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*The Educational Attainment  
of the Labor Force:  
An International Comparison*

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Ana-Maria Arriagada

*October 1986*

Education and Training Department

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### **Abstract**

The most commonly used indicator of human resource development is the enrollment ratio for different levels of schooling. The paper argues that a more accurate indicator in this respect, although more difficult to obtain, is the educational attainment of the labor force. Therefore, such data have been collected mainly from the 1980 round of censuses for nearly 100 countries and summarized into regional indices of human resource development. One such index, the mean years of schooling embodied in the labor force, shows significant differences in the human capital stock between world regions, as well as between countries within a given region. Such differences in human capital endowments could be further used to explain variations in economic growth patterns across countries, or to form the basis for assessing relative priorities in educational investment.

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## THE EDUCATIONAL COMPOSITION OF THE LABOR FORCE: AN INTERNATIONAL COMPARISON

When assessing human capital scarcities, analysts typically use differential enrollment ratios between different countries or regions as a justification for educational investment. In this paper we argue that although the enrollment ratio is a readily available school statistic, it may not be the most appropriate indicator for setting investment priorities in education. Instead we compile and present statistics and a more sensitive human capital index -- the educational composition of the labor force.

### Flows versus Stocks

At any given point in time, a country's productive capacity is largely determined by its factor endowments, like the amount of cultivated land, the amount of installed physical capital, the size of the labor force and the amount of human capital embodied in the labor force. Such stocks of productive resources are changing over time by means of investment flows, e.g. the stock of physical capital is augmented each year by the flow of net investment in new machines. In a similar fashion, the human capital stock is changing by means of the net additions to the labor force of the flow of graduates of the educational system.

In the case of education the difference between stocks and flows is perhaps more important relative to other factors of production for the following reasons:

- (a) the time lag between investment in education (say, as measured by enrollments) and additions to the human capital stock is longer than in any other sector;
  
- (b) some investment in education may never translate to additions to the human capital stock because of losses in the process (e.g. graduates of the educational system not participating in the labor force, or school time wasted by dropout and repetition).

It is true that enrollment ratios measure the effort a country is making to alter the human capital stock -- such enrollment ratios will some time be reflected in the stock. But enrollment ratios may give an inaccurate or distorted picture when assessing relative priorities for educational investment. A more accurate measure is the stock of human capital embodied in the country's labor force.

#### The Data Set

Of course the limiting factor in moving from enrollment to labor force statistics, is that the latter are not as readily available, and if they are, they are seldom cross-classified by the educational level of the worker.

Layard and Saigal (1967), the OECD (1970) and Psacharopoulos (1973) made attempts in the past to compile such data, although the number

of countries never exceeded 14. Given the availability of the 1980 round of censuses, two fresh efforts have been made to generate such data set:

- (a) a search was conducted on published censuses and special labor force surveys, which generated usable data for 66 countries in all world regions;
- (b) the above data base was supplemented by the material available at the US Bureau of the Census, (Maryland Office), refined to include the educational attainment of the population at large by age and sex, yielding an additional 33 countries. (Kaneko, 1986).

Given that nearly all the male population over 15 years old participate in the labor force, we considered source (b), above an acceptable proxy of the labor force educational attainment. Thus, our sample includes 99 countries. Appendix B contains a detailed account of the labor force definitions and the exact sources of information used in each country case.

#### Data Reduction

Table 1 gives the distribution of the total labor force by level of educational attainment (Appendix Table A-1 reports a more aggregate distribution along with more information on the sample composition). Given such wide variation between countries and regions, a method of data

reduction is dictated. As such we used the mean years of schooling embodied in the labor force, estimated as:

$$\bar{S} = \sum_i L_i S_i, \text{ where}$$

$L_i$  is the share of persons in the labor force with the  $i$ th level of schooling,

$S_i$  is the number of years of the  $i$ th level of schooling,

and where

$i$  ranges over illiterates, primary incomplete, primary completed, secondary incomplete, secondary completed and university.



**Table 1: Educational Attainment of the Labor Force**

Region and Country	Percentage of the Labor Force with						Mean Years of Schooling
	No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher			
<b>East Africa</b>							
Botswana	60.2	27.1	8.8	2.5	0.8	0.4	2.0
Ethiopia *	62.1	15.6	6.7	6.7	7.1	1.8	2.6
Kenya	48.9	16.0	24.9	4.0	5.8	0.4	3.5
Lesotho +	38.1	26.0	22.7	12.3	0.8	0.1	4.3
Malawi +	35.4	31.7	18.0	13.1	1.5	0.3	2.9
Mauritius	21.7	42.5	13.9	15.2	4.9	1.8	4.5
Mozambique +	57.7	28.2	11.4	2.5	0.2	0.1	1.2
Reunion +	19.8	28.4	9.4	25.1	13.1	4.2	5.4
Rwanda +	55.2	21.3	19.3	3.2	0.6	0.3	2.2
Sudan	35.0	10.6	26.1	13.0	10.3	5.1	5.5
Swaziland	38.7	17.8	22.8	14.8	3.3	2.6	4.4
Zambia *	20.2	38.4	13.8	6.3	20.2	1.1	5.5
Regional Average	41.1	25.3	16.5	9.8	5.7	1.5	3.7
<b>West Africa</b>							
Cameroon	61.7	17.6	14.3	0.7	5.0	0.7	2.2
Ivory Coast	59.2	3.1	18.0	14.4	5.3	0.0 <sup>1/</sup>	3.2
Liberia	82.9	5.1	3.2	4.3	2.5	1.9	1.3
Mali	91.0	3.2	4.8	0.5	0.2	0.2	0.5
Nigeria	86.2	3.8	9.1	0.5	0.3	0.0 <sup>1/</sup>	0.8
Senegal +	37.0	43.6	10.9	5.4	1.8	1.2	2.9
Regional Average	69.7	12.7	10.1	4.3	2.5	0.7	1.8
<b>East Asia and the Pacific</b>							
China	28.3	13.1	21.3	25.8	10.7	0.9	4.5
Fiji +	9.0	13.8	24.5	27.9	21.4	3.3	8.3
Hong Kong +	7.6	17.6	19.1	21.3	26.2	8.1	8.8
Indonesia	31.6	23.1	35.7	5.3	3.8	0.5	3.9
Korea	14.8	1.1	33.2	18.5	23.4	9.1	8.0
Malaysia	27.0	1.7	55.7	9.2	4.6	1.8	5.0
New Caledonia +	6.0	52.7	0.0	<sup>1/</sup> 36.6	0.0	<sup>1/</sup> 4.6	5.9
Phillipines +	7.8	21.3	27.4	15.1	12.7	15.7	7.0
Singapore	40.3	4.9	21.9	16.0	8.3	8.5	5.3
Taiwan	8.9	5.1	32.7	17.7	24.0	11.5	8.4
Thailand	12.0	72.2	6.8	4.9	2.0	2.2	4.1
Tonga +	0.2	25.8	10.1	60.8	0.2	2.9	7.3
Regional Average	16.1	21.0	24.0	21.6	11.4	5.8	6.4

- continued -

Table 1 - continued

Country	Percentage of the Labor Force with						Mean Years of Schooling
	No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher			
<b>South Asia</b>							
Bangladesh	62.4	15.9	4.1	10.7	5.5	1.5	2.4
India	66.6	14.5	6.9	4.9	3.9	3.2	1.9
Maldives	76.7	17.1	2.1	3.4	0.4	0.2	0.9
Pakistan	75.8	11.2	7.7	3.7	0.6	1.0	1.2
Sri Lanka	23.1	15.7	23.6	32.4	4.4	0.8	6.2
Regional Average	60.9	14.9	8.9	11.1	3.0	1.4	2.5
<b>EMENA</b>							
Afghanistan +	72.0	6.1	9.4	5.6	7.0	0.0	2.1
Algeria	37.0	17.1	12.7	19.0	5.7	2.1	4.0
Bahrain +	43.9	10.6	8.0	15.2	15.5	6.8	4.9
Egypt Arab R.	53.2	19.3	10.1	5.6	6.7	5.1	3.3
Iran	63.5	10.1	10.9	9.1	3.2	3.2	2.7
Jordan +	37.0	10.3	12.9	20.7	11.0	8.1	5.6
Kuwait *	33.8	24.8	10.9	9.2	13.1	8.2	4.5
Lebanon *	29.5	35.2	15.2	9.5	6.3	4.3	3.9
Morocco	81.9	6.5	0.7	8.4	2.5	0.0 <sup>1/</sup>	1.2
Qatar *	66.8	11.0	7.5	5.5	6.0	3.2	2.5
Syrian Arab R.	33.6	31.9	17.3	5.2	8.3	3.7	4.1
Tunisia	73.0	3.1	12.3	5.4	4.3	1.9	2.2
United Arab E.*	77.1	0.0	12.2	0.0	7.7	2.9	2.1
Yemen Arab R.	0.0	80.3	10.9	2.4	4.9	1.5	4.1
Regional Average	50.2	19.0	10.8	8.6	7.3	3.6	3.4
<b>Latin America and the Caribbean</b>							
Argentina	7.0	35.4	38.2	5.7	9.9	3.7	6.2
Barbados	0.6	7.2	15.8	60.1	5.2	11.1	8.9
Belize	8.3	31.5	34.4	13.4	11.2	1.2	6.9
Bolivia	31.0	13.8	23.4	14.2	11.6	6.0	5.4
Brazil	24.7	35.3	7.9	19.6	6.6	5.9	5.6
Chile	4.1	32.2	18.8	24.4	12.2	8.3	8.1
Colombia	16.3	31.3	23.6	9.2	14.9	4.7	5.0
Costa Rica	10.6	34.7	34.7	8.4	6.5	5.1	6.4
Cuba +	4.2	23.5	22.6	29.0	8.9	11.9	8.2
Ecuador +	16.2	13.9	37.0	13.5	10.8	8.5	6.5
Guadalupe +	8.7	31.8	10.6	21.4	22.3	5.3	6.5
Guatemala	51.7	12.7	28.1	2.6	3.5	1.4	3.0

- continued -

Table 1 - continued

Country	Percentage of the Labor Force with						Mean Years of Schooling
	No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher			
<b>Latin America and the Caribbean - continued</b>							
Guyana	17.6	0.0	34.2	41.7	1.2	5.3	6.8
Haiti	72.9	15.5	3.4	3.5	4.0	0.8	1.6
Honduras	53.3	33.3	8.2	2.0	2.6	0.7	2.1
Jamaica	2.6	1.6	76.6	7.1	12.1	0.0 <sup>1/</sup>	6.9
Martinique	2.3	40.9	1.9	18.7	27.9	8.3	6.0
Mexico	26.9	28.8	26.9	8.9	3.2	5.2	4.5
Nicaragua	49.7	19.5	20.5	4.5	4.8	1.0	4.4
Panama	34.2	19.5	19.5	11.2	10.5	5.1	4.8
Paraguay	10.5	62.2	11.2	7.6	5.9	2.6	4.3
Peru	13.5	20.7	26.2	12.9	14.6	12.1	7.0
Trinidad-Tobago+	3.5	21.7	40.4	22.3	9.1	2.9	6.6
Uruguay	5.1	33.8	29.2	12.3	7.3	12.4	6.7
Venezuela	15.9	24.8	24.8	17.1	11.1	6.3	6.2
Regional Average	19.7	25.0	24.7	15.7	9.5	5.4	5.8
<b>South Europe</b>							
Greece +	3.9	12.5	44.5	12.8	15.1	11.3	7.9
Israel +	2.5	5.8	20.5	17.6	31.6	22.1	11.3
Portugal +	16.3	53.3	8.4	10.8	5.4	5.8	4.5
Spain	13.5	9.5	47.6	10.8	8.8	9.7	6.2
Turkey +	16.1	10.3	50.4	9.8	8.9	4.5	5.1
Yugoslavia +	7.4	2.7	49.8	32.9	3.0	4.2	5.6
Regional Average	10.0	15.7	36.8	15.8	12.1	9.6	6.8
<b>East Europe &amp; Non-Market</b>							
Bulgaria +	4.0	3.3	64.3	5.6	16.9	5.8	8.7
Czechoslovakia +	0.0	0.3	37.2	7.8	47.9	6.9	11.5
Germany D.R. +	0.2	0.0	19.2	0.0	63.9	16.7	11.9
Hungary +	0.7	6.1	22.1	30.2	32.5	8.4	10.4
Poland +	1.3	3.2	5.4	41.4	43.3	5.5	10.7
Romania	0.0	3.3	38.8	29.9	23.1	4.9	9.8
Regional Average	1.0	2.7	31.2	19.2	37.9	8.0	10.5

