

CONSTRUCTION OF A MODIFIED QUALITY OF LIFE INDEX – APPLICATION TO SOUTH ASIAN COUNTRIES

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[According to the development economics, per-capita measures of National Income and lately Quality of Life Index were considered as indices of development or wellbeing of a society. These orthodox indices of economic development appear as incomplete, disputed and sometimes non-comprehensive and misleading too. United Nations Development Programme's (UNDP's) well-known Human Development Index (HDI) is basically a universally accepted measure of the quality of life of human being. Beside this an Inequality-adjusted HDI (IHDI) and a Gender Inequality Index (GII) are constructed separately in HDR 2011. But yet there is no single index which will be able to capture the basic dimensions of quality of life with existing inequality and gender discrimination altogether. Not only providing these attainments but also the socio-political environment of the economy where these facilities are being provided is very much important in the question of quality of life of an economy. The most important drawback of HDI is that it does not consider human rights as the component of human development. Hence in this research work, the focus will be on the construction of a modified Quality of Life Index (QLI). A more comprehensive single modified QLI, viz., Modified Borda Score (MBS), will be constructed representing inequality-adjusted, gender-inequality-adjusted quality of life capturing all the major components of human development approach specially also the rights component. And also we apply this newly constructed modified index MBS to South Asian countries for the year 2013 with secondary data set. We also analyze the results comparing ranking on MBS and that on some other important indexes.]

Keywords: Human Development Index, Quality of Life Index, Human Rights, Inequality-adjustment, Gender-inequality-adjustment.]

Introduction

In this paper the focus is on the components of quality of life and also on an appropriate method to quantify the quality of life of an economy. This is an area of interest, because, nowadays the concept of development of an economy

has changed totally – it depends not only on the growth of gross national product (GNP) or rise in personal income, rather development means enlargement of human capabilities, i.e., human development, which depends on the

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improvement of quality of life of an economy.

If we look at a micro-level, then obviously the quality of life of an individual is represented by the attainment of basic needs, i.e., food, clothing and shelter. And to maintain these basic requirements he/she must have some earnings. Hence the increment in income or output per head leads to increase in the capabilities of people. Now for an economy as a whole GNP per head expresses only a part of the quality of life. In fact there is no one to one correspondence between material enrichment, say, GNP per head and human development. In human development approach national product is not taken as the primary indicator of development. Rather it shows the other important dimensions of the quality of life, say, lead a long life, good health, education, inequality existing in different components of society, degree of gender discrimination, participation in the decisions making that directly affect their lives and community, the socio-economic and political situations of an economy, freedom of people etc. Improvement of quality of life requires the increment of the capabilities of people i.e., focus should be given on ability of people to do and be.

Hence in this research work, the focus will be on the construction of a modified Quality of Life Index (QLI) based basically on the tune of philosophical overtone of Prof A.K.Sen after incorporating some modification particularly to explain a unique measurement of inequality in different dimensions of quality of life, gender discrimination and human rights

with respect to human well-being.

Literature Review

The concept of different human development indicators are suggested by Human Development Reports (HDRs) and India Human Development Reports (IHDRs) in various years. In this context the United Nations Development Programme's (UNDP's) Human Development Index (HDI) is a well-known measure of the quality of life. HDI is a composite index measuring average achievement in three basic dimensions of human development - longevity, i.e., a long and healthy life which is measured by life expectancy at birth, knowledge which is measured by mean years of schooling and expected years of schooling and finally, decent standard of living which is captured by GNI per capita (PPP \$) (according to HDR 2011). Three separate dimension indexes on health, knowledge and income are constructed and finally HDI is calculated by taking Geometric Mean of three dimension indexes of the 3 indicators.

Beside this an Inequality-adjusted HDI (IHDI) and a Gender Inequality Index (GII) are constructed separately in HDR 2011. In IHDI adjustment is made in HDI for inequality in the distribution of each dimension. And it is done by discounting the average value of each dimension according to its level of inequality. And GII captures gender based inequality in three dimensions, viz., reproductive health, empowerment and labor market participation. But yet there is no single index which will be able to capture the basic dimensions of quality of life with

existing inequality and gender discrimination altogether.

