[5] with the ranking based on the complete set of indicators, obtained using the criteria adopted by Social Watch up until now.

The Quality of Life Index (QLI): a proposal for measuring evolution in poverty and welfare

Definition and antecedents

The QLI[6] is an approach for measuring poverty and welfare based purely on capabilities[7] since all its component indicators refer to outcomes and not simply means for reaching the goals of development. The index is therefore based on indicators directly linked to development goals and excludes variables relating to income.

The dimensions included in the QLI are infant health, reproductive health and education. The indicators originally selected in the Philippines SW report were malnutrition in under-fives, percentage of births attended by skilled health personnel and the proportion of children enrolled in first grade who reach fifth grade.

These indicators are approximate measures of human capabilities and have been shown to be sensitive enough to summarise a population's overall situation with respect to health, educational performance and literacy.

This index covers three dimensions that are fundamental to any approach to measuring quality of life and human development.

On a conceptual level, the choice of the variable relating to staying in primary school until 5th grade is justified on the grounds that were just the rate of coverage to be taken into consideration this would ignore the phenomenon of high primary school drop-out rates present in less developed countries.

The inclusion of the variable relating to malnutrition in children under five also appears to be an adequate proxy for food security in childhood. The Philippines Social Watch report considered the possibility of substituting it with infant mortality, since the latter is an indicator that shows a high correlation with the former and is more widely available in national statistical records.[8]

The percentage of births attended by skilled health personnel is in practical terms an accurate measure of levels of health care, which enjoys a degree of independence from geographical or climatic factors that could distort analyses of the health situation that were based on prevalence of diseases. In addition, it should be noted that this indicator focuses attention on two at-risk groups: children and pregnant women.

This index was used in the Philippines to carry out sub-national (provincial) comparative studies and the results obtained were very encouraging. The QLI proved to be a very good tool for measuring aspects relating to the quality of life, and presented a strong correlation with poverty levels measured using data on incomes and with the Human Development Index (HDI).

Poverty and quality of life

Poverty, quality of life and welfare are complex concepts. It is almost impossible to reflect the complexity and dynamic nature of a particular situation by using a simple numerical value. However, a well-designed index can be an efficient tool for identifying the incidence of poverty, defining objectives and monitoring and evaluating strategies. The indicators

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1   The criterion used up until now by Social Watch assumes a certain consistency in the behaviour of the indicators that figure in each thematic area, in that it is assumed that a country can be ranked in a given area on the basis of at least half its component indicators. For a detailed explanation of the methodology used up to the present, see the Methodology section in the Social Watch annual reports from 1997 to 2003.

2   Problems of comparability derive from the use of different definitions and different sample populations, and substantial differences in the dates for which data is available in different countries. The greater the number of indicators, the greater the difficulties, and the fewer the countries which can be included in any statistical analysis.

3   The basic supposition underpinning this strategy is that the relations identified between variables in the case of countries with full sets of data are maintained in those countries where the full set of data is lacking.

4   Raya, Rene R (2001). "An alternative measure of poverty and human capability: Introducing the Quality of Life Index".

5   For the 79 countries with complete sets of data, a value of 0.902 was obtained in the Spearman rank correlation coefficient.

6   The Quality of Life Index developed by Action for Economic Reforms Philippines is derived from the Capability Poverty Measure developed by Amartya Sen and popularised in the UNDP's Human Development Index (HDI).

7   In contrast to the HDI, which combines capabilities indicators with income measures.

8   This suggestion has been taken up and the indicator used in the construction of the QLI in this report is the mortality rate among children under the age of five.

used cannot replace a more comprehensive social analysis of the situation, but they can provide a good starting point for the development and design of programmes since they provide tools for measuring and comparing situations.

Income-based measurements of poverty have functional limitations that make precise monitoring of their evolution difficult. These indices depend on household-level surveys of spending and consumption which, because of the high cost that they entail, are not always carried out in a systematic manner in all countries. The QLI therefore represents a good alternative when these other indicators are not available. We must also add that it is not our intention that this index substitute other existing measurements of poverty and welfare, but rather that it complement them by highlighting specific dimensions of these phenomena.

The comparative advantage of using the QLI derives from the simplicity of the calculation involved (see technical notes) and the low costs that it implies since it does not depend on expensive household surveys. The index is consistent with national and international statistical systems and can be easily calculated from indicators regularly generated by governments and agencies. In addition, not only is it a useful tool for ranking countries' relative situations, but it also enables time series analysis to be used in monitoring poverty.

There is no doubt room for improvement in the concept and design of the QLI, which is still being perfected. Some components could be modified to improve its sensitivity for measuring welfare.

Results

The QLI index successfully reproduced the ranking of countries on the basis of the average for each thematic area, excluding the area of gender equity, for which a separate country ranking was con-

structed. The correlation between the QLI and this ranking was 0.9.[10] This means that the QLI proved to be a good summary measure of the dimensions Social Watch works with, even though these include other thematic areas than those strictly included in the index.

