

Social Development Index as Capability Proxy: An Illustration of South and East Asia

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ABSTRACT

UNDP has developed Human Development Index (HDI), which is composed of life expectancy at birth index, education index, and GDP index. In order to fully grasp the scope of human capability in the process of development, Social Development Index has to be created. This paper is an effort to construct such an index. We propose an index called, Social Development Index, which has as its components elements such as HDI, poverty index, inequality index, and environment index.

The human capability can and should be fully utilized in the context of community or society in which one lives and enjoy one's livelihood and family. Because UNDP's HDI includes only three aspects, longevity, education, and GDP, as its component, despite its relative simplicity, it has been pointed out that HDI neglect lots of other aspects of human condition. This paper shows that by including poverty, inequality, and environment as additional component, it is possible to construct Social Development Index. It is shown that SDI represent rather interesting comparison between South Asia and East Asia.

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UNDP has developed Human Development Index (HDI), which is composed of life expectancy at birth index, education index, and GDP index. In order to fully grasp the scope of human capability in the process of development, Social Development Index has to be created. This paper is an effort to construct such an index. We propose an index called, Social Development Index, which has as its components elements such as HDI, poverty index, inequality index, and environment index.

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This paper is an effort to a first trial step into a bit more useful measurement of "Development," that Amartya Sen insists in his work, *Development as Freedom*. This paper tries to show that it is possible to measure human capability in the context of the society in which people live, make livelihood, and struggle to achieve what people can and hope to do and be. Social Development Index (SDI) that this paper propose to constructs includes such indices as poverty, inequality, and environment.

By using the data from Human Development Report, an illustration of the case of comparison between South Asian and East Asian developing countries will be shown. With the same sort of caveats that are inevitable with any index problem, the usefulness of the SDI will be discussed, as a framework of understanding social development in general and the capability development in specific. This paper also uses a case study of South Asia and East Asia.

1. Introduction

UNDP has developed Human Development Index for the occasion of publication of

Human Development Report, 1990. HDI was created to capture the degree of human development in relative terms of the countries over the world. HDI has slowly gained its citizenship in development specialists and academics, policy-makers and practitioners. Now HDI is an often-cited index for development comparisons with respect to the Human Development among development specialists world over.

HDI is composed of three parts of which the first is life expectancy index that represents a long and healthy life, the second is education index that represents knowledge, and the last is GDP index that is intended to represent a decent standard of living. For the construction of HDI, four indicators are used; life expectancy at birth for the first part, adult literacy rate and gross enrolment ratio for the second part, and GDP per capita (PPP US \$) for the third part of HDI. These four indicators have weights of $\frac{1}{3}$, $\frac{2}{9}$, $\frac{1}{9}$, and $\frac{1}{3}$, respectively in the construction of HDI.

In order to make international comparison clear, easy and meaningful, these three dimensional indicators are calculated by using maximum values and minimum values in the world as goalposts unless one is expressed as a percentage from the beginning. Thus, the Index is shown in relative terms between 0 and 1.

UNDP has developed besides HDI other indices related to human development. Human Poverty Index-1 (HPI-1) is applied to developing countries especially designed to indicate human deprivation in developing countries. Probability at birth of not surviving to age 40 is used for the dimension of a long and health life. Adult illiteracy rate is used for the dimension of knowledge. Percentage of population without sustainable access to an improved water source and percentage of children under weight for age are together used for the dimension of a decent standard of living, as representing deprivation in a decent standard of living.

On the other hand, Human Poverty Index-2 (HPI-2) is constructed for the use of selected OECD countries that includes the dimension of social exclusion in addition to the same three dimensions in HPI-1 above. Thus, HPI-2 has four dimensions: a long and healthy life dimension uses probability at birth of not surviving to age 60 as its indicator; knowledge dimension uses indicator of percentage of adults lacking functional literacy skills; a decent standard of living dimension adopts its indicator of percentage of people living below the poverty line; and social exclusion dimension relies on the indicator of long-term unemployment rate.

Human Development Report also shows the gender-related development index (GDI) and the gender empowerment measure (GEM). GDI focuses women's average achievement to reflect the inequality between men and women. GEM shows women's opportunity rather than their capabilities, and captures gender inequality in the following dimensions: political participation and decision-making; economic participation and decision-making; and power over economic resources.