Not only providing the basic attainments but also the socio-political environment of the economy where these facilities are being provided is very much important regarding the question of quality of life of an economy. Infact, human development is essential for realizing human rights and human rights are necessary for overall human development. The most important drawback of HDI is that it does not consider human rights as the component of human development mainly due to volatile nature of political environment, inadequacy of data etc.

Universally accepted measures of Human Rights are constructed by Freedom House. They divide Human Rights mainly into two types: Political Rights and Civil Rights. Political rights and civil rights are measured by the Freedom House Index in Freedom House's annual surveys in regular basis.

In this context it should be mentioned that using this Freedom House Indexes Partha Dasgupta in his book "An Inquiry into Well-Being and Destitution" did a remarkable work. He gave rank the countries incorporating political rights and civil rights as two major components with other socio-economic components illustrated in HDI. And he observed how the situation changes when political and civil rights are included as two major components.

Construction of Modified Borda Score (MBS)

In this research work the main objective

is to construct an appropriate measure of quality of life of an economy. Let us try to construct a modified Quality of Life Index which represents human well-being as well as an inclusive measure of inequality in different dimensions of quality of life, gender discrimination and human rights.

Methodology

First of all let us try to describe the model briefly. Initially we have to specify the basic components of quality of life: viz., Health Component, Education Component, Income Component and Human Rights Component. On these four basic components the quality of life of an economy depends directly. Achieving these attainments is necessary to enjoy a decent standard of living with freedom and dignity. In this model Health Component (say, E) is captured by the Life Expectancy at Birth. Life expectancy at birth reflects the overall mortality level of a population. It can be defined as the average number of years that a newborn could expect to live if he or she were to pass through life subject to the age-specific mortality rates of a given period. Secondly, to measure Education Component (say, L) two major components should be specified: one is mean years of schooling (say, L1) and other is expected years of schooling (say, L2). According to UNESCO Institute for Statistics "Mean years of schooling (MYS) provides the average number of years of education completed by a country's adult population (25 years and older), excluding years spent repeating grades". Hence mean years of schooling can be calculated dividing total no. of completed

years of education by all the people of the economy aged 25 years and more by total no. of persons aged 25 years and more in the economy. And according to HDR expected years of schooling means “number of years a child of school entrance age can expect to spend in a given level of education.” In HDR 2014 mean years of schooling and expected years of schooling are taken instead of adult literacy rate and school enrolment rates which were indicators of education in previous HDRs. And HDR 2014 states “adult literacy used in the old HDI (which is simply a binary variable, literate or illiterate, with no gradations) is an insufficient measure for knowledge achievement. By including average years

of schooling and expected years of schooling, one can better capture the level of education and recent changes.” Next Income Component (say, C) is measured by Gross National Income (GNI) per capita of an economy. And finally Human Rights Component (say, R) is reflected through Political rights (say, R1) and Civil rights (say, R2). Following the technique of Freedom House Index Political Rights and Civil Rights are two fundamental areas on which Human Rights situation of an economy depend largely. Hence in this study let us take these two particular divisions of rights as measurements of Human Rights. Therefore the components of quality of life and their measurements can be specified as follows:

Components	Measured by
Health Component (E)	i) Life Expectancy at Birth
Education Component (L)	i) Mean years of schooling (L1) ii) Expected years of schooling (L2)
Income Component (C)	i) Gross National Income (GNI) per capita
Human Rights Component (R)	i) Political rights (R1) ii) Civil rights (R2)

For an economy we can measure E, L1, L2, C, R1 and R2. Now we should make an adjustment for inequality present in components E, L1, L2, and C. As R is based on scores so it is not possible to find out inequality in this component. In this context it can be mentioned that in HDR 2011 the concept of Inequality-adjusted HDI (IHDI) was introduced where adjustment in HDI is made for inequality in the distribution of each dimension.

And here Atkinson measure is taken as a measure of inequality. Where Atkinson index (say, A_x) is calculated as,

$$A_x = 1 - \left(\frac{\text{Geometric Mean of the distribution}}{\text{Arithmetic Mean of that distribution}} \right)$$

The choice of the Atkinson index is guided by three factors: (i) subgroup consistency, i.e., if inequality declines in one subgroup (e.g., region, ethnic group etc.) and

remains unchanged in the rest of population, then the overall inequality declines., (ii) sensitivity to the inequality in the lower end of distribution, i.e., by its construction Atkinson index puts more weight to the lower end instead of putting equal weights to the entire distribution and hence accounting better for child mortality, illiteracy, and income poverty and (iii) simplicity of computation. Because of these advantages over other measures of inequality we follow this process to adjust the inequalities in indicators in this study also.