- continued -

Table 1 - continued

Region and Country	Percentage of the Labor Force with						Mean Years of Schooling
	No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher			
<b>Developed Countries</b>							
Australia +	0.7	2.9	3.4	67.8	21.9	3.3	11.1
Belgium	3.9	<u>2/</u> 7.2	38.3	25.7	16.8	8.1	8.1
Canada	0.0	3.1	10.2	26.9	23.9	35.9	11.7
Denmark	0.0	4.9	39.3	33.5	11.7	10.6	8.6
Finland +	0.0	21.5	26.3	11.1	33.2	8.0	8.5
France +	0.4	38.6	24.8	18.2	9.6	8.4	6.2
Germany F.R.+	0.7	0.0	12.5	53.9	19.4	13.5	10.4
Japan	0.0	0.0	39.3	20.3	22.4	18.0	9.8
Netherlands The	0.0	1.7	31.3	44.9	11.2	10.9	9.1
New Zealand	0.0	0.0	9.3	44.2	15.6	30.9	11.7
Norway +	0.0	2.1	0.0	67.7	16.7	13.4	11.3
Switzerland +	0.0	4.0	21.8	9.2	49.4	15.6	11.0
United States	0.0	2.1	7.8	18.8	35.8	35.6	12.6
Regional Average	0.4	6.8	20.3	34.0	22.1	16.3	10.0

Source: Appendix Table A-1

\* : Non-census data

+ : Refers to the educational attainment of the male population

1/ No data available to separate them from the previous level

2/ Includes "unknown education level"

Appendix B gives the  $S_1$  used for each country, as well as a description of the methodology used in its calculation. As shown in Table 2, West Africa

Table 2: Mean Years of Schooling of the Labor Force,  
by Region

Region	(N)	Mean Years of Schooling
East Africa	(12)	3.7
West Africa	(6)	1.8
East Asia	(12)	6.4
South Asia	(5)	2.5
EMENA	(14)	3.4
Latin America	(25)	5.8
South Europe	(6)	6.8
East Europe & Non-Market	(6)	10.5
Developed countries	(13)	10.0

(N) = Number of countries reporting.

Source: Appendix B.

is the least educationally developed region with 1.8 years of schooling embodied in the labor force, followed by South Asia (2.5 years), EMENA (3.4) and East Africa (3.7). East Asia and Latin American score over five years of schooling, which is about half the value of the index in OECD countries. Figures 1 and 2 give a graphic summary of the differential level of educational development in the World.

Figure 1. YEARS OF SCHOOLING OF THE LABOR FORCE  
Regional Averages

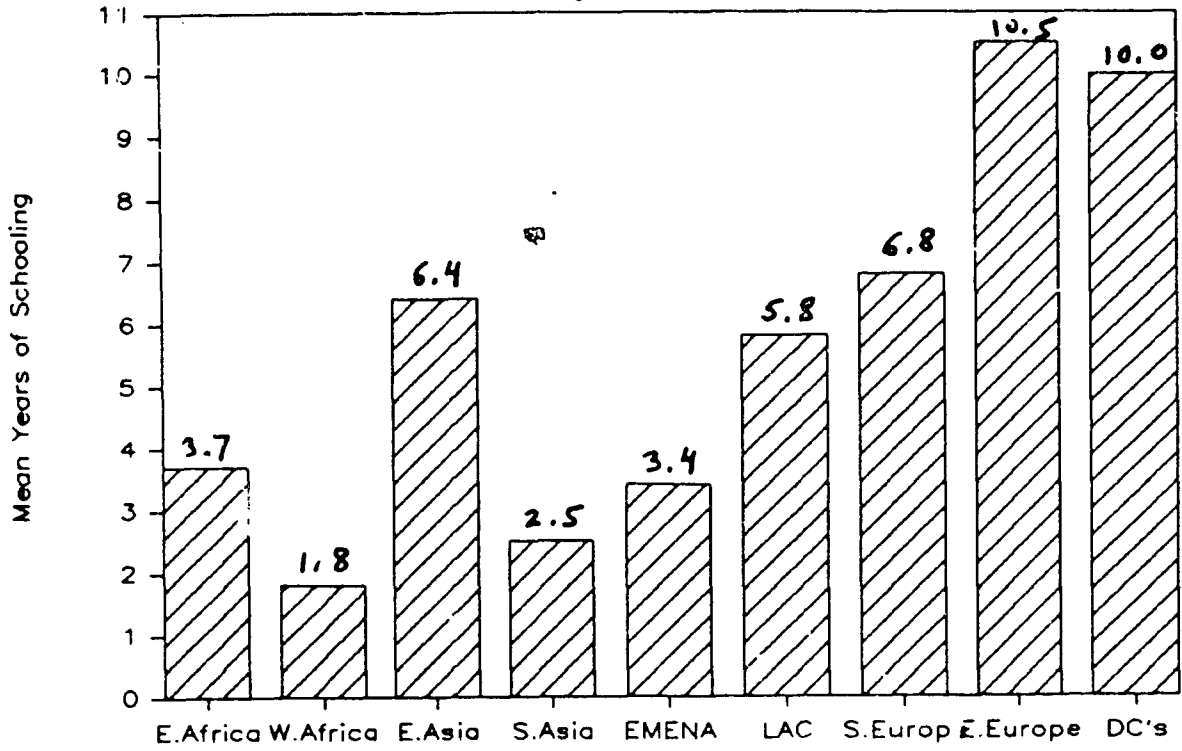
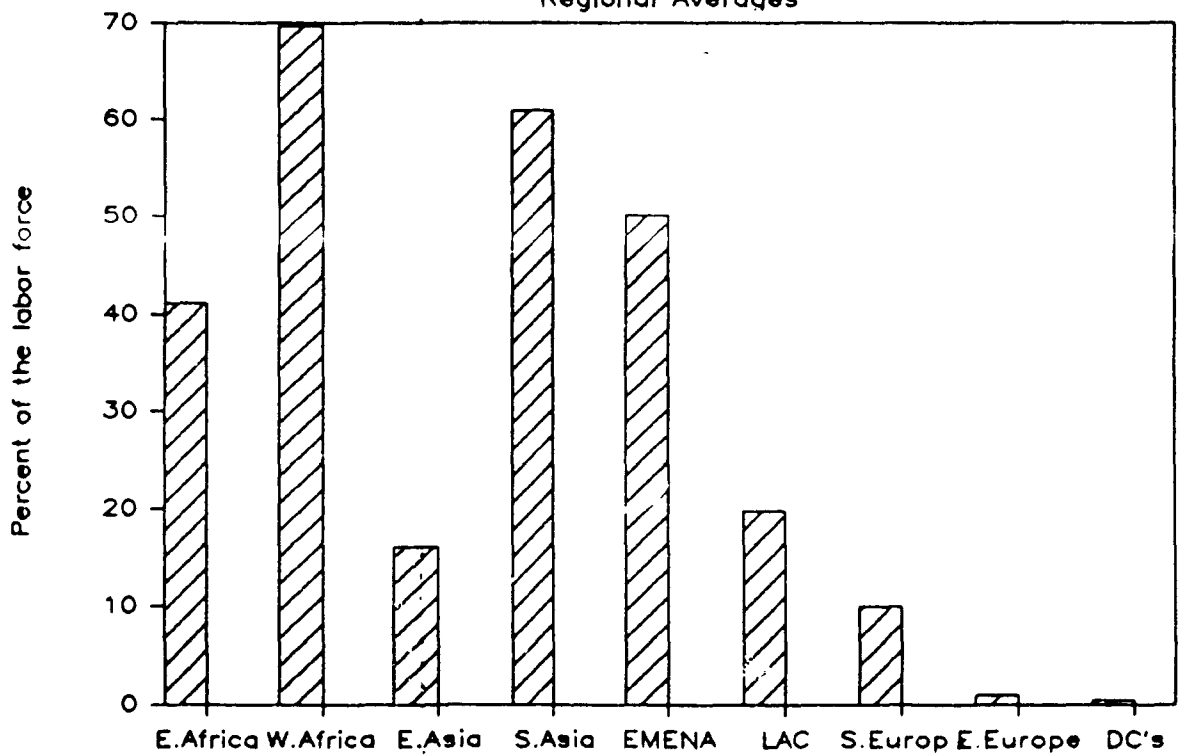


Figure 2. LABOR WITH NO SCHOOLING  
Regional Averages



At this point it is worth contrasting the mean years of education embodied in the labor force to another popular index based on enrollment ratios. Harbison and Myers (1964), facing the same problem as us for data reduction, constructed a "composite index of human resource development" as the weighted sum of the enrollment ratios at the secondary and higher education level, i.e.,

$$I = E_p(0) + E_s(1) + E_h(5),$$

where  $E_p$ ,  $E_s$ , and  $E_h$  refer to the enrollment ratios at the primary, secondary and higher education levels, respectively, and the numbers in parenthesis to the arbitrary weights attached to each level of education.

The authors justify the 5:1 weight of higher relative to secondary education as follows: "In our judgement higher education should be weighted more heavily than second-level" (Harbison and Myers, 1964, p.32). However, the authors are silent regarding the 0 weight implicitly attached to primary education.

By contrast, our index of mean years of schooling of the labor force explicitly incorporates primary education in its estimation, and the relative weights are non-arbitrary and have a particular meaning. For example, a simple version of our index, for facilitating comparison with the Harbison and Myers one, is

$$S = L_o(0) + L_p(6) + L_s(12) + L_h(16),$$

where  $L_i$  stands for the share of the labor force with a particular educational level, and the weight is the length in years of the respective educational cycle.

The difference between using enrollment or labor force information is far from being academic -- it can influence decisions on educational policy, and this has indeed happened in practice. For example, the prescription for boosting a country's score of educational development on the Harbison and Myers index would be to increase university enrollments, since such enrollments carry a heavy weight in the value of the index. By contrast, the index of the mean years of schooling of the labor force is more responsive to primary education, not only by means of a non-zero weight, but also by the fact that  $L_p$  constitutes the second largest share in the distribution of the labor force by educational level in developing countries.



### Longitudinal Trends

In thirty four out of the ninety-nine countries in our sample, information exists on more than one year in the past on the educational composition of the labor force. Table 3 demonstrates the slow process of building human capital stock. In most developing countries, the educational level of the labor force is being upgraded by about one-tenth of one schooling year per calendar year.

Even spectacular increases in enrollment ratios, as in the case of West Africa, do not readily translate to an improvement in the educational composition of the labor force (see Figures 3 to 8). The reason is that enrollment ratios hide information on the internal efficiency of the system, e.g., its capacity to retain students. And even if the system were perfectly efficient, the labor forces stock is about 30-40 times greater than the annual flow of new entrants. To illustrate the above point let us look at India. The primary level enrollment ratio was 61% in 1960, 73% in 1970 and 72% in 1980. These figures do not appear too low compared to other developing countries, and may lead one to think that primary schooling is being handled well. However, if we look at the educational attainment of the labor force in 1981, 67% are illiterate, while 20% attended primary education. Furthermore, of the 20% with primary education, only 6% completed the cycle. In terms of policy formulation, the conclusions reached by using one indicator rather than another can lead to different priorities for educational investment.