This paper is an attempt to show how Sen's capability concept can be more appropriately presented, focusing on improving the current HDI formulation. In the next section of this paper, some of the conceptual clarifications are presented followed by critical examination of the HDI for the effort of constructing social development index. Section three actually formulates the social development index (SDI) as a more appropriate capability proxy than HDI. Section four is an illustration of SDI using comparison among countries between South Asia and East Asia.

2. Capability Approach as Applied to Social Development

Amartya Sen's capability concept is, has been, often misunderstood at worst as synonym of individual's "potential ability" and at least as expanding latent and realized "opportunity" that individuals and groups have. Both understandings of the capability miss a very important nature of Sen's idea of "capability" and make the conceptualization too narrow from the original concept.

In order to understand the concept of capability, the concept of human functionings must be properly understood. Essentially, functioning is 'a various things a person may value doing or being.' Beings and doings that people have value constitute human functionings. Sen believes that this provides a better conceptual space for evaluating social states by which to assess social welfare than utility, opulence, income, preference fulfillment, or even the Rawlsian primary goods.

Sen argues that social arrangements should be evaluated according to the extent of freedom people have to promote or achieve objectives they value. Capability concerns an individual's freedom to promote or achieve functionings that he or she values. Freedom relates with the real opportunity that we have to accomplish what we value. Thus, for Sen the goal of development is to expand capability not just income or utility, and to equalize

the capability each person has to enjoy valuable things and states of beings not just opportunity, income, commodities, or utility.

Therefore, the ultimate goal of capability, thus, freedom, is to achieve meaningful and fulfilled lives that one has in the world in which we live. This will be accomplished by the actualization of functionings by which we evaluate people's well-being.

It is important to properly translate a conceptualization into practical measurement by which we can evaluate the state of affairs, the opportunity and results of beings and doings of people in a society. S. Alkire succinctly points out this point in her work (2002). 'To render Sen's 'freedom' or capability approach ready to put into practice in the assessment of poverty reduction activities entails basting (i) Sen's proposition that individual advantage be judged in the space of capabilities rather than economic growth or primary goods with (ii) an account of how non-utilitarian assessments of valuable beings or doings that respect pluralism may be founded; (iii) an account of the role of actual individual and social choices in identifying value and resolving conflict; (iv) an account of how basic capabilities relevant for the pursuit of human development may be defined in general (or by institutions) and of the further permanent need to specify and weight basic capabilities according to participants' reflectively held values; . . .'

The HDI constructed by UNDP as mentioned in the previous section is an effort in such direction. It has, and had, a role such that the group of indices opened new way of thinking toward the direction that is in line with the conceptualization of Sen's capability.

However, some weaknesses of HDI in current formulation have been pointed out for some time. They are summarized, besides regular cautions related about any index construction and uses,

(i) its use of per capita GDP (in PPP terms) as an indication for the dimension of "decent standard of living," which the capability approach identifies as incomplete, not useful and not relevant alone as the goal of development. It is necessary but not sufficient.

This criticism for using GDP index as a part component for the HDI is profound.

(ii) It neglects all other dimensions of valuable human functionings than a long and healthy life, knowledge, and a decent standard of living, as represented by life expectancy index, adult literacy index, gross enrolment ratio index, and GDP index. Excluded, for example, here are nutritional intake level, medical facilities accessible to the poor, economic and social inequality, however defined (gender disparity,

income inequality, age discrimination, etc.), the degree of how much individuals are participating in important social decision-making, and how much individuals and groups are informed about the state of affairs. Though necessary in construction of any index, this criticism is particularly relevant regarding Sen's criticism of utilitarian approach in terms of paucity of informational contents.

- (iii) Since HDI uses the guidepost method to standardize by adopting the highest number as 100 and the lowest as 0 in the world each year, it is possible that a particular country's HDI of a certain year may be much lower than the previous year. Despite a quite improved real situation of some dimensions of the country, this can happen because for example the income of the highest country grows much faster than other countries. That is, the highest income country experiences significantly higher growth in GDP per capita, because lower population growth in the highest income country, higher population growth in all other countries, or any other reasons. In this case, the country in discussion may be placed relatively lower ranking in spite of the fact that overall betterment other than income have taken place.
- (iv) It does not pay any attention to the interaction aspect between and among the individuals and groups in a society. Since Sen's capability approach essentially concern freedom through which people realize and achieve valuable human functionings, it is intrinsically important to view the freedom in the context of the society in which individuals and groups maintain their livelihood. It is apparent that there is a need in this respect to expand HDI itself to cover a wider dimensions relating to community or society in which one lives.