To find out E^* , L^* and C^* by using Atkinson Index first of all we have to find out the Dimension Index of each component following the method in HDR 2014. This can be done as follows:

i) Dimension Index for health component (say, D_E):

$$D_E = \frac{Ee - Emin}{Emax - Emin},$$

where Ee = measurement of health component of the economy in question,

$Emin$ = observed minimum or subsistence level value of the measurement of health component of the economy

$Emax$ = observed maximum value of the measurement of health component of the economy.

ii) Dimension Index for education component (say, D_L):

Since there are two measures of education component, so D_L will be the composite index of D_{L1} and D_{L2} where,

$$D_{L1} = \frac{L1e - L1min}{L1max - L1min},$$

Where $L1e$ = first measurement of education component of the economy in question,

$L1min$ = observed minimum or subsistence level value of the first measurement of education component of the economy

$L1max$ = observed maximum value of the first measurement of education component of the economy.

$$\text{And, } D_{L2} = \frac{L2e - L2min}{L2max - L2min},$$

Where $L2e$ = second measurement of education component of the economy in question,

$L2min$ = observed minimum or subsistence level value of the second measurement of education component of the economy

$L2max$ = observed maximum value of the second measurement of education component of the economy.

$$\text{Now, } \sqrt{(D_{L1} \times D_{L2}) - Kmin}$$

$$\text{And, } D_L = \frac{\sqrt{(D_{L1} \times D_{L2}) - Kmin}}{Kmax - Kmin},$$

Where, K_{max} = observed highest combined education index,

K_{min} = observed minimum or subsistence level value of combined education index.

iii) Dimension Index for income component (say, D_c):

$$D_c = \frac{C_e - C_{min}}{C_{max} - C_{min}},$$

where C_e = measurement of income component of the economy in question,

C_{min} = observed minimum or subsistence level value of the measurement of income component of the economy

C_{max} = observed maximum value of the measurement of income component of the economy

Therefore, we can write, Inequality-adjusted (E^*), Inequality-adjusted education component (L^*) and Inequality-adjusted income component (C^*) as follows:

$$E^* = (1-A) D_E$$

$$L^* = (1-A) D_L$$

$$C^* = (1-A) D_c$$

where, $A = 1 - (G.M. / A.M.)$, G.M. and A.M. is the Geometric Mean and Arithmetic Mean of the distribution of the corresponding dimension.

Hence, E^* , L^* , C^* and R can be calculated for each economy. These calculations can be done for country level or state level or even in sub-state level. Now let us try to construct a composite index of quality of life reflecting the four basic components with existing inequalities in each component and gender discrimination. And to construct this composite index the ordinal approach should be followed. We rank the economies on the basis of E^* , L^* , C^* and R separately. Then we shall sum

up the corresponding results for all components of each economy. This will give particular score for each economy which represent the level of quality of life including status of rights and freedom enjoyed and also the level of inequality existing in basic components. So let us call this Inequality-adjusted Borda Score (IBS).

Further let us also try to incorporate the level of gender inequality experienced by the economies. For this we should collect the value of four major indicators of gender inequality for each economy as follows. Here subscript 'f' stands for female and subscript 'm' stands for male.

1) Gender based inequality in Health Component:

$$\frac{LEB\ f}{LEB\ m} = \frac{E\ f}{E\ m}$$

Where, $LEB\ f$ = Life Expectancy at Birth of female in a particular year.

$LEB\ m$ = Life Expectancy at Birth of male in a particular year.

As Life Expectancy at Birth can be taken as representative measure of proportion of being expected live, so the proportion

$$\frac{LEB\ f}{LEB\ m}$$

$$LEB\ m$$

is a measure reflecting inequality in health achievements between women and men.

2) Gender based inequality in Education Component:

$$\frac{\text{Literacy Rate } f}{\text{Literacy Rate } m} = \frac{L\ f}{L\ m}$$

As literacy rate provides a measure of the total number of literate persons within the adult population of an economy. It reflects the accumulated achievement of education in spreading out literacy. Hence the proportion L_f / L_m is a measure reflecting inequality in education attainments between women and men.