Concluding Comment

The educational attainment of the labor force is a more accurate indicator to evaluate the accomplishments of educational investments than enrollment ratios. The former assesses the effective supply of human resources available or unavailable for economic growth, and captures the degree in which flows translate into human capital stocks. Enrollment ratios alone are insufficient to derive education policies or priorities for the sector because they give a false (upwardly biased) impression of the educational attainment of a country's human resources.

Enrollment ratios say little about the outcomes of enrollment. For example, do "enrolled" students in fact attend school? Moreover, enrollment ratios hide the degree of internal efficiency of the education system because they include in the numerator students over the age of the denominator cohort. Do students complete the cycles they enroll into? Do they drop out of school before they attain literacy? Do they repeat grades? Thus the use of enrollment statistics can be misleading in the formulation of education policies, not only in regard to priorities for educational investment, but also in evaluating the internal efficiency of the system.

**Table 3: Over Time Changes in the Educational Composition of the Labor Force**

Country		Percentage of the Labor Force with						
		No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher Incom. Compl.	Mean Years of Schooling		
<b>East Africa</b>								
Mauritius	1972	21.7	42.5	13.9	15.2	4.9	1.8	4.5
Mauritius +	1983	10.2	14.2	34.7	31.4	5.4	4.1	6.7
Zambia	1963	51.9	19.6	11.9	16.5	0.1	0.0	3.3
Zambia *	1979	20.2	38.4	13.8	6.3	20.2	1.1	5.5
<b>West africa</b>								
Nigeria	1963	90.0	5.9	2.6	0.9	0.4	0.2	0.5
Nigeria	1967	86.2	3.8	9.1	0.5	0.3	0.0	0.8
<b>EMENA</b>								
Egypt Arab R.	1960	63.6	27.7	2.1	4.7	0.3	1.9	1.7
Egypt Arab R.	1976	53.2	19.3	10.1	5.6	6.7	5.1	3.3
Morocco	1971	81.9	6.5	0.7	8.4	2.5	0.0	1.2
Morocco +	1982	56.4	12.9	8.8	14.9	5.1	1.9	2.9
Syrian Arab R.	1960	54.8	31.8	9.0	2.6	1.1	0.8	2.0
Syrian Arab R.	1975	33.6	31.9	17.3	5.2	8.3	3.7	4.1
<b>East Asia and the Pacific</b>								
Indonesia	1978	31.6	23.1	35.7	5.3	3.8	0.5	3.9
Indonesia +	1980	26.1	18.9	33.4	11.4	8.9	1.2	4.9
Korea	1969	44.9	9.1	30.2	7.3	6.1	2.4	3.9
Korea	1980	14.8	1.1	32.2	18.5	23.4	9.1	8.0
Malaysia	1967	27.0	1.7	55.7	9.2	4.6	1.8	5.0
Malaysia +	1980	17.9	17.1	23.4	22.9	16.1	2.6	6.5
Singapore	1974	40.3	4.9	21.9	16	8.3	8.5	5.3
Singapore +	1980	21.9	3.0	46.4	18.4	6.3	4.0	6.0
Taiwan +	1980	9.3	4.5	30.2	18.9	24.3	12.7	8.6
Taiwan	1983	8.9	5.1	32.7	17.7	24.0	11.5	8.4
Thailand	1960	37.4	55.6	1.1	3.5	2.0	0.4	3.3
Thailand	1974	12.0	72.2	6.8	4.9	2.0	2.2	4.1
Thailand +	1980	10.1	64.2	7.0	11.2	4.1	3.4	4.6

- continued -

Table 3 - continued

Country		Percentage of the Labor Force with						
		No Edu- cation	Primary Incom. Compl.	Secondary Incom. Compl.	Higher	Mean Years of Schooling		
<b>South Asia</b>								
India	1961	89.9	5.2	2.1	1.9	0.3	0.6	0.5
India	1981	66.6	14.5	6.9	4.9	3.9	3.2	1.9
Pakistan	1975	75.8	11.2	7.7	3.7	0.6	1.0	1.2
Pakistan +	1981	65.9	7.4	5.2	16.4	2.4	2.7	2.5
Sri Lanka	1963	22.2	27.9	41.9	2.7	3.2	2.1	5.3
Sri Lanka	1971	23.1	15.7	23.6	32.4	4.4	0.8	6.2
Sri Lanka +	1981	8.5	12.7	35.9	38.3	2.8	1.8	7.5
<b>Latin America and the Caribbean</b>								
Argentina	1960	7.0	35.4	38.2	5.7	9.9	3.7	6.2
Argentina +	1980	4.7	24.9	34.8	17.7	9.5	8.4	7.4
Brazil	1960	48.2	45.1	3.4	2.3	0.4	0.5	2.4
Brazil	1980	24.7	35.3	7.9	19.6	6.6	5.9	5.6
Chile	1969	18.6	36.0	20.5	11.3	11.2	2.3	5.9
Chile	1981	4.1	32.2	18.8	24.4	12.2	8.3	8.1
Colombia	1951	42.3	41.7	8.0	5.3	1.7	1.0	2.2
Colombia	1964	28.9	48.5	12.1	5.8	3.3	1.3	2.8
Colombia	1973	16.8	35.5	20.1	10.1	13.2	4.3	4.8
Colombia	1978	16.3	31.3	23.6	9.2	14.9	4.7	5.0
Guatemala	1964	63.6	27.0	5.1	2.6	0.6	1.1	1.7
Guatemala	1973	51.7	12.7	28.1	2.6	3.5	1.4	3.0
Honduras	1961	53.3	33.3	8.2	2.0	2.6	0.7	2.1
Honduras +	1974	42.3	27.2	21.6	3.6	3.9	1.4	3.0
Mexico	1970	23.6	43.5	17	6.3	5.5	4.1	4.2
Mexico	1977	26.9	28.8	26.9	8.9	3.2	5.2	4.5
Panama	1960	43.9	13.0	22.5	8.5	8.8	3.3	4.0
Panama	1970	34.2	19.5	19.5	11.2	10.5	5.1	4.8
Panama +	1980	12.5	17.9	30.0	19.9	11.7	8.0	6.6

- continued -

Table 3 - continued

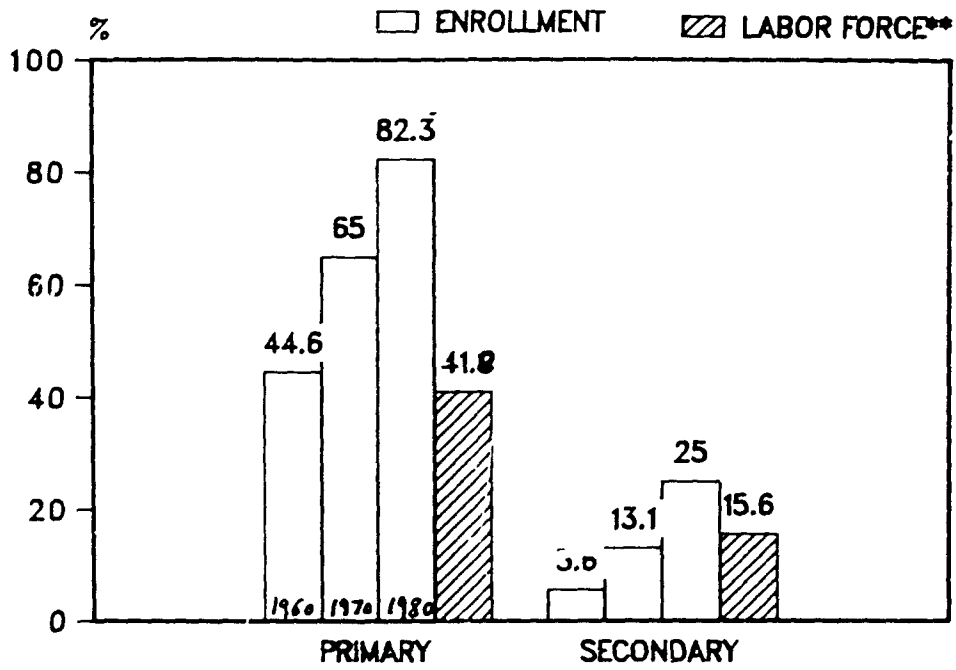
Country		Percentage of the Labor Force with						
		No Edu- cation	Primary Incom.	Primary Compl.	Secondary Incom.	Secondary Compl.	Higher	Mean Years of Schooling
<b>Latin America and the Caribbean - continued</b>								
Paraguay	1972	10.5	62.2	11.2	7.6	5.9	2.6	4.3
Paraguay +	1982	8.1	39.4	26.4	15.4	6.9	3.8	5.6
Peru	1961	31.1	33.7	20.7	6.1	5.4	3.0	3.9
Peru	1981	13.5	20.7	26.2	12.9	14.6	12.1	7.0
Uruguay	1963	8.8	44.8	24.5	14.7	3.7	3.4	5.1
Uruguay +	1975	5.1	33.8	29.2	12.3	7.3	12.4	6.7
Venezuela	1979	15.9	24.8	24.8	17.1	11.1	6.3	6.2
Venezuela +	1982	14.1	23.4	23.4	19.8	12.1	7.2	6.4
<b>Developed Countries</b>								
Belgium	1970	3.9	7.2	38.3	25.7	16.8	8.1	8.1
Belgium +	1977	3.6	7.8	43.0	20.8	13.9	11.0	8.3
Canada	1969	0.0	6.2	34.3	20.3	30.4	8.8	9.1
Canada	1981	0.0	3.1	10.2	26.9	23.9	35.9	11.7
Denmark	1981	0.0	4.9	39.3	33.5	11.7	10.6	8.6
Denmark +	1983	0.0	2.2	17.6	15.2	47.9	17.1	10.8
Greece	1961	42.0	29.8	17.4	5.1	2.8	2.9	3.2
Greece	1971	30.4	29.2	24.0	6.8	4.6	4.9	4.3
Greece +	1981	3.9	12.5	44.5	12.8	15.1	11.3	7.9
Japan	1969	0.0	3.9	66.5	12.4	10.6	6.6	7.6
Japan	1979	0.0	0.0	39.3	20.3	22.4	18.0	9.8
Netherlands	1967	0.0	2.9	54.1	8.8	2.2	11.0	6.1
Netherlands	1975	0.0	1.7	31.3	44.9	11.2	10.9	9.1
United States	1950	0.0	33.8	28.2	20.0	3.2	14.8	8.3
United States	1969	0.0	12.3	23.3	10.1	35.1	19.2	10.6
United States	1981	0.0	2.1	7.8	18.8	35.8	35.6	12.6

Source: Appendix Table A-1 and Appendix C

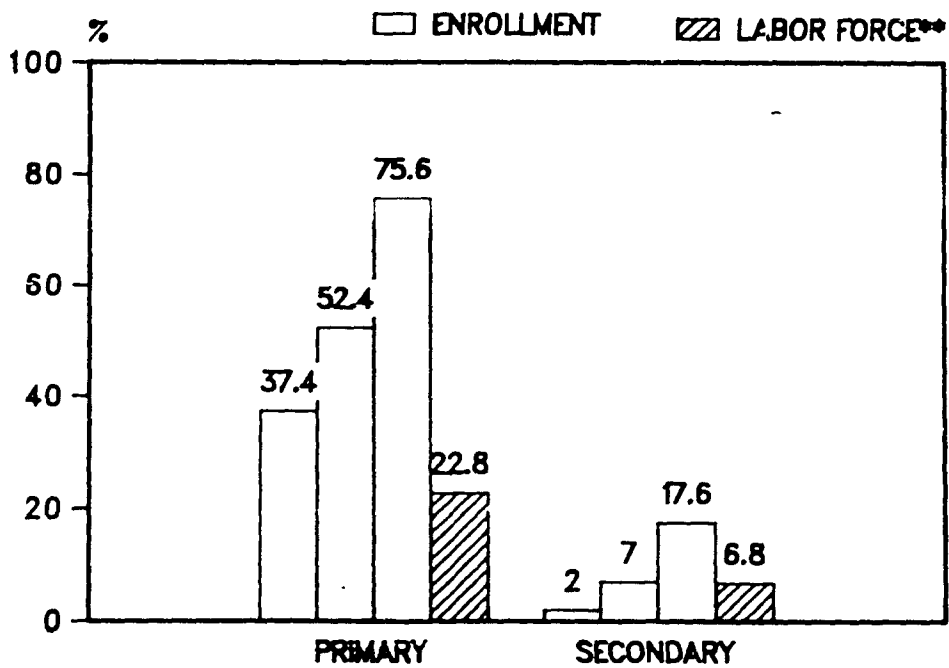
\* : Non-Census data

+ : Refers to the educational attainment of the male population.