The correlation between the ranking by thematic areas and the final ranking produced by the QLI was as follows:

	SPEARMAN RANK CORRELATION COEFFICIENT[11]
Social Watch ranking according to countries' average final situation by thematic area	0.93
Reproductive health	0.89
Education	0.84
Information, science & technology	0.82
Morbidity & mortality	0.77
Food security	0.75
Water & sanitation	0.73
Public expenditure	0.48

As can be seen in the table, in addition to the considerable degree of correlation between the QLI ranking and each individual area, there is also very strong correlation with the final average generally used by Social Watch.

With respect to the relationship between the QLI and the indicators relating to the specific areas included in the index, we can see that the QLI provides an acceptable explanation of variance between countries .

The table shows those correlations which have Pearson's linear correlation coefficients of more than +/- 0.65:

INDICATORS BY AREA	PEARSON'S LINEAR CORRELATION COEFFICIENT[12]
HEALTH	
Under-five mortality rate	**-0.85**
Infant mortality rate	-0.85
% children immunised against polio	0.71
% children immunised against DPT	0.71
% children immunised against measles	0.68
% children immunised against TB	0.62
REPRODUCTIVE HEALTH	
% births attended by skilled health personnel	**0.95**
Maternal mortality rate	-0.84
Use of contraceptives	0.72
Prenatal health care	0.71
EDUCATION	
% children reaching 5th grade	**0.85**
Illiteracy rate (15-24 year olds)	-0.77
Enrolment in primary school	0.64

From the table we can see that quite apart from the foreseeable strong correlation between the QLI and its component indicators, there is also a high correlation with the other indicators in the areas from which the QLI component indicators are taken.

In addition, it is worth highlighting the strong correlation between the QLI and other measurements of poverty and welfare.

	PEARSON LINEAR CORRELATION COEFFICIENT
HDI 2003 (value)	0.90
HPI (value)	-0.80
International Poverty Line	-0.66
GDI per capita (2001)	0.62

The high correlation (0.90) between the HDI and the QLI can be explained by the fact that they share many of the same component indicators.

These results encourage us to continue to develop further this type of capabilities-based tool, which, as we have already pointed out, allows poverty and welfare to be measured independently of measures of income levels.

Without doubt there is a great need to improve the series, and the accuracy and consistency of the data used in the generation of the key indicators of social development. The gaps in the information available are a constant problem plaguing the definition of objectives and the process of monitoring. The QLI was designed precisely to fill these gaps and so to contribute towards analyses of poverty and policy design and planning for development.

	HDI	LIFE EXPECTANCY	ILLITERACY (AGES 15-24)	ENROLMENT IN PRIMARY EDUCATION	ENROLMENT IN TERTIARY EDUCATION	GDI 2001
QLI	0.90	0.79	-0.77	0.64	0.70	0.62
Under-five mortality rate	-0.92	-0.90	0.73	-0.70a	-0.66	-0.58
% births attended by skilled health personnel	0.85	0.72	-0.74	0.61	0.63	0.55
% children reaching 5th grade	0.71	0.64	-0.58	0.40	0.59	0.59

The ranking of countries in the QLI is presented in the table enclosed with the 2004 edition of Social Watch. Countries showing the same values in the index are presented in alphabetical order. ■

QUALITY OF LIFE INDEX (QLI)

Technical notes: computing the country Quality of Life Indices

In calculating the QLI for this report we used two of the same indicators applied in the Philippines (percentage of births attended by skilled health personnel, and percentage of children reaching fifth grade). However, the third indicator used in the Philippines - malnutrition among under-fives - has been replaced here by the mortality rate among children under five.

The selection of these three indicators was also determined by the criterion of seeking to obtain the highest possible number of units of analysis with information available at national and even local levels, in order to ensure consistency with international standards of measurement, and thus allow comparisons to be made and links identified with existing indicators of welfare.

The number of countries with information available for each indicator was considerable: 193 countries had infant mortality rate statistics, 120 had primary school cohort survival data, and 179 had information on births attended by skilled health personnel. The number of countries for which all three indicators were available was further increased through the imputation[9] of values for missing indicators. Imputed values were calculated according to the arithmetic mean for the group to which the country in question belonged, in the relevant thematic area. In this way, it was possible to calculate the QLI for 173 countries.

The QLIs in this report were computed using the unweighted average of the actual values of the three component indicators: under-five mortality, attended births and primary education cohort survival rate. For the sake of simplicity, the three indicators were assigned equal weights in the computation of the QLIs. The actual reported values of the under-five mortality rate and cohort survival ratio for countries were used without transforming or standardising the values since both indicators already form part of international statistics.

Thus, the corresponding indices for under-five mortality rate and primary cohort survival ratio are represented as:

Infant Health Index is $I_1 = 100 - M$, where M is the under-five mortality rate (expressed as a percentage) or the probability of dying between birth and exactly five years of age expressed per 100 live births.

Education Index is I_2 where I_2 is the primary school cohort survival rate, or percentage of children entering first grade of primary school who eventually reach grade five.

Reproductive Health Index is I_3 where I_3 is the percentage of births attended by skilled health personnel (doctors, nurses or midwives).

The Quality of Life Index for a particular country is then obtained by calculating the simple average of the three component indices:

$$QLI = (I_1 + I_2 + I_3) / 3$$