3) Gender based inequality in Economic Participation Component:

$$\frac{\text{Labor Force Participation } f}{\text{Labor Force Participation } m} = \frac{\text{LFP } f}{\text{LFP } m}$$

Where, Labor Force Participation Rate

$$= \frac{\text{Labor Force} \times 100}{\text{Working age population (above 15 years)}}$$

And labor force includes those who are able to work, i.e., have jobs or are seeking a job. As Labor Force Participation Rate indicates the value by which we can measure the economic engagement or the willingness to economic engagement of the people within the economy. Hence the proportion $\text{LFP}_f / \text{LFP}_m$ is a measure reflecting inequality in economic attainments between women and men.

4) Gender based inequality in Political Empowerment Component:

$$\frac{\text{Parliamentary Representation } f}{\text{Parliamentary Representation } m} = \frac{\text{PR } f}{\text{PR } m}$$

Where, Parliamentary Representation will be captured by the no. of MPs in country level, no. of MLAs in state level, no. of chairman and councilors in

Municipalities and corporations in urban areas and no. of Panchayat members in rural areas. Hence the proportion $\text{PR}_f / \text{PR}_m$ is a measure reflecting inequality in political attainments between women and men.

Therefore, Gender Inequality-adjustment Index (GI) is a composite measure reflecting inequality in achievements between women and men in four dimensions: health, education, economic participation and political empowerment. Hence Gender Inequality-adjustment Index (GI) is calculated as follows:

GI = Geometric Mean (G.M.) of these four indicators

Here Geometric Mean (G.M.) is taken as a measure of average of the four indicators instead of taking a simple average or Arithmetic Mean (A.M.) as because G.M. has certain advantages over A.M. In A.M. a low achievement in one component is linearly compensated for by high achievement in another component. Whereas the geometric mean reduces the level of substitutability between components and at the same time ensures that a 1% decline in measure of say health component has the same impact on the GI as a 1% decline in education or economic participation or political representation measure. Thus, as a basis for comparisons of achievements, this method is more appropriate of the intrinsic differences across the components than a simple average.

Then economies will be ranked on the basis of GI.

Finally, a Modified Borda Score (MBS) can

be calculated as, $MBS = IBS + GI$ Ranking. As IBS is a composite score by summing up ranks of different components and GI ranking also gives rank, so by additive property of ranks we can sum up IBS (sum of ranks) and rank on GI. And this MBS represents inequality-adjusted, gender-inequality-adjusted quality of life of a particular economy capturing also the rights component.

A Comparative Study of Modified Borda Score (MBS) at Current Period of South Asian Countries

Let us try to explain this modified index, i.e., MBS for the South Asian countries. We take 2013 as reference period. Then we try to observe whether there is any relation between the ranking of the countries according to GNP per head and the ranking on HDI and the ranking on MBS. There are 8 South Asian countries. According to HDR 2014 among these 8 countries only Sri Lanka is High Human Developed (HHD) country. It ranks 73 out of 187 countries and territories. Maldives, India, Bhutan and Bangladesh are 4 Middle Human Developed (MHD) countries with ranks 103, 135, 136 and 142 respectively out of 187 countries and

territories. And Nepal, Pakistan and Afghanistan are 3 Low Human Developed (LHD) countries with ranks 145, 146 and 169 respectively out of 187 countries and territories.

To construct MBS first of all we have to collect data on 4 basic components of quality of life: viz., Health Component (E), Education Component (L) (both L1 and L2), Income Component (C) and Human Rights Components (R) (both R1 and R2). And then E, L and C will be adjusted for existing inequality and we get E^* , L^* and C^* . Again it should be noted that as R is based on scores so it is not possible to find out inequality in this component. We can get the value of E, L1, L2 and C for the year 2013 from HDR 2014. As we have already mentioned that in this model we use Atkinson Index as inequality measure following the method described in HDR 2011. So we get the values of E^* , L^* and C^* for the year 2013 directly from HDR 2014 for those 8 countries. And we get ranks for Political Rights (say, R1) and Civil Rights (say, R2) for the year 2013 from Freedom House 2015. For these 8 countries data for above stated nine components are given in the following table.