**Figure 3. EAST AFRICA. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)

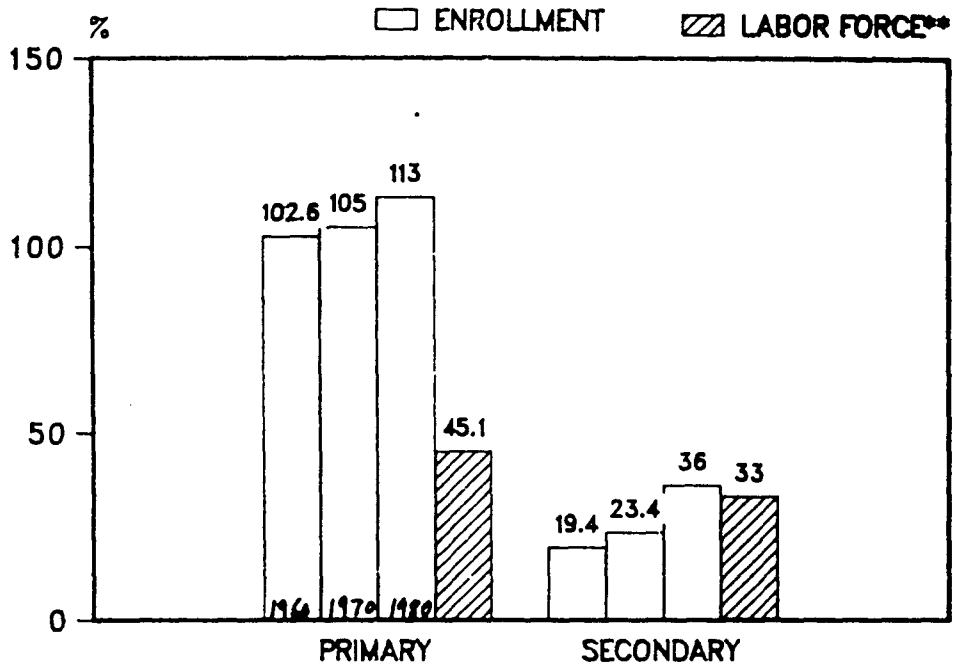


**Figure 4. WEST AFRICA. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)

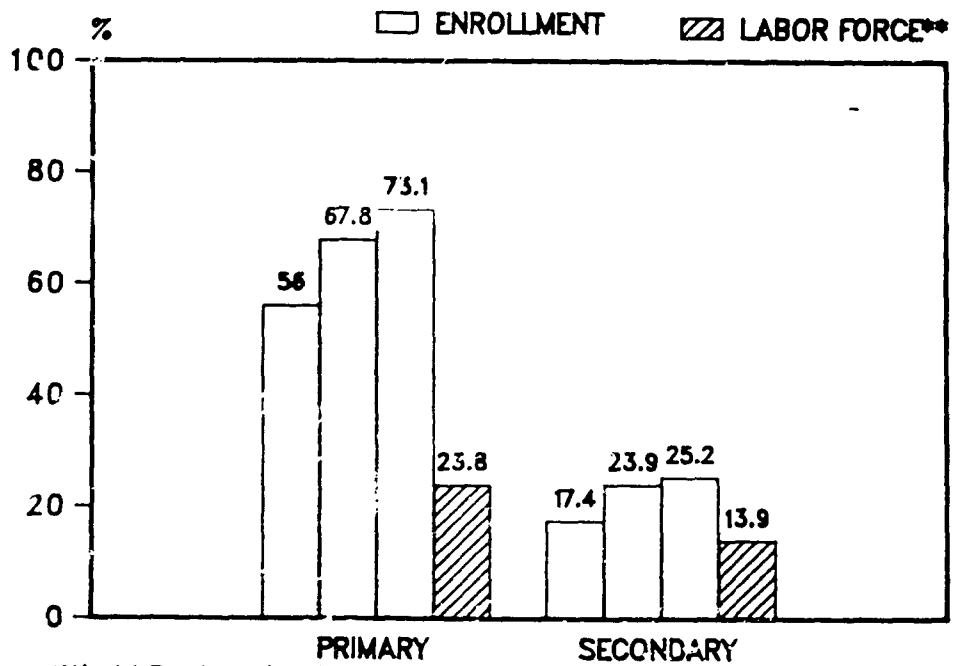


\*World Bank estimates.  
\*\*Most Recent Estimates.

**Figure 5. EAST ASIA AND PACIFIC. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)

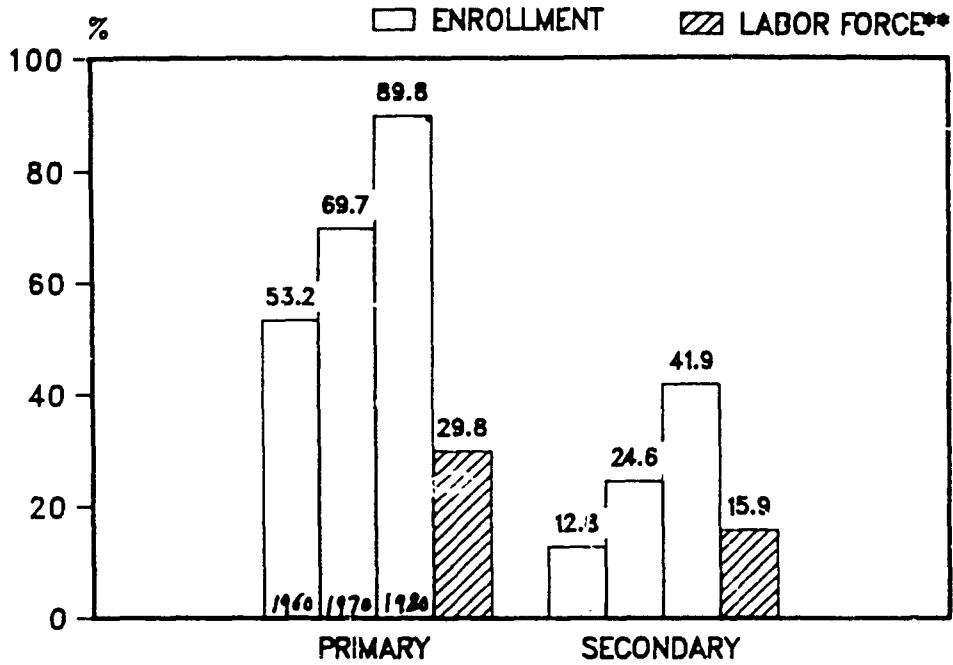


**Figure 6. SOUTH ASIA AND PACIFIC. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)

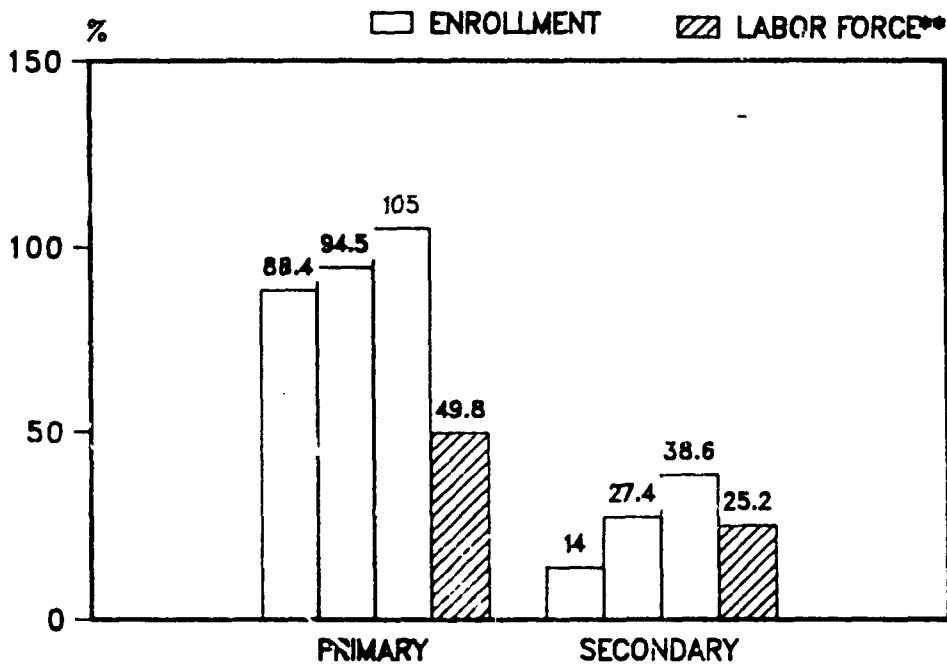


\*World Bank estimates.  
\*\*Most Recent Estimates.

**Figure 7. EMENA. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)



**Figure 8. LATIN AMERICA AND CARIBBEAN. FLOWS VS STOCK.**  
(enrollment ratios\* vs labor force educational attainment)



\*World Bank estimates.  
\*\*Most Recent Estimates.



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APPENDIX TABLE A-1

EDUCATIONAL ATTAINMENT OF THE LABOR FORCE AND  
MEAN YEARS OF SCHOOLING BY REGION

Country	Year	Total LF	LO%	LP%	LS%	LH%	Mean Years of Schooling
<b>East Africa</b>							
Botswana	1971	304,714	60.2	35.9	3.3	0.4	2.0
Ethiopia *	1973	194,080	62.1	22.3	13.8	1.8	2.6
Kenya	1980	6,561,050	48.9	40.9	9.8	0.4	3.5
Lesotho +	1976	356,509	38.1	48.6	13.1	0.1	4.3
Malawi +	1977	1,432,799	35.4	49.6	14.6	0.3	2.9
Mauritius	1972	215,224	21.7	56.4	20.1	1.8	4.5
Mozambique +	1980	2,917,175	57.7	39.6	2.6	0.1	1.2
Reunion +	1982	157,354	19.8	37.8	38.2	4.2	5.4
Rwanda +	1978	1,257,542	55.2	40.6	3.8	0.3	2.2
Sudan	1974	201,850	35.0	36.7	23.3	5.1	5.5
Swaziland	1976	108,237	38.7	40.6	18.1	2.6	4.4
Zambia *	1979	51,425	20.2	52.2	26.5	1.1	5.5
Regional Average			41.1	41.8	15.6	1.5	3.7
<b>West Africa</b>							
Cameroon	1976	2,748,314	61.7	31.9	5.7	0.7	2.2
Ivory coast	1978	435,124	59.2	21.1	19.7	0.0 <sup>1/</sup>	3.2
Liberia	1974	432,871	82.9	8.3	6.8	1.9	1.3
Mali	1976	2,119,647	91.0	8.0	0.7	0.2	0.5
Nigeria	1967	24,073,923	86.2	12.9	0.8	0.0 <sup>1/</sup>	0.8
Senegal +	1976	1,395,151	37.0	54.5	7.2	1.2	2.9
Regional Average			69.7	22.8	6.8	0.7	1.8
<b>East Asia and the Pacific</b>							
China	1982	521,377,730	28.3	34.4	36.5	0.9	4.5
Fiji +	1976	171,300	9.0	38.3	49.3	3.3	8.3
Hong Kong +	1981	1,961,803	7.6	36.8	47.5	8.1	8.8
Indonesia	1978	53,097,095	31.6	58.8	9.1	0.5	3.9
Korea	1980	12,681,981	14.8	34.3	41.9	9.1	8.0
Malaysia	1967	2,946,216	27.0	57.4	13.8	1.8	5.0
New Caledonia +	1983	56,409	6.0	52.7	36.6	4.6	5.9
Philippines +	1980	13,599,271	7.8	48.7	27.8	15.7	7.0
Singapore	1974	823,281	40.3	26.8	24.3	8.5	5.3
Taiwan	1983	7,070,000	8.9	37.8	41.7	11.5	8.4
Thailand	1974	13,560,100	12.0	79.0	6.9	2.2	4.1
Tonga +	1976	24,930	0.2	36.0	60.9	2.9	7.3
Regional Average			16.1	45.1	33.0	5.8	6.4

