UNIT 6 SOCIAL INDICATORS OF DEVELOPMENT

Structure

6.1 OBJECTIVES

After going through this unit, you will be able to:

- Identify the various indicators of social development;
- Explain their historical origins and purpose for their development; and
- Attempt a comparative study of the experiences of India's vis-a-vis some other developing countries' of Africa and Asia over time.

6.2 INTRODUCTION

Being students of economics, we would like to know how to assess the economic performance of a country. Here, one of the first indicators that comes to mind is the growth rate of the country. Rapid growth somehow seems to suggest that the people of that country would benefit through improvement in the standards of living. Historical experience does not establish that this relationship holds invariably and automatically. Rapid growth implies an increase in average per capita income. There is, however, no automatic mechanism by which the actual incomes of everyone in the economy increase. In other words, there could be problems of possible increase in inequality in new distribution of income, for instance, which prevents the translation of economic growth into general improvements in the standard of living of the people. Therefore, in order to assess the performance of any country, one needs to go beyond the performance in terms of growth rates.

One of the broad concepts that evolved so as to capture changes in the economy beyond economic growth is that of 'development'. While this is a very broad concept, the key element of economic development is that people of the country being major participants in the process of changes in the economy as well as in the enjoyment of benefits flowing from the changes. For instance, Indian economy has made rapid strides in the area of industrial development in the past few decades. The production of steel ingots has increased from less than 1.5 million tons to more than 15.5 million tons between 1950-51 and 1995-96. During the same period the production of machine tools, cotton textile machinery, cotton cloth, sugar, tea, vanaspati have all shown a sharp increase. At the same time it is also known that nearly 36 per cent of the population in 1993-94 lived below even the minimum norm of income called poverty line. The benefits of economic growth thus seem to have bypassed a significant proportion of the population. In order to evaluate a country's development performance, therefore, one can use measures of the extent to which people in the country receive the benefits of the development process.

The first step in this direction is to look at indicators of poverty and inequality. These, in a sense, seek to measure/capture the access of people to the basic necessities of life, from the purchasing power side. An alternative approach is to look at the country's performance in terms of various social indicators - the main indicators usually relate to health and education sectors. The idea here is to measure the actual access to these services. Indicators such as Physical Quality of Life Index (PQLI) and Human Development Index (HDI) fall in this category.

The above characterisation of the process of development provides an alternative way of assessing the development performance. This is derived from the first part of the characterisation, which is people being the major participants in the process of change. For this to be realised, they should have minimum "capability". This is the basis for the third approach - which takes the form of Capability Poverty Index (first introduced in Human Development Report, 1996). Capability is sought to be captured in terms of three major indicators - avoidable morbidity, education, and health in the form of nourishment. The indicators here differ from the ones used in the earlier indices in that the former measure availability of or access to the service, while the latter seek to capture the proportion of the population that is actually deprived of these services. In this sense this index is an alternative way of measuring poverty, a fact that is amply captured in its name.

This unit presents a discussion of these various indicators of human development, and comparative picture of how India performs on these indicators, when compared to other developing economies.

6.3 TYPES OF SOCIAL INDICATORS

To begin with, it would be useful to get familiar with the problems associated with using per capita GNP as a measure of development. The inability of this indicator to capture the problems arising from inequality in distribution of income is not the only drawback. One of the major criticisms arises from the fact that the figures for GNP do not include non-marketed and/or non-priced activities. This includes, among other things, a significant part of the homemakers' work. This has two implications: first and more obvious implication is that this would result in the underestimation of the level of GNP. Over time, however, the activities, which were formerly not marketed, enter the market. To give an example, consider nursing. Attending to the sick was at one time an activity of the household itself. But today, this service is a part of the market. Not only does one pay for the service in hospitals and nursing homes, one can even obtain the service for an invalid at home. Such changes imply that comparison of the levels of per capita GNP over time could yield misleading information on the underlying standards of living. This problem also implies that using per capita GNP for inter-country comparisons too could be misleading if the countries have differences in the extent of marketed services and goods.