Table 1: E, L1, L2, C, E^* , L^* , C^* , R1 and R2 for the year 2013 for South Asian Countries

Countries	E	E^*	L1	L2	L^*	C	C^*	R1	R2
1) Afghanistan	60.9	0.414	3.2	9.3	0.201	1904	0.397	6	6
2) Bangladesh	70.7	0.623	5.1	10	0.278	2713	0.357	3	4
3) Bhutan	68.3	0.578	2.3	12.4	0.365	6775	0.477	4	5
4) Nepal	68.4	0.588	3.2	12.4	0.253	2194	0.381	4	4
5) India	66.4	0.536	4.4	11.7	0.274	5150	0.500	2	3
6) Maldives	77.9	0.819	5.8	12.7	0.322	10074	0.535	5	4
7) Pakistan	66.6	0.502	4.7	7.7	0.204	4652	0.516	4	5
8) Sri Lanka	74.3	0.766	10.8	13.6	0.630	9250	0.550	5	4

Source: E (Life expectancy at birth, years), L1 (Mean years of schooling, years), L2 (Expected years of schooling, years), C (Gross national income (GNI) per capita (2011 PPP \$)), E* (Inequality-adjusted life expectancy index Value), L* (Inequality-adjusted education index Value), and C* (Inequality-adjusted income index Value) for the year 2013 : from HDR 2014, and R1 (score for Political Rights) and R2 (score for Civil Rights) for the year 2013: from Freedom House 2015.

In the next table on the basis of the value of E, L1, L2 and C we rank the countries. And in next table we also rank the

countries on the basis of E*, L*, C*, R1 and R2 separately in order to calculate Inequality - adjusted Borda Score (IBS). Suppose a country has the ranks a, b, c, d and e respectively for the 5 inequality adjusted components of human development. Then the Inequality - adjusted Borda score (IBS) for that particular country is $a+b+c+d+e$. Therefore this IBS represent the level of quality of life of a country including status of rights (both political and civil rights) and freedom enjoyed by the society and also the level of inequality existing in basic components of human development.

Table 2: Ranking of the Countries on the basis of E, L1, L2 and C

Countries	Ranking on E	Ranking on L1	Ranking on L2	Ranking on C
1) Afghanistan	8	6	7	8
2) Bangladesh	3	3	6	6
3) Bhutan	5	8	3	3
4) Nepal	4	6	3	7
5) India	7	5	5	4
6) Maldives	1	2	2	1
7) Pakistan	6	4	8	5
8) Sri Lanka	2	1	1	2

Ranking is from best to worst. Score 1 represents best and score 8 represents worst.

Table 3: Ranking of the Countries on the basis of E*, L*, C*, R1 and R2 and IBS

Countries	Ranking on E*	Ranking on L*	Ranking on L*	Ranking on R1	Ranking on R2	IBS
1) Afghanistan	8	8	6	8	8	38
2) Bangladesh	3	4	8	2	2	19
3) Bhutan	5	2	5	3	6	21
4) Nepal	4	6	7	3	2	22
5) India	6	5	4	1	1	17
6) Maldives	1	3	2	6	2	14
7) Pakistan	7	7	3	3	6	26
8) Sri Lanka	2	1	1	6	2	12

One thing should be noted that Ranking is from best to worst. In this context let us mention that according to score given by Freedom House countries are ranked. And Freedom House found that among these 8 South Asian countries only India is a free country and on the contrary Afghanistan is a not-free country and all other 6 countries are partly free.

Measuring Gender Inequality-adjustment Index (GI)

As we have discussed earlier to measure GI for a country we need data on the following indicators: life expectancy at birth (female) [LEB_f], life expectancy at birth (male) [LEB_m], literacy rate (female) [L_f], literacy rate (male) [L_m], labor force

participation rate (female) [LFP_f], labor force participation rate (male) [LFP_m], parliamentary representation (female) [PR_f], parliamentary representation (male) [PR_m]. Among these L_f and L_m are not found for the year 2013 for all of these 8 countries. So due to data unavailability 2015 (estimated) data are taken for these two indicators from Central Intelligence Agency (US) form their website www.cia.gov/library/publications/the-world-factbook. And other indicators PR_f, PR_m, LEB_f, LEB_m, LFP_f and LFP_m for 2013 are taken from World Bank 2015. In this context it should be mentioned that in this present discussion parliamentary representation is indicated by the proportion of seats held in national parliament of the respective country.