- continued -

APPENDIX TABLE A-1 - continued

Country	Year	Total LF	LO%	LP%	LS%	LH%	Mean Years of Schooling
<b>South Asia</b>							
Bangladesh	1981	23,598,677	62.4	19.9	16.2	1.5	2.4
India	1981	222,517,574	66.6	21.4	8.8	3.2	1.9
Maldives	1977	60,207	76.7	19.2	3.3	0.2	0.9
Pakistan	1975	48,775,000	75.8	18.9	4.3	1.0	1.2
Sri Lanka	1971	3,642,844	23.1	39.3	36.8	0.8	6.2
Regional Average			60.9	23.8	13.9	1.4	2.5
<b>EMENA</b>							
Afghanistan +	1979	3,707,028	72.0	15.4	12.6	0.0	2.1
Algeria	1977	3,425,000	37.0	29.8	24.7	2.1	4.0
Barhain +	1980	70,346	43.9	18.7	30.7	6.8	4.9
Egypt Arab R.	1976	10,265,300	53.2	29.4	12.3	5.1	3.3
Iran	1976	8,924,926	63.5	21.0	12.3	3.2	2.7
Kuwait *	1975	304,582	33.8	35.7	22.3	8.2	4.5
Jordan+	1979	488,969	37.0	23.1	31.7	8.1	5.6
Lebanon *	1970	571,756	29.5	50.4	15.8	4.3	3.9
Morocco	1971	4,041,757	81.9	7.2	10.9	0.0 <sup>1/</sup>	1.2
Qatar *	1970	48,290	66.8	18.5	11.5	3.2	2.5
Syrian Arab R.	1975	1,838,949	33.6	49.2	13.5	3.7	4.1
Tunisia	1975	794,922	73.0	15.4	9.7	1.9	2.2
United Arab E.*	1968	78,071	77.1	12.2	7.7	2.9	2.1
Yemen Arab R.	1981	1,201,600	0.0	91.2	7.3	1.5	4.1
Regional Average			50.2	29.8	15.9	3.6	3.4
<b>Latin America and the Caribbean</b>							
Argentina	1960	7,840,430	7.0	73.6	15.6	3.7	6.2
Barbados	1970	81,903	0.6	23.0	65.3	11.1	8.9
Belize	1970	30,677	8.3	65.9	24.6	1.2	6.9
Bolivia	1976	1,396,245	31.0	37.2	25.8	6.0	6.3
Brazil	1980	43,768,454	24.7	43.2	26.2	5.9	5.6
Chile	1981	3,592,014	4.1	51.0	36.6	8.3	8.1
Colombia	1978	7,660,000	16.3	54.9	24.1	4.7	5.0
Costa Rica	1973	575,313	10.6	69.4	14.9	5.1	6.4
Cuba +	1981	3,404,381	4.2	46.1	37.8	11.9	8.2
Ecuador +	1982	2,216,459	16.2	51.0	24.3	8.5	6.5
Guadeloupe +	1982	103,249	8.7	42.3	43.6	5.3	6.5
Guatemala	1973	1,749,100	51.7	40.8	6.1	1.4	3.0

- continued -

APPENDIX TABLE A-1 - continued

Country	Year	Total LF	LO%	LP%	LS%	LH%	Mean Years of Schooling
<b>Latin America and the Caribbean - continued</b>							
Guyana	1982	472,420	17.6	34.2	42.9	5.3	6.8
Haiti	1982	1,869,409	72.9	18.9	7.5	0.8	1.6
Honduras	1961	553,206	53.3	41.5	4.6	0.7	2.1
Jamaica	1978	936,620	2.6	78.2	19.2	0.0	6.9
Martinique	1982	93,619	2.3	42.8	46.6	8.3	6.0
Mexico	1977	11,248,627	26.9	55.7	12.1	5.2	4.5
Nicaragua	1971	488,415	49.7	40.0	9.3	1.0	4.4
Panama	1970	470,859	34.2	39.0	21.7	5.1	4.6
Paraguay	1972	727,181	10.5	73.4	13.5	2.6	4.3
Peru	1981	4,927,345	13.5	46.9	27.5	12.1	7.0
Trinidad-Tobago+	1980	335,600	3.5	62.1	31.5	2.9	6.6
Uruguay	1975	1,041,000	5.1	63.0	19.6	12.4	6.7
Venezuela	1979	4,104,597	15.9	49.6	28.2	6.3	6.2
Regional Average			19.7	49.8	25.2	5.4	5.8
<b>South Europe</b>							
Greece +	1981	3,569,944	3.9	56.9	27.8	11.3	7.9
Israel +	1983	1,329,070	2.5	26.3	49.1	22.1	11.3
Portugal +	1981	3,457,987	16.3	61.7	16.2	5.8	4.5
Spain	1981	12,918,900	13.5	57.1	19.6	9.7	6.2
Turkey +	1980	13,615,248	16.1	60.7	18.7	4.5	5.1
Yugoslavia +	1981	8,216,554	7.4	52.5	35.9	4.2	5.6
Regional Average			10.0	52.5	27.9	9.6	6.8
<b>East Europe &amp; Non-Market</b>							
Bulgaria +	1975	3,363,979	4.0	67.6	22.6	5.8	8.7
Czechoslovakia +	1980	5,503,413	0.0	37.5	55.6	6.9	11.5
Germany D.R. +	1981	6,187,889	0.2	19.2	63.9	16.7	11.9
Hungary +	1980	3,983,317	0.7	28.2	62.7	8.4	10.4
Poland +	1978	12,745,411	1.3	8.6	84.7	5.5	10.7
Romania	1977	10,793,602	0.0	42.1	53.0	4.9	9.8
Regional Average			1.0	33.9	57.1	8.0	10.5

- continued -

APPENDIX TABLE A-1 - continued

Country	Year	Total LF	LO%	LP%	LS%	LH%	Mean Years of Schooling
<b>Developed Countries</b>							
Australia +	1981	5,155,490	0.7	6.3	89.7	3.3	11.1
Belgium	1970	3,520,186	3.9	<u>2/</u> 45.5	42.5	8.1	8.1
Canada	1981	12,054,165	0.0	13.3	50.8	35.9	11.7
Denmark	1981	1,946,327	0.0	44.2	45.2	10.6	8.6
Finland +	1980	1,817,238	0.0	47.8	44.2	8.0	8.5
France +	1982	20,731,220	0.4	63.4	27.8	8.4	6.2
Germany F.R. +	1982	24,167,000	0.7	12.5	73.3	13.5	10.4
Japan	1979	54,352,000	0.0	39.3	42.7	18.0	9.8
Netherlands The	1975	5,188,139	0.0	33.0	56.1	10.9	9.1
New Zealand	1981	1,316,586	0.0	9.3	59.8	30.9	11.7
Norway +	1980	1,536,826	0.0	2.2	84.4	13.4	11.3
Switzerland +	1980	2,489,142	0.0	25.8	58.6	15.6	11.0
United States	1981	101,852,880	0.0	9.9	54.6	35.6	12.6
Regional Average			0.4	27.1	56.1	16.3	10.0

Source: Appendix C

\* : Non-Census data

+ : Refers to the educational attainment of the male population

1/ No data available to separate them from previous level

2/ Includes "unknown education level"

APPENDIX B

ESTIMATES OF MEAN NUMBER OF YEARS OF SCHOOLING OF THE LABOR FORCE

In order to estimate the mean number of years of schooling of the labor force in each country, the following formula was used:

$$S = [ LP1 * (YRSP/2) + (LP2 * YRSP) + LS1 * ((YRSP + (YRSS/2)) + LS2 * (YRSP + YRSS) + LH * (YRSP + YRSS + YRSH) ] / 100$$

where:

- S = mean number of years of schooling
- LP1 = percentage of the labor force with incomplete primary schooling
- YRSP = number of years of primary level education cycle
- LP2 = percentage of the labor force with complete primary schooling
- LS1 = percentage of the labor force with incomplete secondary schooling
- YRSS = number of years of secondary level education cycle
- LS2 = percentage of the labor force with complete secondary schooling
- LH = percentage of the labor force with complete and incomplete higher level education
- YRSH = number of years of higher level education cycle

assuming that the workers with incomplete primary and secondary education, attended to half of the years of the corresponding level (i.e. primary level = 6 years, for LP1 = 3 years).

EXAMPLE

Applying the above to Cameroon (1976) we have:

- LPO = 61.7% of the labor force
- LP1 = 17.6% of the labor force
- YRSP = 6 years
- LP2 = 14.3% of the labor force
- LS1 = 0.7% of the labor force
- YRSS = 7 years
- LS2 = 5.0% of the labor force
- LH = 0.7% of the labor force
- YRSH = 4 years

Thus, the average years of schooling is:

$$S = [(17.6 * 3) + (14.3 * 6) + (0.7 * 9.5) + (5 * 13) + (0.7 * 17)] / 100$$

S = 2.2 years

APPENDIX TABLE B-1  
THE STRUCTURE OF EDUCATIONAL SYSTEMS

Country	Year	Years of Schooling Cycle			Age of School Entry	Years of Compulsory Schooling
		Primary	Secondary	Higher		
<b>East Africa</b>						
Botswana	1971	7	5	4	6	-
Ethiopia	1978	6	6	4	7	-
Kenya	1980	7	6	4	6	-
Lesotho +	1976	8	5	4	6	7
Malawi +	1977	5	6	4	-	-
Mauritius	1972	6	7	4	5	7
Mozambique +	1980	4	7	4	-	-
Reunion +	1982	5	7	4	6	10
Rwanda +	1978	6	6	4	7	8
Sudan	1974	7	5	4	7	-
Swaziland	1976	7	5	4	6	7
Zambia	1979	7	5	4	-	-
<b>West Africa</b>						
Cameroon	1976	6	7	4	6	6
Ivory Coast	1978	6	7	5	6	-
Liberia	1974	6	6	4	6	11
Mali	1976	6	6	5	6	7
Nigeria	1967	6	7	5	6	6
Senegal +	1976	6	7	4	6	5
<b>East Asia and the Pacific</b>						
China	1982	5	5	5	7	-
Fiji +	1976	8	6	4	-	-
Hong Kong +	1981	6	7	4	6	9
Indonesia	1978	6	6	5	6	5
Korea	1980	6	6	5	6	6
Malaysia	1967	6	7	3	6	6
New Caledonia +	1983	6	7	4	6	-
Philippines	1980	6	4	4	6	-
Singapore	1974	6	6	4	6	-
Taiwan	1983	6	6	4	-	-
Thailand	1974	7	5	4	5	7
Tonga +	1976	6	7	4	5	6