As a result, there have been numerous efforts both to remedy these defects in the use of per capita GNP as a measure of the level of development, and to create other composite indicators that could serve as compliments or alternatives to this traditional measure. Basically, such indicators fall into two groups: those that seek to measure development in terms of a "normal" or "optimal" pattern of interaction among social, economic, and political factors and those that measure development in terms of quality of life. In all of these studies, the approach has been to assess the performance of the country in some key sectors : sectors, which are considered an integral part of any analysis of standards of living. Two of the key sectors used are education and health.

One of the early studies on the first group of composite indicators was carried out by the United Nations Research Institute on Social Development (UNRISD) in 1970. The study was concerned with the selection of the most appropriate indicators of development and an analysis of the relationship between these indicators at different levels of development. The result was the construction of a composite social development index. Originally 73 indicators were examined. However, only 16 indicators (9 social indicators and 7 economic indicators) were ultimately chosen (see Table 1).

Table 1: List of Core Indicators of Socioeconomic Development United Nations Research Institute on Social Development (UNRISD)

Expectations of Life at Birth
Percentage of Population in localities of 20,000 and over
Consumption of animal protein, per capita, per day
Combined primary and secondary enrolment
Vocational enrolment ratio
Average number of persons per room
Newspaper circulation per 1,000 population
Percentage of economically active population with electricity, gas, water etc.
Agricultural production per male agricultural worker
Percentage of adult male labour in agriculture
Electricity consumption, kilowatt per capita
Steel consumption, kg per capita
Energy consumption, kg of coal equivalent per capita
Percentage GDP derived from manufacturing
Foreign trade per capita, in 1960 U.S. dollars
Percentage of salaried and wage earners to total economically active population

These indicators were selected on the basis of their high inter-correlation to form a development index using weights derived from the various degrees of correlation. The development index was found to correlate more highly with individual social and economic indicators than per capita GNP correlated with the same indicators. Rankings of some countries under the development index differed from per capita GNP rankings. It was also found that the development index was more highly correlated with per capita GNP for developed countries than for the developing countries. The study concluded that social development occurred at a more rapid pace than economic development up to a level of $500 per capita income (1960 prices).

Another study that sought to measure development in terms of a pattern of interaction among social, economic, and political factor was conducted by Irma Adelman and Cynthia Morris, who classified 74 countries according to 40 different variables relating to these aspects. Factor analysis was used to examine the interdependence between social and political variables and the level of economic development to arrive at a measuring yardstick. The researchers found numerous correlations between key variables and economic development.

This approach of factor analysis is based on an underlying normative assumption that there is a unique path of development. The performance of the developing countries is, therefore, sought to be judged in terms of the path traced by the developed countries. There seems to be no logical or historical justification for this assumption. Furthermore, there is usually an emphasis on measuring inputs, such as the number of doctors or hospital beds per 1000 population or enrolment rates in primary schools to measure health and education, when outputs, such as life expectancy and literacy, are the actual objectives of development. This would not be a fallacy if the underlying "production function" transforms all 'inputs' into 'outputs'. But this is rarely the

case. The figures of number of doctors per 100 population, for instance, would normally be concealing the differences in the levels between rural and urban areas, or between backward and advanced pockets of the same country. In response to these criticisms, several studies have sought to develop composite indicators that measure development in terms of meeting the basic needs of the majority of the population or in terms of quality of life.

Check Your Progress 1

1) Why is per capita GNP an inadequate measure of standards of living, i.e., of welfare of the people of a country? (Answer in five sentences)

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6.3.1 The Physical Quality of Life Index (PQLI)

One well-known endeavour in this area was Morris D. Morris's development of the *Physical Quality of Life Index (PQLI)*. Three indicators were used to form a simple composite index:

1) Life expectancy at age 1;
2) Infant mortality rate; and
3) Literacy rate.

For each indicator, the performance for individual countries is rated on a scale of 1 and 100, where 1 represents the worst performance by any country and 100 the best performance. For life expectancy, the upper limit of 100 was assigned to 77 years (achieved by Sweden in 1973) and the lower limit of 1 was assigned to 28 years (the life expectancy of Guinea-Bissau in 1950). Within these limits, each country's life expectancy figure is ranked from 1 to 100. For example, a life expectancy of 52, midway between the upper and lower limits of 77 and 28, would be assigned a rating of 50. Similarly for infant mortality, the upper limit was set at 9 per 1,000 (achieved by Sweden in 1973) and the lower limit at 229 per 1,000 (Gabon, 1950). Literacy rates, measured as percentages from 1 to 100, provide their own direct scale. Once a country's performance in life expectancy, infant mortality, and literacy has been rated on the scale of 1 to 100, the composite index for the country is calculated by averaging the three ratings, giving equal weights to each.