Table 4: Calculating GI score for the Countries

Countries	LEB _f /LEB _m	L _f /L _m	LFP _f /LFP _m	PR _f /PR _m	GI =G.M. of col.(2) to col.(5)
(1)	(2)	(3)	(4)	(5)	(6)
1) Afghanistan	62/60 =1.03	24.2/52 =0.47	16/80 =0.2	28/72 =0.39	0.4408
2) Bangladesh	71/70 =1.01	58.5/64.6 =0.91	57/84 =0.68	20/80 =0.25	0.6287
3) Bhutan	69/68 = 1.01	55/73.1 =0.75	67/77 =0.87	6/94 =0.06	0.4459
4) Nepal	70/67 =1.04	53.1/76.4 =0.70	80/87 =0.92	33/67 =0.49	0.7569
5) India	68/65 =1.05	60.6/81.3 =0.75	27/80 =0.34	11/89 =0.12	0.4234
6) Maldives	79/77 =1.03	98.8/99.8 =0.99	56/78 =0.72	7/93 =0.08	0.4923
7) Pakistan	68/66 =1.03	45.8/69.5 =0.66	25/83 =0.30	21/79 =0.27	0.4844
8) Sri Lanka	77/71 =1.08	91.7/93.6 =0.98	35/76 =0.46	6/94 =0.06	0.4134

Source: LEB_f,LEB_m, LFP_f, LFP_m, PR_f and PR_m for the year 2013 from World Bank 2015 and L_f and L_m for 2015 (est.) from

Central Intelligence Agency (US) form their website www.cia.gov/library/publications/the-world-factbook (2015).

Hence we get GI values reflecting gender discrimination within the economy for each country separately. Now we rank these 8 South Asian countries on the basis of GI. And finally a Modified Borda Score (MBS) is calculated as, $MBS = IBS + GI$ Ranking for each country. Very clearly

this MBS represents inequality-adjusted, gender-inequality-adjusted quality of life of a particular country capturing all the major components of human development approach specially also the rights component.

Table 5: Measuring MBS

Countries	IBS	IBS Ranking	GI Score	GI Ranking	MBS = IBS + GI Ranking	MBS Ranking
1) Afghanistan	38	8	0.4408	6	44	8
2) Bangladesh	19	4	0.6287	2	21	3
3) Bhutan	21	5	0.4459	5	26	6
4) Nepal	22	6	0.7569	1	23	4
5) India	17	3	0.4234	7	24	5
6) Maldives	14	2	0.4923	3	17	1
7) Pakistan	26	7	0.4844	4	30	7
8) Sri Lanka	12	1	0.4134	8	20	2

Again ranking is from best to worst.

Now we find the relative positions in ranking according to Gross national income (GNI) per capita (2011 PPP \$), 2013 (say, y) and also the relative positions in ranking according to HDI

value, 2013. And then we try to compare the relative situations of the 8 South Asian countries according to the three different ranking systems, i.e., MBS ranking, (y) ranking and HDI ranking. Again ranking is from best to the worst.

Table 6: (y) ranking and HDI ranking for South Asian Countries for the year 2013

Countries	(y) value, 2013	(y) ranking	HDI value, 2013	HDI ranking
1) Afghanistan	1,904	8	0.468	8
2) Bangladesh	2,713	6	0.558	5
3) Bhutan	6,775	3	0.584	4
4) Nepal	2,194	7	0.540	6
5) India	5,150	4	0.586	3
6) Maldives	10,074	1	0.698	2
7) Pakistan	4,652	5	0.537	7
8) Sri Lanka	9,250	2	0.750	1

Source: HDR 2014.

