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Rags and Riches: The Dimensions of Development

▶ ACTIVITY 1: ECONOMIC MODEL OF DEVELOPMENT

In this section, you will use two indicators to assess a country's level of economic development. These indicators are GDP per capita and percentage of the labor force engaged in nonagricultural labor. GDP per capita, the most typical indicator of economic development, measures the total goods and services produced by a country divided by its population. Percentage of the population involved in nonagricultural activities is another commonly used indicator of development. Because a subsistence economy is extremely labor intensive, a country with an economy based primarily on subsistence agriculture has few resources to invest in industry and services. As a country develops its technological capabilities, a smaller and smaller percentage of the labor force is needed to produce enough food for the entire population, and a larger and larger percentage of workers are diverted into manufacturing, trade, and services.

You will find values for each of these indicators listed by country in *Columns B* and *D* of Table 7.3 and will calculate a composite economic development ranking for each country based on these two indicators. This index will appear in *Column F*.

A. *Column B* lists GDP per capita for each country; *Column C* lists the rank of countries from highest per capita GDP to lowest per capita GDP. *Column D* lists the percentage of the labor force in nonagricultural activities for each country. *Column E* ranks the countries by values given for *Column D*. Generally, as a country develops, its percentage of workers engaged in nonagricultural activities increases. Therefore, the country with the highest value in *Column D* should be ranked 20 (highest), and the country with the lowest value in *Column D* should be ranked 1 (lowest). In the event of a tie, both countries should receive the same highest ranking. For example, if two countries share the highest value for GDP per capita, both would be ranked 20. The country in third place would receive a ranking of 18. Remember to skip a ranking number after assigning two identical rankings for a tie.

B. *Column F* is a composite economic development ranking for each country based on rankings for GDP per capita and the percentage of the labor force involved in nonagricultural activities. To complete *Column F*, calculate the average of values in *Columns C* and *E*. Example: A country with a GDP ranking of 4 (*Column C*) and a nonagricultural ranking of 3 (*Column E*) would have an economic development ranking (*Column F*) of 3.5. To confirm that you are calculating the values correctly, calculate the composite ranking for the United States; the answer should be 19.5.

TABLE 7.3 Composite Rankings

A Country	B GDP Per Capita* ($US)	C GDP Per Capita* *Ranking*	D Non-Agricultural Employment (%)	E Non-Agricultural Employment *Ranking*	F Economic Development *Ranking*	G Infant Mortality Rate per 1,000	H Infant Mortality Rate *Ranking*	I Female Literacy Rate	J Female Literacy Rate *Ranking*	K Human Welfare *Ranking*	L Human Welfare *Ranking*–Economic *Ranking*
United States	36,200	20	98%			6.69		97			
Singapore	26,500	19	100%			3.6		90			
Canada	24,800	18	97%			4.95		97			
Iceland	24,800	18	95%			3.53		100			
United Arab Emirates	22,800	16	93%			16.12		80			
Taiwan	17,400	15	92%			6.8		79			
Argentina	12,900	14	88%			17.2		96			
Saudi Arabia	10,500	13	88%			49.59		70			
Mexico	9,100	12	80%			24.52		87			
Poland	8,500	11	73%			9.17		98			
South Africa	8,500	11	70%			61.78		85			
Turkey	6,800	9	60%			45.77		77			
Morocco	3,500	8	50%			46.49		31			
Sri Lanka	3,250	7	62%			15.65		87			
Moldova	2,500	6	60%			42.16		94			
Cuba	1,700	5	76%			7.27		95			
Senegal	1,600	4	30%			55.41		29			
Cambodia	1,300	3	20%			64		22			
Dem. Rep. of the Congo (Zaire)	1,100	2	35%			98.05		68			
Afghanistan	800	1	20%			144.76		21			

Note that these figures are the most recent available; some may supersede those found in the *Country Facts* on your CD.
*Based on purchasing power parity.
Source: Central Intelligence Agency. 2002. *CIA Factbook*: www.cia.gov/cia/publications/factbook/index.html