- continued -



APPENDIX TABLE B-1 - continued

Country	Year	Years of Schooling Cycle			Age of School Entry	Years of Compulsory Schooling
		Primary	Secondary	Higher		
<b>South Asia</b>						
Bangladesh	1981	5	7	4	6	5
India	1981	5	6	3	6	5
Maldives	1977	5	6	4	6	-
Pakistan	1975	5	7	3	5	-
Sri Lanka	1971	8	3	3	6	9
<b>MENA</b>						
Algeria	1977	6	7	4	6	9
Afghanistan +	1979	6	6	5	7	8
Barhain +	1980	6	5	5	6	9
Egypt Arab R.	1976	6	6	4	6	6
Iran	1976	6	6	4	6	8
Kuwait	1975	4	8	3	6	8
Jordan +	1979	6	6	4	6	9
Lebanon	1970	5	7	4	5	-
Morocco	1971	5	7	4	7	-
Qatar	1970	6	6	4	5	-
Syrian Arab R.	1975	6	6	4	6	6
Tunisia	1975	6	7	4	6	6
United Arab E.	1968	6	6	3	6	6
Yemen Arab R.	1981	6	6	4	7	-
<b>Latin America and the Caribbean</b>						
Argentina	1960	7	5	4	5	7
Barbados	1970	7	6	5	5	9
Belize	1970	8	4	4	6	8
Bolivia	1976	6	6	3	6	8
Brazil	1980	8	3	5	7	8
Chile	1981	8	4	5	6	8
Colombia	1978	5	6	4.5	7	5
Costa Rica	1973	7	7	5	6	9
Cuba +	1981	6	7	5	6	6
Ecuador +	1982	6	6	4	6	-
Guadeloupe +	1982	5	7	4	6	10
Guatemala	1973	6	6	5	7	6
Guyana	1982	6	6	4	5	8
Haiti	1982	6	6	4	6	6
Honduras	1961	6	5	5	6	6
Jamaica	1978	6	7	4	6	11

- continued -

APPENDIX TABLE B-1 - continued

Country	Year	Years of Schooling Cycle			Age of School Entry	Years of Compulsory Schooling
		Primary	Secondary	Higher		
<b>Latin America and the Caribbean - continued</b>						
Martinique	1982	5	4	4	6	10
Mexico	1977	6	6	5	6	6
Nicaragua	1971	6	6	5	6	6
Panama	1970	6	6	4	6	9
Paraguay	1972	6	6	3	7	6
Peru	1981	6	6	4	6	9
Trinidad-Tobago+	1980	6	6	5	6	7
Uruguay	1975	6	6	4	6	9
Venezuela	1979	6	6	5	7	6
<b>South Europe</b>						
Greece +	1981	6	6	4	6	9
Israel +	1983	8	4	4	5	9
Portugal +	1981	6	5	4	6	6
Spain	1981	5	7	5	6	10
Turkey +	1980	5	6	4	6	5
Yugoslavia +	1981	4	8	4	7	8
<b>East Europe &amp; Non-Market</b>						
Bulgaria +	1975	8	4	4	7	8
Czechoslovakia +	1980	9	4	4	6	9
Germany D.R. +	1981	10	2	4	6	10
Hungary +	1980	8	4	4	6	10
Poland +	1978	8	4	4	7	8
Romania	1977	8	4	5	6	10

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APPENDIX TABLE B-1 - continued

Country	Year	Years of Schooling Cycle			Age of School Entry	Years of Compulsory Schooling
		Primary	Secondary	Higher		
<b>Developed Countries</b>						
Australia +	1981	7	6	4	6	10
Belgium	1970	6	6	4	6	8
Canada	1981	6	6	4	6	9
Denmark	1981	6	6	4	6	9
Finland +	1980	6	6	4	7	9
France +	1982	5	7	5	7	10
Germany F.R.+	1982	4	7	4	6	9
Japan	1979	6	6	4	6	9
Netherlands The	1975	6	6	4	6	10
New Zealand	1981	6	7	3	6	9
Switzerland +	1981	6	7	4	7	9
United States	1981	8	4	4	7	10

Source:

- : Not Available
- + : From Kaneko, 1986.

APPENDIX C

LABOR FORCE EDUCATIONAL ATTAINMENT: DEFINITIONS AND SOURCES

This Appendix describes the definitions and sources used in the estimates of the educational attainment of the labor force in each country. The following symbols have been used to describe the data:

Definitions

- LF : Definition of labor force, age limits, employment status and data coverage.
- LO : Definition of category "without schooling".
- LP : Definition of "primary level" schooling.
- LS : Definition of "secondary level" schooling.
- LH : Definition of "higher level" schooling.
- LT : Treatment of workers with "unknown" educational attainment.
- NOTE: Additional remarks and/or basic source of estimates. Comments on apparent inconsistencies with data from World Bank, World Tables, 1983, Vol. II.

The number of years of each schooling, when not stated otherwise, are from M. Kaneko, "The Educational Composition of the World Population: A Database", Education and Training Series Report No. 25, The World Bank, April 1986; and, UNESCO, Statistical Yearbook, Paris, 1984.

The estimates of the labor force with complete and incomplete pre-university schooling (LP1, LP2, LS1, LS2) when not provided by each country source, were based on M. Kaneko, "The Educational... op.cit.", UNESCO, Statistical...op.cit., and The British Council, Education Profile (country specific). We assumed for these countries, that the proportion of individuals 14 years old and over in the population who do not complete primary and secondary schooling is the same as in the labor force.

Complete detail of definitions in countries taken from Kaneko (with a + next to the name) in his paper.

Data Sources

EAST AFRICA

BOTSWANA

- LF Employed workers 10 years old and over in cash employment and "family agriculture" (non-cash employment).
- LT There are 1,968 workers excluded from the total due to unknown education level.

Central Statistics Office, Report on the Population Census 1971, August 1972, table 15.14, p.149, table 24.

NOTE: According to the census figures 13% of total labor force is in cash employment.

ETHIOPIA

- LF Urban labor force 10 years old and over. It does not specify employment status.
- LO It includes illiterate individuals and people who attended adult literacy programs (4,397 individuals). See Ethiopia Education Sector Survey, 1985, Report No. 4868-ET for a description of the system.
- LP It includes Grades 1 to 6 and Priest or Koranic schooling (16,289 individuals).
- LS It includes Grades 7 to 8 and senior secondary schooling.
- LH It includes post-secondary non-university and university studies.

Central Statistical Office, "Population, Labor Force and Housing Characteristics of Seventeen Major Towns". Results of Manpower and Housing Survey, 1978. In Statistical Bulletin, 27, August 1980, table 6, p.247.

NOTE: Figures based on a sample of the 17 major towns. No more details on the definition of "urban".

KENYA

- LF Employed labor force. Age limits non-specified.
- LP It includes Standards 1 to 8.
- LS It includes Forms 1 to 6.
- LH It includes university studies.

Peter Fallon, The Labor Market in Kenya: Recent Evidence, World Bank, Development Research Department, Discussion Paper DRD156, October 1985, tables 1 and 5, pp. 42 and 45.

LESOTHO +

Kingdom of Lesotho, The Bureau of Statistics, 1976 population Census, Vol. III, tables 10A, p.52, table 11A, p. 73.

MOZAMBIQUE +

Republica Popular de Mocambique, Conselho Coordenador de Recenseamento,  
Recenseamento General da Populacao, Quadro BA.

REUNION +

Institut National de la Statistique et des Etudes Economiques (France),  
Reunion, Resultats du recensement de la population dans les  
departments d'outre-mer 9 mars 1982, For4.

RWANDA +

Republique Rwandaise, Bureau National de Recensement, Vol. I, Effectives de  
la Population, Tableau 10, pp. 313 and 324.

MAURITIUS

LF Employed labor force 12 years old and over.  
LT There are 603 workers excluded from the total due to unknown  
education level.

Central Statistical Office, 1972 Housing and Population Census of  
Mauritius, Vol. V, Ministry of Economic Planning and Development,  
February 1976, table 29, p.106.

SUDAN

LF Employed workers 12 years old and over in Greater Khartoum.  
LO It includes individuals without formal schooling.  
LP It includes individuals with incomplete and complete primary  
schooling.  
LS It includes individuals with incomplete and complete secondary  
schooling.  
LH It includes complete and incomplete post-secondary non-university  
and university studies.  
LT There are 550 workers excluded from the total due to unknown  
education level.

ILO/UNDP, Employment Mission, Growth, Employment and Equity, A  
Comprehensive Strategy for Sudan, table 106, p. 410.

NOTE: Figures based on CESM Household Survey, 1974.

SWAZILAND

LF Employed workers 15 years old and over.  
LO It includes individuals with unknown education level.  
LP It includes from Grade 1 to Standard 6.  
LS It includes from Form 1 to Form 5.  
LH It includes all types of post-secondary education.  
LT It considers employed those workers holding part-time jobs.

Central Statistical Office, Report on the 1976 Swaziland Population Census, Vol. II, Statistical Tables, table 10, pp.17-20.

NOTE: Total LF (108,237) figure differs from World Bank estimates, World...op.cit. (249,845), p.86.

ZAMBIA (1963)

LF Employed and unemployed African males. Age limits non specified.  
LP It includes individuals with 1 to 5 years of school attendance.  
LS It includes individuals with 6 and more years of school attendance.  
LH No data available to separate individuals with higher education from LS.

M.F. McPherson, A Study of Employment in Zambia, World Bank, DRD, RPO 671-06 Employment Models and Projections, 1978, table II.44, p.138a.

NOTE: Based on Second Report of the May/June 1963 Census of Africans, 1964, pp.29, 31, 32.

ZAMBIA (1979)

LF Urban employed and unemployed workers 15 years old and over in the Kabwe region.  
LO Illiterate individuals.  
LP It includes individuals with complete and incomplete primary schooling.  
LS It includes individuals with complete and incomplete secondary schooling.  
LH It includes post-secondary non-university and university studies.

PCC/Ministry of Labour, Report on the Pilot Labour Force Survey of Kabwe Urban, January 1980, table 3.3, p.24.

NOTE: World Bank, World...op.cit., estimates the Zambian labor force in 1979 in 1,999,105. See p.102.

WEST AFRICA

CAMEROON

LF Employed and unemployed labor force 15 years old and over.  
LP It includes "Koranic" schooling. According to World Bank, Education Sector Memorandum, Vol. I, December 1978, Report No.2229-CM, p.5, koranic education is equivalent to primary education.  
LS It includes general and technical secondary schooling.  
LT There are 9,525 workers excluded from the total due to unknown education level.

J.M Atangana-Mebara, J-Y. Martin, Ta Ngoc C., Education, Employ et Salaire au Cameroun, UNESCO, Institut International de Planification de l'Education, Paris, 1984, p.89.

NOTE: Figures based on 1976 population census.

#### IVORY COAST

- LF Abidjan African labor force 15 to 59 years old. No employment status specified. There are 23,028 non-African workers in Abidjan.  
LO It includes individuals without formal schooling.  
LP  
LS It includes lower and upper secondary schooling and all post-secondary studies. LH among population 15 years old and over is less than 1%.  
LH No data available to separate individuals with higher education from LS.  
LT It excludes 1,544 workers from the total due to unknown education level.

Service d'Etudes du Developpement, Ministere des Relations Exterieures, Bilan National de l'Emploi au Cote d'Ivoire, Etudes et Documents No.47, may 1982, table 66, p.137.

NOTE: Based on P.Antoine and C.Herry, "Abidjan: Principaux Resultats Manuels de l'Enquete a passages repetes", ORSTOM, Direction de la Statistique, Abidjan, september 1979, (random sample of 40,000 people).

#### LIBERIA

- LF Employed labor force 10 years old and over.  
LO It includes individuals with no grade completed.

Ministry of Planning and Economic Affairs, &1974 Population and Housing Census of Liberia, Population Characteristics of Major Areas, Liberia and Major Political Divisions, PC-1, Monrovia, Liberia, 1977, table 25, p.130.

#### MALI

- LF Employed labor force 8 years old and over.  
LO It includes individuals without formal schooling.  
LP It includes Grades 1 to 6 (F1) and Grades 7 to 9 (F2).  
LS It includes technical-vocational, teacher training secondary schooling.  
LH It includes post-secondary non-university and university studies.  
LT There are 73,520 workers excluded from the total due to unknown education level.

Direction Nationale de la Statistique et de l'Informatique, Recensement General de la Population, Decembre 1976, Resultats Definitifs, Vol.II, Serie Economique, Ministere du Plan, Bureau Central de Recensement, Republique du Mali, table E-3-4, p.68.



NIGERIA

- LF Labor force 15 to 55 years old. It does not specify employment status.  
LO It includes illiterate individuals and literates without formal schooling (3,269,357 individuals).