Table 7: (y) ranking and HDI ranking, IBS ranking and MBS ranking for South Asian countries for the year 2013

Countries	(y) ranking	HDI ranking	IBS Ranking	MBS Ranking
1) Afghanistan	8	8	8	8
2) Bangladesh	6	5	4	3
3) Bhutan	3	4	5	6
4) Nepal	7	6	6	4
5) India	4	3	3	5
6) Maldives	1	2	2	1
7) Pakistan	5	7	7	7
8) Sri Lanka	2	1	1	2

It should be noticed by comparative analysis on the basis of Table 7 that:

- i) (y) ranking incorporate income component only,
- ii) HDI ranking incorporate 3 basic components of human well-being, i.e., health, education and income,
- iii) IBS ranking incorporate 4 basic components of quality of life, i.e., health, education, income and human rights and

also the inequality existing in each dimension (excepting rights component),

- iv) MBS ranking incorporate all of the 4 basic components of quality of life with inequality adjustment like IBS ranking and also the gender inequality existing in the economy.

Observations

1. It can be clearly shown from above table that the two LHD countries

Afghanistan and Pakistan, one MHD country Maldives and one HHD country Sri Lanka are steady performer in every index of quality of life. Afghanistan shows worst result in all indexes and takes last position in all the ranking system. So it is very alarming situation for this country as it is the poorest country among all the South Asian countries in every respect of quality of life. On the other hand the only HHD country among all the South Asian countries i.e., Sri Lanka also takes 1st position in IBS ranking but when the issue of gender discrimination comes, then Maldives scores little higher in MBS score. So according to MBS ranking Sri Lanka becomes 2nd highest country. Maldives also a high scorer country in every respect of human development. Hence overall Sri Lanka and Maldives are steadily good performing countries.

2. Next we analyze two amazing results found in two countries, one is Bangladesh and another is Bhutan. As we incorporate different aspects of quality of life one by one from (y) ranking to HDI ranking and then to IBS ranking and finally to MBS ranking we find that Bangladesh is a country whose situation is improving gradually. When only income is taken as the criteria of development it is one of the lowest ranking countries, taking 6th position among 8 countries. But as other dimensions health and education are included then in HDI it shows improvement and rank goes up to 5th position. When the components are adjusted for inequality and rights component are included again it shows a very good performance and rank

improves to 4th position in IBS ranking. Specially in the two dimensions rights and inequality-adjusted education, this country does very well. Just the reverse is the situation for Bhutan. Its performance is continuously deteriorating from (y) ranking to MBS ranking. It is one of the top most income-generating countries with 3rd ranking according to (y) among the 8 South Asian countries. But in HDI ranking it falls to 4th position. In IBS ranking it again falls to 5th position specially due to poor health service and also poor environment regarding civil rights. Also existing situation of gender discrimination deteriorates its position to 6th in rank according to MBS ranking.

3. Nepal is a country whose performance is not satisfactory in all aspect of quality of life except gender discrimination. In fact it is the country where gender inequality is least among all other South Asian countries. In GI ranking it ranks 1. Hence we find the fact that though it ranks 7th in (y) ranking and 6th in both HDI and IBS ranking, but it jumps up to rank 4 in the composite index of quality of life, i.e., in MBS ranking. Pakistan is also a worst performing country like Afghanistan. Though it ranks 5th in (y) ranking but it is the second lowest performer in all other dimensions of human well-being just after Afghanistan and ranks 7th among the 8 countries in HDI, IBS and MBS all of the three rankings.

4. Finally it can be seen that India is a middle performing country. When only income is taken into consideration it ranks 4th in (y) ranking. It does not perform well

in health and education (ranking 6th and 5th in E* and L* respectively) components. But it is a free country and top ranking country in respect of both political and civil rights among all other South Asian countries. Hence we find that its rank rises to 3rd position in HDI and IBS ranking. Unfortunately India is still remain unsuccessful to overcome the problem of gender bias and shows a very poor performance ranking 7th position in GI ranking. Hence in MBS ranking it falls to 5th position which is not very satisfactory.

Conclusion

It can be concluded that by using the composite index of quality of life, i.e., MBS it is possible to find out the situation of social well-being experienced by different economies, may be in country level, state level or sub-state level. It is obvious that non-availability of data will become a serious problem when the concept of modified human development index, i.e., MBS will be applied at sub state level like district level, specially in developing countries like India. Nowadays different states of India stress on data collection and proper recording of those data for many major components of economy. But for sub state-level the secondary sources are found to be inadequate in almost all cases. Therefore it is necessary to collect fresh data through primary survey and it opens the area for future research possibilities.

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