Considering the above critiques, a new construction of an index is proposed in the next section. Particular care is taken to the above points (i), (ii), and (iv). The guidepost method utilized in the HDI can be considered as necessary for the cross-section international comparison in each given year, but not so over the time series sense. Concrete idea for the new construction of 'social development index' is developed in the next section.

Table 1. Human Development Index, Selected Years

	1990	1995	1997	2000	2001
East Asia					
Cambodia	0.512	0.543	0.514	0.543	0.556
China	0.624	0.679	0.701	0.726	0.721
Hong Kong	0.857	0.875	0.880	0.888	0.889
Indonesia	0.619	0.659	0.681	0.684	0.682
Korea	0.814	0.848	0.852	0.882	0.879
Laos	0.449	0.485	0.491	0.485	0.525
Malaysia	0.721	0.759	0.768	0.782	0.794
Myanmar	...	...	0.570	0.552	0.549
Philippines	0.713	0.731	0.740	0.754	0.751
Singapore	0.819	0.858	0.888	0.885	0.884
Thailand	0.705	0.739	0.753	0.762	0.768
Viet Nam	0.603	0.646	0.664	0.688	0.688
<i>average</i>	0.676	0.711	0.709	0.719	0.724
South Asia					
Bangladesh	0.414	0.443	0.440	0.478	0.502
India	0.519	0.553	0.545	0.577	0.590
Iran	0.646	0.690	0.715	0.721	0.719
Nepal	0.413	0.451	0.463	0.490	0.499
Pakistan	0.440	0.472	0.508	0.499	0.499
Sri Lanka	0.692	0.715	0.721	0.741	0.730
<i>average</i>	0.521	0.554	0.565	0.584	0.590

Source UNDP, Human Development Report, 2003

3. Social Development Index

The proposed social development index takes a drastic view to the extent to remove

GDP per capita index, though it is expressed in PPP terms. There are three reasons for replacing GDP index from our proposal. The first reason is that even though it is counted as PPP measure of GDP, the income measure is not at all relevant for the purpose of international comparison of capability, freedom, and 'development' index. People do not go to other countries. Individuals do not go to the US, to China, or to Kenya to buy their daily necessities. The second reason is that there are lot more things than money for flourishing human capability, and that the scope of the opportunity of other things (non-monetary) would be wider in low income countries, in particular. That may depend on the degree of marketization and commercialization of the economy. The third reason is that money in itself may be regarded as the source of trouble beyond certain amount of holding. In this respect, GDP per capita express in PPP is nothing to do with capability, individuals' sense of achievement, human relationship, relative position in the society, participation in the social activities, concerns to other people, particularly to those whose living condition faces various hardships.

There will be additional dimensions; poverty reduction, equality, and sustainable environment. By adding these three dimensions, it is designed to make the index to reflect the social opportunity, nature of the society in which individuals live, and the social environment under which people actualize their real functionings.

Thus, new social development index has the following six dimensions:

- (1) A long and healthy life
- (2) Knowledge
- (3) A decent standard of living
- (4) Poverty reduction
- (5) Equality
- (6) Environment

For the construction of SDI, the simple average of the six indications from each dimension is taken. Six dimensional indices are explained next; Life expectancy index is simply life expectancy at birth, same as in HDI, to represent the dimension (1) A long and healthy life. Education index is composed of adult literacy rate and gross enrolment ratio, this is the same as in HDI too, to represent the dimension (2) Knowledge.