Victor P. Diejomaoh, "Nigeria's Human Resources: A Preliminary Assessment". In U.C.Damachi and V.P. Diejomaoh (eds.), Human Resources and African Development, table 4.6, p.40 for educational level of Nigerian labor force. Population and labor force data from World Bank, World...op.cit., p.69.

SENEGAL +

Republique du Senegal, Bureau National du Recensement, Recensement General de la Population d'Avril 1976, Analyse des Resultats Nationaux, Tableau No. 14, p. 28, Tableau No. 15, p. 29.

EAST ASIA AND PACIFIC

CHINA

- LF Employed labor force, 15 years old and over.  
LH It includes only university studies.

State Statistical Bureau, People's Republic of China. Statistical Yearbook of China, 1984, p.102; 10% Sampling Tabulation on the 1982 Population Census of the People's Republic of China, Beijing, October 1983, table 39, pp.383-388.

FIJI +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 38, pp. 998-999.

HONG KONG +

Hong kong, Census and Statistics Department, Hong Kong 1981 Census, Basic Tables, Hong Kong 1982. table 5, p. 12.

INDONESIA

- LF Employed and unemployed labor force 10 years old and over.  
LS It includes complete and incomplete general and technical-vocational secondary schooling.  
LH It includes post-secondary non-university and university studies.

Central Bureau of Statistics, Republic of Indonesia. National Labor Force Sample Survey (SAKERNAS), 1978, Jakarta, 1978.

KOREA (1960)

LF Employed labor force 13 years old and over.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.199-202.

KOREA (1980)

LF Employed labor force 14 years old and over.

National Bureau of Statistics, Economic Planning Board, 1980 Population and Housing Census Report, Vol. 2, 15% Sample Survey, 3-1 Economic Activity, Republic of Korea, December 1982, table 11, pp.490-494.

MALAYSIA

LF Employed labor force 15 years old and over.

LT There are 17,784 workers excluded from the total due to unknown education level.

UNESCO, Education in Malaysia, Vol I, Paris, March 1970, table 1, p.4, table 2, p.6.

NOTE: Figures based on EPU, "The Employment Problem in West Malaysia", July 1969, and Malaysia Socio-Economic Sample Survey of Households, 1967-68, Kuala Lumpur, April 1970.

NEW CALEDONIA +

Institut National de la Statistique et des Etudes Economiques (France), Resultats du Recensement de la Population dans les Territoires d'outre Mer, 15 Avril, 1983, Nouvelle Caledonie, Table RGP84-N.C.-P28, p.178.

PHILIPPINES +

Republic of the Philippines, National Census and Statistics Office, 1980 Census of Population and Housing, Vol 2, National Summary, table 5, pp. 41-42, Manila, 1983.

SINGAPORE

LF Employed labor force 10 years old and over.

LO It includes "non-applicable" without explanation of its content.

LS It includes post-primary, general, technical-vocational, commercial secondary, applied arts certificate and trade certificate.

LH It includes post-secondary non-university and university studies.

Ministry of Labour and National Statistical Commission, Report on the Labour Force Survey of Singapore 1974, table 22, p.42, table 72, p.114, and table 11, p.31.

TAIWAN

- LF Employed workers 15 years old and over.
- LO Illiterate and self-educated individuals. No explanation of later category.
- LS It includes vocational and "normal" schooling (primary teachers).

Directorate-General of Budget, Accounting and Statistics, Yearbook of Labor Statistics, Republic of China, 1984, Executive Yuan, Republic of China, table 8, p.20.

THAILAND (1960)

- LF Employed labor force 15 years old and over.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.249-250.

THAILAND (1974)

- LF Employed labor force. Age limits not specified.
- LT There are 83,800 workers excluded from the total due to unknown education level.

UNESCO, Thailand Education: Towards Equalization and Reform, Paris, October 1976, Annex II/2.

NOTE: Figures based on National Statistical Office, Labor Force Survey, 1974.

TONGA +

Kingdom of Tonga, Census of Population and Housing 1976, Vol 1, Administrative Report and Tables, Table 10, p. 89, Table 11, pp. 90-91.

SOUTH ASIA AND PACIFIC

BANGLADESH

- LF Employed labor force 10 years old and over. It excludes beggars.
- LT Employed workers defined as the individuals who worked during the last 6 months preceding the census date (March 6, 1981).

Bangladesh Bureau of Statistics, Bangladesh Population Census 1981, Analytical Findings and National Tables, Secretary Statistics Division and Director General, August 1984, table P18, p.236.

INDIA (1961)

- LF Employed labor force. No age limits specified.
- LP It includes literate individuals without formal schooling.
- LS It includes middle and matriculation (or higher secondary).
- LH It includes Non-Technical Diploma or Certificate not equal to degree, Technical Diploma or Certificate not equal to degree, graduate and above.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.180-181.

NOTE: Figures based on Census of India 1961, Vol. I, India, Part II-B.

INDIA (1981)

- LF Labor force defined as "main workers". These are individuals who worked for the major part of the year preceding the date of enumeration and whose main activity was an economic activity.
- LO It includes 20,209,728 literates without formal schooling.
- LP It includes primary and middle (upper primary, standards VI-VIII).
- LS It includes lower and upper secondary, intermediate and pre-university.
- LH It includes post-secondary non-university and university studies.

P. Padmanabha, Indian Administrative Service, Census of India 1981, Report and Tables Based on 5% Sample Data, Series-1, INDIA, Part II, Special Tables B-4 Part A, p.10; B-4 Part B, p.14.

MALDIVES

- LF Employed labor force 5 years old and over.
- LH It includes post-secondary non-university and university studies.
- LT There is a 0.1% workers with unknown education level.

National Planning Agency, Government of Maldives, Population and Housing Census 1977, Vol.I, Maldives, 1981, table 34, p. 105.

PAKISTAN

- LF Employed and unemployed workers 10 years old and over.
- LP It includes individuals who completed Grades 5 to 9.
- LS It includes matriculation and intermediate.
- LH It includes degree graduates.

Planning Commission, Government of Pakistan, The Fourth Five Year Plan, 1970-1975, July 1970, pp.112-113.

SRI LANKA

- LF Employed labor force 10 years old and over.
- LP It includes Grades I to V.
- LS It includes Grades VI to X (junior secondary), GCE. "O" examination and GCE "A" examination.

Department of Census and Statistics, Census of Population 1971, Sri Lanka, General Report, table 9.18, p.149.

Series-India, Part II-B, New Delhi.

EMENA

ALGERIA

- LF Employed labor force. Age limits non-specified.
- LS It includes vocational, technical, teacher training secondary schooling.
- LH It includes post-secondary non-university and university studies.
- LT It includes resident Algerians only.

World Bank, Algeria. The Five-Year Development Plan and the Medium-Term Prospects for 1980-84, Report No. 3668-AL, Vol II, table A.17, p.31, table 1.2 Appendix, p. 168.

BAHRAIN +

State of Bahrain, Directorate of Statistics, Bahrain Census of Population and Housing, 1981, Table 56, p. 7.

EGYPT ARAB R.(1960)

- LF Employed and unemployed workers. It does not specify age limits.
- LP It includes literate individuals who do not hold primary education certificate.
- LT There are 19,050 workers excluded from the total due to unknown education level.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.141-146.

NOTE: Figures based on 1960 Census of Population, Vol. II.

EGYPT ARAB R.(1976)

- LF Employed and unemployed workers 6 years old and over. It excludes foreigners.
- LP It includes literate individuals who do not hold primary education certificate (2,593,300).
- LT There are 166,600 workers excluded from the total due to unknown education level.

Bent Hansenm Samir Radwan, Employment Opportunities and Equity in Egypt, International Labor Office (ILO), Geneva, 1982, table 19, p.68.

NOTE: Figures based on CAPMAS population census.

IRAN

- LF Employed labor force 10 years old and over.
- LC It includes 467,396 literate workers without formal schooling.
- LS It includes guidance, technical-vocational, new and old secondary schooling.
- LH It includes post-secondary non-university and university studies.

Statistical Centre of Iran, National Census of Population and Housing,  
November 1976, Total Country, table 19.

NOTE: Figures based on a 5% sample of census data.

KUWAIT

LF Employed and unemployed workers. No age limits specified.  
LS It includes intermediate, secondary and post-secondary schooling.  
LH It includes university graduates.

United Nations, Economic Commission for Western Asia (ECWA), "Levels and Structure of Wages in Selected ECWA Countries and their Effect on Employment and Labor Mobility at the National and Regional Levels", Beirut, May 1980, Appendix, tables 1 and 2.

LEBANON

LF Employed and unemployed workers. No age limits specified.  
LS It includes intermediate, secondary and post-secondary schooling.  
LH It includes university graduates.

United Nations, Economic Commission for Western Asia (ECWA), "Levels and Structure of Wages in Selected ECWA Countries and their Effects on Employment and Labor Mobility at the National and Regional Levels", Beirut, May 1980, Appendix, tables 1 and 2.

MOROCCO

LF Employed and unemployed labor force 5 years old and over.  
LP It includes individuals with 1 to 5 years of primary schooling.  
LS It includes individuals with one or more years of technical-vocational and general secondary schooling and all types of higher education.  
LH No data available to separate individuals with higher education from LS.

Secretariat d'Etat au Plan, Recensement General de la Population et de l'Habitat 1971, Resultats de l'exhaustif, Niveau National, Serie E, Vol.III, August 1976, table 34-AE, p.160.

QATAR

LF It does not specify employment status nor age limits.  
LS It includes general and technical secondary schooling.

A.M. Farrag, "Migration between Arab Countries", table 17, p.99. In International Labor Office (ILO), Manpower and Employment in Arab Countries. Some critical Issues, Geneva, 1975.

NOTE: Figures based on Socknat, "Labor Market Conditions and Prospects in the Gulf States and Saudi Arabia", paper presented in a Seminar in Amman, Jordan, June 1975, p.24.

SYRIAN ARAB R. (1960)

- LF Employed and unemployed arab workers. No age limits specified.
- LS It includes intermediate, secondary and post-secondary schooling.
- LH It includes university graduates.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.243-248.

NOTE: Figures based on 1960 Census of Population.

SYRIAN ARAB R. (1975)

- LF Employed and unemployed workers. No age limits specified.
- LS It includes intermediate, secondary and post-secondary schooling.
- LH It includes university graduates.

United Nations, Economic Commission for Western Asia (ECWA), "Levels and Structure of Wages in Selected ECWA Countries and their Effects on Employment and Labor Mobility at the National and Regional Levels", Beirut, Lebanon, May 1980, Appendix, tables 1 and 2.

TUNISIA

- LF Heads of households data from a sample of 10% of the population census. Not stated they are all in the labor force. No age limits specified.
- LO It includes individuals without formal schooling.
- LP It includes primary schooling and "Kouttab" schooling.
- LS It includes secondary professional, long and "ecole specialisee".
- LH It includes post-secondary non-university and university studies.

Institut National de la Statistique, Ministere du Plan, "Menages et Chefs de Menage", Tableaux et Analyses de Resultats du Sondage au 1/10eme, Recensement General de la Population et des Logements, 1975, Vol.II, chapter X, pp.148-149.

NOTE: The World Bank, World...op.cit., estimates the Tunisian labor force in 1975 in 1,407,608. See, p.92.

UNITED ARAB E.

- LF It does not specify employment status nor age limits.
- LP It includes complete primary schooling.
- LS It includes complete secondary schooling.
- LH It includes all types of post-secondary education.

A.M. Farrag, "Migration Between Arab Countries", table 17, p.99. In, International Labor Office (ILO), Manpower and Employment in Arab Countries. Some Critical Issues, Geneva, 1975.

NOTE: Figures based on Socknat, "Labor Market Conditions and Prospects in the Gulf States and Saudi Arabia", paper presented in a Seminar in Amman, Jordan, June 1975, p. 24.