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▶ ACTIVITY 2: HUMAN WELFARE MODEL OF DEVELOPMENT

Two indicators of a country's human welfare are infant mortality and female literacy rates. The infant mortality rate is the annual number of deaths of infants 1 year of age or younger per 1,000 live births. It is frequently used as a measure of human welfare because it measures a society's ability to provide for its most vulnerable members. MDCs tend to have lower infant mortality rates than do LDCs, because the populations of the former have better housing, diets, education, and health care. The female literacy rate—the percentage of women who can read and write—is also a common indicator of human well-being because literate labor forces can adopt new technologies and interact with the world market. The female literacy rate also reflects the status of women in society. You will find values for each of these indicators listed by country in *Columns G* and *I* of Table 7.3. You will calculate a composite human welfare development ranking for each country based on these two indicators. This index will appear in *Column K*.

A. *Column G* shows infant mortality rates for all 20 countries. In *Column H*, rank these countries by their infant mortality rates. As a country develops, its infant mortality rate generally decreases. As a result, the country with the *lowest* infant mortality rate will be ranked 20, and the country with the *highest* infant mortality rate will be ranked 1. Handle ties by the method described in *Activity 1*, Instruction A.

B. *Column I* displays female literacy rates for all 20 countries. In *Column J*, rank countries according to their female literacy rates. The MDCs generally have higher female literacy rates. Therefore, the country with the highest female literacy rate would be ranked 20, and the country with the lowest female literacy rate would be ranked 1.

C. *Column K* is a human welfare development ranking for each country based on its rankings for infant mortality and female literacy rates. To complete *Column K*, calculate the average of values in *Columns H* and *J*.

D. In *Column L*, subtract the economic development ranking (*Column F*) from the human welfare development ranking (*Column K*). That is, $L = K - F$. This calculation allows you to see how a country ranks differently, depending on whether development is measured economically or with a human welfare model. A country with a negative value in *Column L* has a better ranking for economic development than for human welfare development, and a country with a positive value in *Column L* has a better ranking for human welfare development than for economic development.

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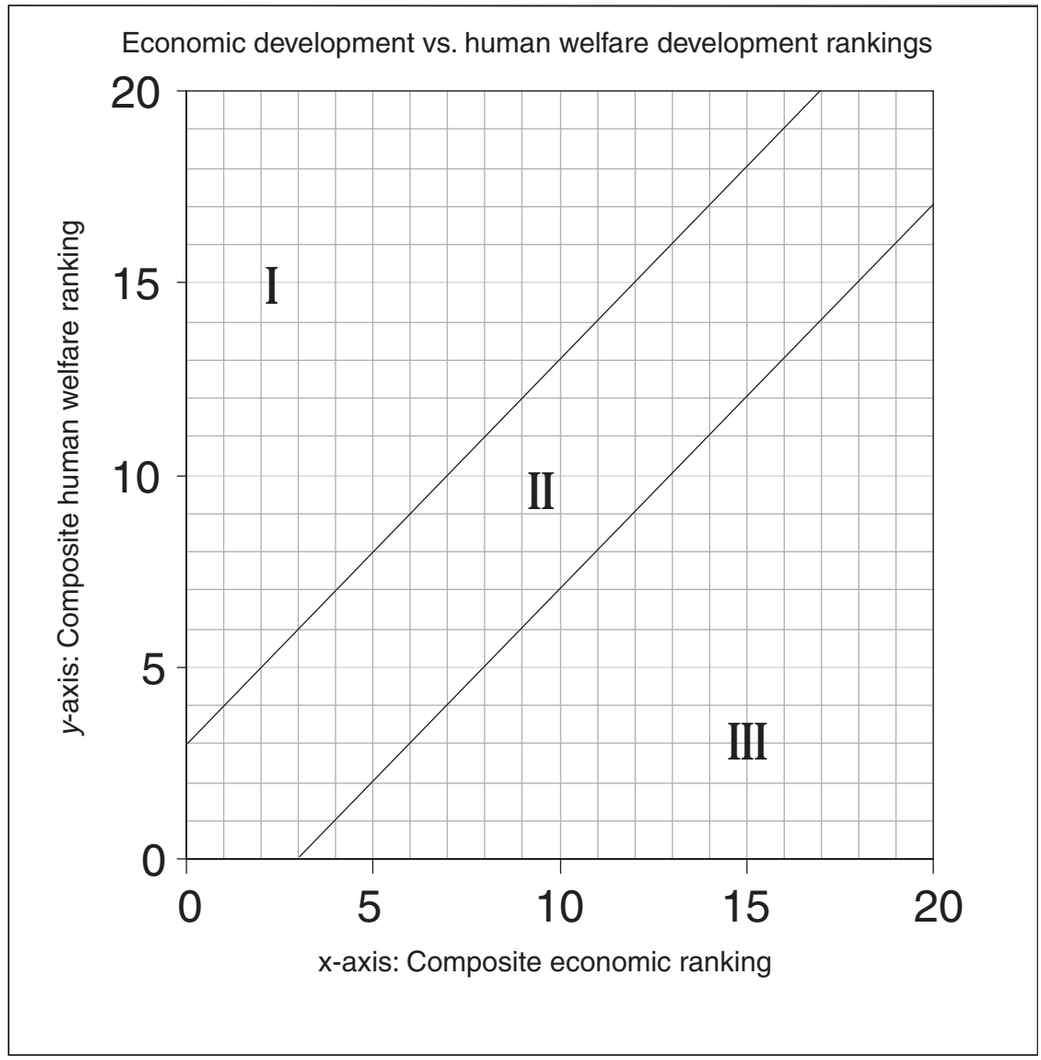
▶ ACTIVITY 3: COMPARING ECONOMIC DEVELOPMENT AND HUMAN WELFARE DEVELOPMENT MODELS