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	a long and healthy life	knowledge	a decent standard of living	poverty free	equality	environ- ment, sustainable	SOCIAL DEVELOP- MENT INDEX	SDI ranking	HDI ranking
	life expect- ancy at birth	education	1 - % of childre under weight for age, under 5	1 - % of people below \$1 a day	1 - Gini index	% of urban population with access to improved sanitation	simple average of 6 items on the left		
East Asia									
Cambodia	0.540	0.640	0.550	...	0.596	0.560	0.577	18	130(13)
China	0.760	0.790	0.900	0.839	0.597	0.690	0.763	9	104(8)
Hong Kong	0.910	0.830	...	...	0.566	...	0.769	8	26(1)
Indonesia	0.690	0.800	0.740	0.928	0.697	0.690	0.758	10	112(11)
Korea	0.840	0.960	0.920	0.980	0.684	0.990	0.896	1	30(3)
Laos	0.480	0.630	0.600	0.737	0.630	0.670	0.625	14	135(15)
Malaysia	0.800	0.840	0.820	0.980	0.508	...	0.790	6	58(4)
Myanmar	0.530	0.720	0.640	...	...	0.840	0.683	13	131(14)
Philippines	0.740	0.900	0.720	0.854	0.539	0.930	0.781	7	85(6)
Singapore	0.880	0.870	0.860	...	0.575	1.000	0.837	2	28(2)
Thailand	0.730	0.880	0.810	0.980	0.568	0.960	0.821	3	74(5)
Viet Nam	0.740	0.830	0.670	0.823	0.639	0.820	0.752	11	109(10)
<i>average</i>							0.754		
South Asia									
Bangladesh	0.590	0.450	0.520	0.640	0.682	0.710	0.599	16	139(16)
India	0.640	0.570	0.530	0.653	0.622	0.610	0.604	15	127(12)
Iran	0.760	0.730	0.890	0.980	0.570	0.860	0.798	5	106(9)
Nepal	0.570	0.600	0.520	0.623	0.633	0.730	0.596	17	143(17)

Pakistan	0.590	0.410	0.620	0.866	0.670	0.950	0.684	12	144(18)
Sri Lanka	0.790	0.820	0.710	0.934	0.656	0.970	0.813	4	99(7)
<i>average</i>							0.682		

Source: UNDP, Human Development Report, 2003

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For a decent standard of living, the percentage of children underweight for age, under age 5, is adopted in place of GDP per capita index. The percentage is taken from the indicator used in HPI-1, but the formula is reversed in the sense it is subtracted from number 1. It is taken as that a society cannot be said having a decent standard of living so long as it has high percentage of children under weight.

For poverty reduction, low absolute poverty is desirable. So, the indicator is constructed by subtracting the percentage of people whose livelihood is less than \$1 a day from, number 1.

For equality, (1 – Gini Index) is used because the higher the Gini coefficient the bigger the dispersion or inequality in the society. For the sixth and the last dimension, the percentage of urban population with access to improved sanitation is used in the SDI formula.

Finally, all these 6 dimension indices as shown in the number between 0 and 1 are taken to simple average, which means that each index has 1/6 equal weight in SDI. This weight system may be controversial because each society values different dimensions quite differently. In addition to the reason of no strong weighting system available internationally, the fact that the first three currently HDI related dimensions and the last three rather society related dimension have equal weights of one half each seems rather reasonable.

4. Case of South Asia and East Asia

Table 1 shows HDI in selected years for 12 East Asian countries, and 6 South Asian countries taken from HDR, 2003. In each year's Human Development Report, countries whose HDI is higher than 0.8 is classified as high human development countries. Countries whose HDI is lower than 0.8 but higher than 0.5 is medium human

development countries. Therefore, low human development countries are countries with HDI lower than 0.5. According to this classification, in 2001 Hong Kong, Korea, and Singapore are high human development countries in these two regions. Nepal and Pakistan are in the low human development category.

In this paper, the selection of the region, country, and the year are used for the illustrative purposes only. However, it is interesting to note some specific points observed from the Table 1. For example, Laos and Bangladesh as well as Nepal and Pakistan were low human development countries in 1990. The former two countries have gotten out of low human development category only after 2001. The average HDIs for two regions have steadily increased except in East Asia for 1997. This is because Myanmar's data are added with lower number, other countries constantly shown improvement.