Although the study found that countries with low per capita GNP tended to have low PQLIs and countries with high per capita GNP tended to have high PQLIs, the correlations between GNP and PQLI were not substantially close. Some countries with high per capita GNP had very low PQLIs - even below the average of the poorest countries. Other countries with very low per capita GNP had PQLIs that were higher than the average for the upper-middle-income countries.

Table 2: Per capita GNP and PQLI (1981)

Country	Per Capita GNP ($)	PQLI
Gambia	348	20
Angola	790	21
Sudan	380	34
Tanzania	299	58
Zimbabwe	815	63
China	304	75
Pakistan	349	40
India	253	42
Sri Lanka	302	82
Singapore	5220	86
Taiwan	2503	87
Saudi Arabia	12720	40
Iraq	3020	48
Brazil	2214	72

Source : Todaro, M.P.(1994): Economic Development, 5th Edition.

Table 2 provides a sample of the Third World countries ranked both by per capita incomes and PQLIs in the early 1980s. The data seem to indicate that significant improvements in the basic quality of life can be achieved before there is any great rise in the per capita GNP or, conversely, that a higher level of per capita GNP is not a guarantee of a better quality of life. Note in particular the wide PQLI variations for countries with similar levels of per capita income such as Angola and Zimbabwe, China and India, Tanzania and Gambia, Taiwan and Iraq. Most striking contrast is that between Saudi Arabia and Sri Lanka.

Check Your Progress 2

1) What are the three indicators used to form a composite index for PQLI?
   a)_____; b)_____; and c) _____

2) Best performance of a country is represented with a score of
   a) 100; b) 10; c) 1; d) 20.

3) The GNP and PQLI are highly correlated for all the countries. Is it TRUE or FALSE ?

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4) Discuss in about five sentences the experience of high GNP countries and low GNP countries with regard to PQLI.

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6.3.2 The Human Development Index (HDI)

The latest and most ambitious attempt to analyse the comparative status of socioeconomic development in both developing and developed nations systematically and comprehensively undertaken by the United Nations Development Program (UNDP) in its annual series of Human Development Reports. The centre-piece of these reports, which were initiated in 1990, is the construction and refinement of a Human Development Index (HDI). Like the PQLI, the HDI attempts to rank all countries on a scale of 0 (the lowest human development) to 1 (highest human development) based on three goals or end products of development.

1) ***longevity*** is measured by life expectancy at birth;
2) ***knowledge*** as measured by a weighted average of adult literacy (two-thirds) and mean years of schooling (one-third weights); and
3) ***income*** as measured by adjusted real per capita income (i.e. adjusted for the differing purchasing power of each country's currency and for the assumption of rapidly diminishing marginal utility of income).

Using these three measures of development and applying a complex formula to 1990 data for 160 countries, the HDI ranks all countries into three groups: low human development (0.00 to 0.49), medium human development (0.50 to 0.79) and high human development (0.80 to 1.00). It should be noted that HDI measures relative, and not absolute, levels of human development and that its focus is on the ends of development (longevity, knowledge, material choice) rather than the means (as with per capita GNP alone). Further, while PQLI focuses only on the physical indicators of health and education, HDI assigns a role to income as well, by including adjusted real per capita income as one of the indicators. In this sense, HDI could be considered a refinement of PQLI as well as of per capita GNP as indicators of development.

Table-3: Comparison of HDI and CPR with the real per capita GDP (1993)

	Real GDP (PPP$) Per Capita	HDI	CRM
USA	24680	0.940	
Sweden	17900	0.933	
Japan	20660	0.938	
South Korea	9710	0.886	8.6
Sri Lanka	3030	0.698	19.3
Pakistan	2160	0.442	60.8
India	1240	0.436	61.5
Bangladesh	1290	0.365	76.5
China	2330	0.609	17.5
UK	17230	0.924	
Germany	18840	0.920	
Brazil	5500	0.796	10.0
Tanzania	630	0.364	39.4
Iraq	3413	0.599	39.9
Algeria	5570	0.746	49.5
Kuwait	21630	0.836	10.8

Source: Human Development Report, 1996.