A. Transfer the values from *Column K* of Table 7.3 to *Column C* of Table 7.4 (on page 210). Notice that *Column B* in Table 7.4 has been copied from *Column F* on Table 7.3. The countries in Table 7.4 are in the same order as in Table 7.3.

B. Using the graph on page 206, create a scatter diagram of economic and human welfare development rankings for all 20 countries. Notice that both axes are scaled from 0 to 20. Locate the economic and human welfare ranks for the first country, the United States, in *Columns B* and *C* of Table 7.4. On the *x*-axis (horizontal) of the grid, locate the economic rank for the United States. On the *y*-axis (vertical) of the grid, locate the U.S. human welfare rank. Plot a point at the intersection of these rankings with a small abbreviation for the country name beside the point. Thus, you should have a point for the United States at the point (19.5, 17.5) on your scatter diagram. Complete this process for each country and label each point.

C. Notice that points fall into one of three sectors on the scatter diagram. Countries in Sector I have much higher human welfare scores than economic scores. Countries in Sector II have similar economic and human welfare development scores even though they may be low in both dimensions on the lower left or high in both dimensions on the upper right. Countries in Sector III have high economic scores compared to their human welfare measures of development. Also notice the relative position of each country away from the graph's diagonal. This position should reflect values in *Column L* of Table 7.3. Draw in a 45° diagonal line from (0, 0) to (20, 20). Countries with similar economic and human welfare rankings are arranged near or on the 45° line (Sector II). Countries with different rankings are represented by points situated well off the 45° line. Countries with large positive numbers in *Column L* are located far above the diagonal line (Sector I); countries with large negative numbers are located far below the line (Sector III).



3.1. Why do Cuba, Poland, Sri Lanka, and Moldova rank higher on the human welfare than on the economic dimension? (*Hint:* Look at Table 7.2.)

3.2. Why do Saudi Arabia and the United Arab Emirates rank higher on the economic than on the human welfare dimension?

3.3. What are the long-term ramifications of investing heavily in economic production at the expense of human welfare investment?