Table 3. SDI Ranking And difference from HDI

SDI ranking		HDI ranking	SDI - HDI
1	Korea	3	0.017
2	Singapore	2	-0.047
3	Thailand	5	0.057
4	Sri Lanka	7	0.223
5	Iran	9	0.093
6	Malaysia	4	-0.004
7	Philippines	6	0.030
8	Hong Kong	1	-0.120
9	China	8	0.042
10	Indonesia	11	0.076
11	Viet Nam	10	0.028
12	Pakistan	18	-0.046
13	Myanmar	14	0.134
14	Laos	15	0.100
15	India	12	0.093
16	Bangladesh	16	0.097

17	Nepal	17	0.097
18	Cambodia	13	0.021

Source: Table 1. and Table 2.

The social development index (SDI) is calculated according to the formula mentioned in the above section. All the data are taken from the Human Development Report 2003, The results is shown in the Table 2. The average SDI for the East Asian countries is 0.754, and that of South Asia is 0.682.

In order to detect the nature and characteristics of SDI as distinguished from HDI, Table 3 shows the ranking of countries by the SDI and HDI. Also shown is the difference in the value of SDI and HDI. There are number of interesting observations are possible.

Through the ranking difference, remarkable cases are Sri Lanka, Iran, and Pakistan. All of these countries' SDI rankings are significantly higher than that of HDI; from 7th to 4th in Sri Lanka, from 9th to 5th in Iran, and from 18th to 12th of Pakistan. On the other hand, Hong Kong (from 1st to 8th), India (from 12th to 15th), and Cambodia (from 13th to 18th) are remarkable case of down rankings. It can be thought that these are the effects of removing GDP index and adding social indices like poverty reduction, equality, and environmental indicators in SDI. Therefore it may be said that Sri Lanka and Iran are the countries whose development with respect capability are higher than their respective incomes indicate. On the other hand, India and Cambodia as well as Hong Kong are the countries/regions whose capability development are lower than expected from their income levels. It should be noted that these analysis are only valid in terms of relative rankings within these regions in 2000-01 data.

Table 3 shows also the numerical differences between SDI and HDI. A positive number means that SDI is higher than HDI, and a negative indicates otherwise. Out of total of 18 countries in our illustration, only four shows negative numerical difference. Singapore, Malaysia, Hong Kong, and Pakistan are the cases, of which Hong Kong is a clear sample of large decline in SDI compared to HDI. Together with the ranking

differences, Hong Kong seems to be the case in that despite a high income in their economy capability development is not well represented by the current HDI. Sri Lanka is the case on the other end. By taking SDI Sri Lankan position became much higher in ranking as well as in number than HDI within the region. This means that even though their income is low Sri Lankan capability development situation much higher in SDI than shown by HDI. Iran, Myanmar, Laos, Bangladesh, and Nepal have significantly higher numeric in SDI than HDI. But, their ranking are not much different in either method.

It should be noted that the results here depend much on (1) choice of indicator, (2) number of dimensions, and (3) the way of aggregating these sub-indices, decision of like weights attached, harmonic means, or arithmetic means. Also, it is important to recognize the limitations of the index, because there are always the temptation to try to include as many aspects and functionings in the index. However, there is no theoretical basis to identify the ideal number of sub-indices or indicators that should be included. It would be a matter of practical concern of cost of data gathering and usefulness of the result.

5. Conclusion

This paper tries to show that it is possible to measure human capability in the context of the society in which people live, make livelihood, and struggle to achieve what people can and hope to do and be. Social Development Index (SDI) that this paper proposes to constructs includes such indices as poverty reduction, equality, and sustainable environment.

By using the data from Human Development Report, an illustration of the case of comparison between South Asian 6 countries and East Asian 12 developing countries are shown. Remarkable cases are Hong Kong and Sri Lanka. The former is found to be much lower in SDI than HDI, and the latter is found to be much higher in SDI than HDI. Other interesting observations are made with respect to Iran, Pakistan, India, and Cambodia.

It is possible to widen the coverage of countries to the same range as UNDP does. It is hoped that in that way the usefulness of the proposed Social Development Index as a better proxy index for the Sen's capability development would be captured.

With the same sort of caveats that are inevitable with any index problem, the usefulness of the SDI are discussed, as a framework of understanding social

development in general and the capability development in specific. This paper uses a case study of South Asia and East Asia in order to illustrate the usefulness and beneficiary differences of the proposed SDI compared with current HDI reported in UNDP's HDR.

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