Table 3 shows that the Human Development Index, along with the figures for real per capita GDP (PPP$) for a sample of developed and developing nations. A comparison of these two figures is done by a comparison of the ranks of the countries by these two measures - by taking the difference. A positive number shows by how much a country's relative ranking rises when HDI is used instead of GDP per capita, and a negative number shows the opposite. Clearly, this is the critical issue for HDI as well as any other composite social indicator such as the PQLI. If country rankings did not vary much when HDI is used instead of GDP or GNP per capita, the latter would (as some economists claim) serve as a reliable proxy for socio-economic development, and there would be no need to worry about such things as health and education indicators.

We see from Table 3 that there is no direct correspondence between the ranking by the HDI measure and that by the per capita real GDP (PPP$). It is interesting to note that even though countries with high HDI tend to have higher adjusted real per capita GDP. Within and occasionally across the three subgroups we find some countries whose HDI is considerably higher than others even though the latter have substantially lower per capita incomes. Thus, for example, we see that Tanzania's HDI is slightly higher than Guinea's (0.364 and 0.306 respectively) even though Guinea's real per capita GNP is almost 3-times higher than Tanzania's. There are many other such cases, which make it clear that complete stress on GNP growth may not be enough to solve the problem of poverty or deprivation in the under-developed countries.

Although the HDI gives us a broader perspective on progress towards development, it should be pointed out that

1) its creation was in part motivated by a political strategy designed to focus attention on health and education aspects of development;

2) the three indicators used are good but not ideal (e.g. the U.N. team wanted to use nutrition status of children under age 5 as their ideal health indicators, but the data were not available;

3) the national HDI may have the unfortunate effect of shifting focus away from the substantial inequality within countries;

4) the alternative approach of looking at GNP per capita rankings and then supplementing this with other social indicators is still a respectable one; and

5) one must always remember that the index is one of relative rather than absolute development, so that if all countries improve at the weighted rate, the poorest countries will not get credit for their progress.

6.3.3 The Capability Poverty Measure (CPM)

Turning to the capability side of the story, with the help from Amartya Sen, "Human Development Report (1996)" has invented a multi-dimensional measurement, calling it an index of Capability Poverty Index. The objective behind construction of this index is to focus on deprivation rather than on availability. Participation of the people in the development process would be conditional on their capability, captured in terms of the health and educational status: basic here being survival, and access to education and various public and private resources. The index, it is believed, represents a truer picture of those who are so deprived that they no longer have the chance or choice to improve their lives.

The report measures human poverty in terms of deprivations:

a) *deprivations of life* (nearly one-third of the people in the least-developed countries are not expected to survive to 40);

b) *deprivation of basic education* (particularly of girls); and

c) *deprivation of access to public and private resources*, including safe water.

The corresponding indicators are percentage of children under five who are underweight, percentage of women over the age of 15 years who are illiterate and percentage of births unattended by trained health personnel. *The CPM therefore focuses on people's lack of capabilities in the country rather than on the average capabilities in the country.*

While this constitutes the basis for the construction of this new index, it also alters the focus of recommendations for governmental intervention in these sectors. The goals of governmental intervention get suitably modified. In terms of per capita GNP (U.S. dollars) India is still one of the poorest countries of the world, even many of the poorer African countries have done better in their performance. Table 2 clearly shows that countries like Sri Lanka, Pakistan, Iraq, Gambia, Angola, Tanzania, Zimbabwe, even Sudan have a higher per capita GNP than India. But in terms of PQLI, Pakistan, Gambia, Angola, Sudan have a much lower ranking than India. So, it is vividly clear *that Indian experience has been mixed in achieving growth as well as improvements in the standards of living of its population.*

The figures for CPM for the less developed countries too are presented in ***Table 3***. It should be noted that the performance of the countries as per the CPM does not correspond directly with the ranking according to HDI.