3.4. What are the long-term ramifications of investing heavily in human welfare at the expense of economic production?

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▶ ACTIVITY 4: ALTERNATIVE INDICATORS OF DEVELOPMENT

The first three activities have examined two models of development, each based on different indicators of development. What other indicators can you think of that might measure a country's success in realizing its full development potential? Look on the Internet to find international development indicators. From the Web Resources list at the end of the chapter, good data can be found at the Central Intelligence Agency, United Nations, U.S. Agency for International Development, U.S. Census Bureau, World Bank, and World Health Organization sites. Search the Web for other databases. Alternatively, go to your library and consult the United Nations' *Human Development Report; Demographic Yearbook; Compendium of Social Statistics and Indicators*; *2000 World Population Profiles*; and the *Statistical Yearbook*, as well as the World Bank's *World Development Report*. Regional UN reports such as the *2000 Statistical Yearbook for Latin America and the Caribbean* or *Asia and the Pacific* also are useful tools. Do not use any variables from the *Area and Demographic Data* online or on the CD. We want you to develop your Internet and library skills.

A. Choose four development indicators not used in Activities 1 through 3. Use any sources you wish other than our *Area and Demographic Data*, but be sure to note the sources from which you acquire data. Indicators can be either economic or human welfare in nature. Attempt to measure a different aspect of development with each indicator. Many options are available. Although there are no absolutely correct indicators, there are many incorrect or flawed indicators that you should avoid. These include so-called mass variables that measure the grand total of something in a country, such as total GDP or total number of doctors. Mass variables tend to be large for large countries and small for small countries. *All of your variables should therefore be in the form of a rate, a percentage, or a per capita variable*. Also avoid variables that are determined largely by factors other than development. Inflation rate, oil production, and population density are variables that could easily be very low or very high regardless of a country's level of development. Be able to justify the indicator's importance to development. Choose four new indicators, and record the data for each of the 20 countries on Table 7.4 in *Columns D, F, H*, and *J*.

   If you use multiple sources for a single variable, be sure units of measurement are the same. Beware of metric versus imperial units, rates per 100 versus rates per 1,000, or such things as electricity or energy units that differ. Try to find data for the same year. If you are unable to find data for a variable for one or two countries, leave them blank. If more than two countries are missing, use other sources or choose a new variable.

B. In *Columns E, G, I*, and *K*, respectively, rank values from *Columns D, F, H*, and *J*, respectively. Ranks will be from 1 to 20, and each country

TABLE 7.4 Alternate Indicators

A	B	C	D	E	F	G	H	I	J	K
Country	Economic Development *Ranking*	Human Welfare *Ranking*	First Indicator Value	First Indicator *Ranking*	Second Indicator Value	Second Indicator *Ranking*	Third Indicator Value	Third Indicator *Ranking*	Fourth Indicator Value	Fourth Indicator *Ranking*
United States	19.5									
Singapore	19.5									
Canada	18.0									
Iceland	17.5									
United Arab Emirates	16.0									
Taiwan	15.0									
Argentina	14.0									
Saudi Arabia	13.5									
Mexico	12.0									
Poland	10.5									
South Africa	10.0									
Turkey	8.0									
Morocco	6.5									
Sri Lanka	7.5									
Moldova	6.5									
Cuba	8.0									
Senegal	3.5									
Cambodia	2.5									
Dem. Rep. of the Congo (Zaire)	3.0									
Afghanistan	1.0									

should have a different, whole number ranking (except in the case of ties). The country with the value indicating the highest level of development (relative to that variable) will be ranked 20. The country with the value indicating the lowest level of development (relative to that variable) will be ranked 1. Think carefully about whether a high value of your variable indicates a high level of development. Remember, for example, that *low* infant mortality rates and *high* literacy rates both indicate high development.

4.1. List each of your four variables, how it is measured (if necessary), and where you obtained the data. Give a justification for the choice of each variable as an indicator of development.

Variable 1 (*Column D*):

Source:

Justification:

Variable 2 (*Column F*):

Source:

Justification:

Variable 3 (*Column H*):

Source:

Justification:

Variable 4 (*Column J*):
Source:
Justification:

4.2. How did the rankings for your variables differ from those provided earlier in the exercise? Which countries scored higher? Which scored lower? Why?