Looking more closely at Table 3, it can be noticed that South Korea and Kuwait have more or less same HDI (0.886 and 0.836 respectively) but the per capita GNP of South Korea is only about 40 percent of that of Kuwait. This indicates that *higher level of per capita income is necessary but not sufficient condition for better human development.* The case is similar for the pair of China and Iraq. Both have more or less equal HDI but China's per capita income is about 35 percent lower than Iraq's. Further, whatever be the measure that is being considered, the Table 3 also indicates that India has a long way to go to achieve rapid growth and betterment of quality of life of its population in comparison to most other countries of the globe.

Check Your Progress 3

1) What is the difference between the indices developed by UNRISD on the one hand and HDI or PQLI on the other? Briefly describe these indices.

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2) What is the significance of the Capability Poverty Index? How does it differ from HDI or PQLI? (Answer in four lines)

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3) Consider HDI and PQLI and discuss what is the difference in the policy implications in the use of these two development indicators? (Answer in five lines)

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4) How would the policy implications of indices based on UNRISD differ from those based on HDI/PQLI?

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6.4 KEY WORDS

Human Development Index: An index measuring national socio-economic development, based on measures of life expectancy at birth, educational attainment, and adjusted real per capita income.

Income per capita: National income of a country divided by total population.

Infant mortality rate: Deaths among children between birth and 1 year of age per 1,000 live births.

Levels of living: The extent to which a person, family, or a group of people can satisfy their material and spiritual wants. If they are able to afford only a minimum quantity of food, shelter, and clothing, their levels of living are said to be very low. If they enjoy a great variety of food, shelter, clothing, and other things, such as good health, education, and leisure, they are enjoying relatively high levels of living.

Literacy: Ability to read and write.

Literacy rate: The percentage of population aged 15 and above that are able to read and write.

Malnutrition: A state of ill health resulting from an inadequate or improper diet, usually measured in terms of average daily protein consumption.

National income: Total money value of all final goods and services produced in an economy during a period of time, usually a year.

Physical Quality of Life (Index (PQLI): A composite social indicator reflecting the average of three indices: life expectancy at birth, literacy rate, and infant mortality rate.

Social indicators: Non economic factors of development, such as life expectancy at birth, literacy rate, infant mortality rate, and doctors per 1,000 population.

Vicious circle: A self-reinforcing situation in which factors tend to perpetuate a certain undesirable phenomenon.

Factor analysis: refers to the analysis in which weights is given to various variables (or indicators) according to the importance accorded to it.

6.5 SOME USEFUL BOOKS

EPW Research Foundation (1994). *"Social indicators of Development - II", Economic & Political Weekly,* May 21, pp 1300-1308.

Eswaran, Mukesh & Kotwal, Ashok (1994). *"Why Poverty Persists in India"*, Oxford University Press, New Delhi, Chapter 1 pp 1-25.

Meier, G.M. (1991). *"Leading Issues in Economic Development"*, Oxford University Press, Oxford, Fourth Edition.

Todaro, Michael P. (1994). *"Economic Development"*, Longman Group UK Limited, NY, Chs. 1,3,4, Fifth Edition.

United Nations Development Programme(UNDP) (1996). *"Human Development Report 1996"*, Oxford University Press , New York.

World Bank (1991). *"World Development Report - Challenge of Development"*, Oxford University Press, New York.

6.6 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) Refer to Section 6.3 to answer this question.

Check Your Progress 2

1) a) Life expectancy at age 1; b) Infant mortality; and c) Literacy.

2) a) 100

3) FALSE.

4) Read Section 6.4.1 for the experience of developed and developing countries with regard to the correlation between GNP and PQLI.

Check Your Progress 3

1) The former are based on a normative assumption of a unique path of development, while the latter make no such assumption. Both these kinds of indices seek to focus on the extent to which benefits of development accrue to the people. For details of th se indices look up section 6.3.

2) Section 6.4 may be referred to for answering this question.

3) Since the basic difference between these two indicators is the inclusion of per capita income in HDI and its exclusion in PQLI, emphasis on HDI would suggest the need for income redistribution, while this would not figure in PQLI based analysis.

4) The former would advocate increases in the inputs to the basic services like doctors per 100 population, while the latter would focus on achieving goals such as increase in life expectancy at birth. The latter therefore, is more likely to explore the reasons for failure of the availability of the service to translate itself into final 'outputs' like life expectancy and address the underlying problems.