YEMEN ARAB REPUBLIC

- LF No definition provided. It seems to include only employed workers in the "formal" sector.
- LO No data available to separate individuals without formal schooling from LP.
- LP It includes individuals without formal schooling and persons with post-primary vocational training.
- LS It includes individuals with intermediate secondary, secondary schooling and vocational training.
- LH It includes post-secondary non-university and university studies.

Educational Research and Development Center, Albany U./USAID, Yemen Arab Republic. Education and Human Resources. Sector Assessment, February 1895, table 3.1.

NOTE: Figures based on CPO, Second Five Year Plan of the YAR, 1982-86, Sana'a, 1980.

LATIN AMERICA AND CARIBBEAN

ARGENTINA

- LF Employed and unemployed workers 14 years old and over.
- LS It includes general, pedagogical, commercial, agricultural and industrial secondary schooling.
- LH It includes post-secondary non-university and university studies.

Organization for Economic Cooperation and Development, Ressources Humaines et Developpement en Argentine, Paris, 1967. Figures from 1960 National Population Census, tables III.1, III.19.

BARBADOS

- LF Employed workers. No age limits specified.
- LH It includes post-secondary non-university and university studies.

Barbados Statistical Service, Population Census 1970, Barbados, Preliminary Bulletin, Working Population, Part I, Garrison, St. Michael, September 1972.

BELIZE

- LF Employed workers 14 years old and over.
- LO It includes pre-primary and without formal schooling.
- LP It includes complete and incomplete primary schooling.
- LS It includes complete and incomplete secondary schooling.
- LH It includes degree holders.
- LT There are 443 workers excluded from the total due to unknown education level.



Central Planning Unit, Abstract of Statistics 1976, Belmopan, Belize, August 1978, table 18, p.19.

NOTE: Figures are based on the 1970 population census.

BOLIVIA

LF Labor force 15 years old and over. It does not specify employment status, but it seems to include employed and unemployed workers.  
LH It includes post-secondary non-university and university studies.  
LT There are 33,360 workers excluded from the total due to unknown education level.

UNESCO, Bolivia, &Reparacion de las Desigualdades Rurales y Mejoramiento del Sistema Educativo&, Vol.II, Annex 10, p.98.

NOTE: Figures based on Instituto Nacional de Estadística, Censo Nacional de Poblacion y Vivienda 1976.

BRAZIL (1960)

LF Employed workers. No age limits specified.

Instituto Brasileiro de Estadística, Dados, Vol.I, 1960.

BRAZIL (1980)

LF Employed and unemployed workers 10 years old and over.  
LT There are 28,309 workers excluded from the total due to unknown education level.

Ministerio de Educacao e Cultura, Secretaria Geral, SEPLAN/SEINF, Dados, Brasilia, 1981, table 1.2, p.20.

NOTE: Figures based on IBGE, Tabulacoes do Censo Demografico, Brazil, 1980.

CHILE (1969)

LF Employed and unemployed labor force 12 years old and over.

Instituto Nacional de Estadística, Encuesta Nacional de Empleo, Diciembre 1969.

CHILE (1981)

LF Employed and unemployed labor force 12 years old and over.  
LT There are 81,133 workers excluded from the total due to unknown education level.

Guillermo Briones, La Distribucion de la Educacion en el Modelo de Economia Neo-liberal: 1974-1982, Programa Interdisciplinario de Investigaciones en Educacion (PIIE), July 1983, Santiago, Chile, p.15.

NOTE: Basic data from Instituto Nacional de Estadística, Encuesta Nacional de Empleo, Octubre-Diciembre 1981.

COLOMBIA

LF Employed workers 15 years old and over.

Francois Bourguignon, The Labor Market in Colombia: An Overview of its Evolution Over the Past Three Decades, World Bank, Development Research Department, Discussion Paper No. DRD157, January 1986, Tables 2 and 5, pp. 15 and 29.

NOTE: Figures based on 1951 and 1964 population census. Figures on 1973 and 1978 based on household surveys.

COSTA RICA

LF Employed and unemployed workers 12 years old and over.

Dirección General de Estadística y Censos, Censo de Población 1973, Vol. 2, San Jose, Costa Rica, 1975, table 66, p.494, table 69, p.511.

CUBA +

Republica de Cuba, Oficina Nacional del Censo, Censo de Población y Viviendas de 1981, Vol XVI, Tomo 2, Tabla 38, pp. 150-161.

ECUADOR +

Republica de Ecuador, Instituto Nacional de Estadística y Censos, IV Censo de Población - III de Vivienda, Resultados Anticipados por Muestreo (5%), Cuadro 12, p. 26.

GUADELOUPE +

Institut National de la Statistique et des Etudes Economiques (France), Resultats du recensement de la population dans les departments d'outre-mer 9 mars 1982, For4.

GUATEMALA (1964)

LF Employed workers 10 years old and over.

UNESCO, Guatemala, Education and Development, Descriptive and Statistical Data, Vol.II, EFM/51, Paris, october 1972, tables 203-204/

NOTE: Figures are based on Guatemala 1964 census data.

GUATEMALA (1973)

LF Employed workers 10 years old and over.

UNESCO, Guatemala, Educacion Para el Trabajo, EFM/103, SGNPE/Unidad de Empleo y Poblacion, Paris, November 1979, Annex I/19.

NOTE: Figures are based on Guatemala 1973 census data.

#### GUYANA

- LF Employed and unemployed workers 15 years old and over.
- LO It includes pre-primary education.
- LT There are 4,600 workers excluded from the total due to unknown education level.

Institute National de la Statistique et des Etudes Economiques, Resultats du Recensement de la Population Dans les Departements D'Outre-Mer, 9 Mars 1982, Guyana, May 1983, table PA4, p.100.

NOTE: Total population figures (730,120 table DG2, p.40) are different from World Bank, World Tables 1983, Vol II, p. 38. LF participation rates are also different. The Bank estimates 33.6% and the census publication estimates 65.3%.

#### HAITI

- LF Employed labor force 10 years old and over.
- LS It includes technical, vocational secondary schooling, and teacher training. See, World Bank, Haiti, Education Sector Memorandum, November 1980, Report No.3201-HA, for the structure of the education system.

The Institute for International Research Inc., Haiti, Education and Human Resources. Sector Assessment, draft, The Florida State University, June 1985, table 2.35, p.2-66.

NOTE: Figures based on Haitian Institute of Statistics, Resultats Anticipes du Recensement General, 1984.

#### HONDURAS

- LF Employed and unemployed workers 10 years old and over.
- LS It includes individuals who completed 6 years of secondary school.
- LH It includes individuals who completed 5 years of college.
- LT There are 14,782 workers excluded from the total due to unknown education level.

UNESCO, Honduras, Education in Development. Projects and Reccommendations, Vol. II, Supporting Statistical Data. Past and Present. EFM/43, Paris, December 1971, Annex II/B.4.

NOTE: Figures based on Censo Nacional de Honduras, April, 1961.

JAMAICA

- LF Employed and unemployed workers 14 years old and over.
- LS It includes all levels of post-primary education.
- LH No data available. They are included in post-primary.
- LT There are 2,570 workers excluded from the total due to unknown education level.

National Planning Agency, Economic and Social Survey, Jamaica, 1978, table 15.11, p.15.19.

MARTINIQUE

- LF Employed labor force 15 years old and over.
- LO It includes individuals without formal schooling.
- LP It includes "ecole maternelle" and primary schooling.
- LH It includes post-secondary non-university and university studies.
- LT It excludes 1,227 workers from the total due to unknown education level.

Institute National de la Statistique et des Etudes Economiques, Resultats du Recensement de la Population dans les Departements d'Outre-Mer, 9 mars 1982, Martinique, July 1983, table PA4, p.100.

MEXICO (1970)

- LF Wage earners 15 years old and over only. It excludes selfemployed workers. According to Van Ginneken wage earners represent 60.9% of Mexican Labor force.

M. Carnoy, Can Educational Policy Equalise Income Distribution in Latin America?, International Labor Office (ILO), Saxon House, England, 1979, table 24, pp.84-85.

W. Van Ginneken, Socio-Economic Groups and Income Distribution in Mexico, International Labor Office (ILO), WEP, Croom Helm, London.

NOTE: Carnoy figures based on Secretaria de Industria y Comercio, sample of 2% of National Demographic Census of Mexico.

MEXICO (1977)

- LF Employed head of households. No age limits specified.
- LO It includes individuals without formal schooling.
- LP It includes primary complete and incomplete.
- LS It includes secondary schooling complete and incomplete.
- LH It includes university and post-graduate studies complete and incomplete.
- LT It excludes 90,419 head of households due to unknown education level.

Secretaria de Programacion y Presupuesto (SPP), Encuesta Nacional de Ingresos y Gastos de los Hogares, 1977, Mexico, December 1981, table 1.9, p.55.

NOTE: Figures based on 1977 households survey. National representative sample of 12,000 households from the population census 1970.

NICARAGUA

LF Employed labor force 10 years old and over.  
LH It includes post-secondary non-university and university studies.

Republica de Nicaragua, Censos Nacionales 1971, April 20, 1971, Poblacion, Vol. III, "Carateristicas Economicas", Octubre 1974, table 6.

UNESCO, Republic of Nicaragua. Educational Development-Selected Aspects, Vol. II, "Supporting Documentacion", Paris, April 1972, table 15, p.51.

PANAMA (1960)

LF Employed labor force 10 years old and over. It includes individuals working in the Panama Canal Zone.

LO It includes individuals with less than 4 years of schooling.

OECD, Statistics of the Occupational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.214-218.

NOTE: Figures based on Population Census, 1960.

PANAMA (1970)

LF Employed and unemployed labor force 10 years old and over. It excludes 17,085 new workers (seeking first job).

LO It includes individuals with less than 4 years of schooling.

LT It excludes 391 workers from the total due to of unknown education level.

Direccion de Estadistica y Censos, Censos Nacionales de 1970, VII Censo de Poblacion, Caracteristicas Economicas, Vol. V, table 8, p.161, table 11, p.205.

PARAGUAY

LF Employed labor force 12 years old and over.

LT There are 3,395 workers excluded from the total due to unknown education level.

Direccion General de Estadisticas y Censos, Censo Nacional de Poblacion y Viviendas 1972, Asuncion, July 1975, table 20, pp.296-297.

PERU (1961)

LF Employed and unemployed labor force 15 years old and over.

LH It includes post-secondary non-university and university studies.

OECD, Statistics of the Occupational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.219-221.

PERU (1981)

LF Employed labor force 15 years old and over.  
LH It includes post-secondary non-university and university studies.

Instituto Nacional de Estadística, Censos Nacionales, VIII Censo de Población, III Censo de Vivienda, Muestra Nacional, Lima 1984, table 47, no page number.

NOTE: Figures based on a 25% national sample from census data.

TRINIDAD AND TOBAGO +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1986, Table 38, pp. 971-972.

URUGUAY (1963)

LF Employed and unemployed labor force 10 years old and over.

OECD, Statistics of the Occupational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.256-260.

NOTE: Figures based on preliminary results of the Population Census 1963.

URUGUAY (1975)

LF Employed and unemployed labor force 12 years old and over. It excludes new workers (seeking first job).  
LT It excludes 36,200 workers from the total due to unknown education level.

Dirección General de Estadística y Censos, V Censo de Población y Vivienda Año 1975, Muestra de Anticipación, República Oriental del Uruguay, Ministerio de Economía y Finanzas, table ED-04, p.174.

VENEZUELA

LF Employed labor force 15 years old and over.  
LT There are 1,642 workers excluded from the total due to unknown education level.

Oficina Central de Estadística e Informática, Anuario Estadístico 1979, Vol. VII, Situación Social, Caracas, January 1982, table 471-8, p.63.

EAST EUROPE AND NON-MARKET

BULGARIA +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 38, p. 992.

CZECHOSLOVAKIA +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 38, p. 992.

GERMANY D.R. +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 38, p. 992.

HUNGARY +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 38, p. 993.

POLAND +

United Nations, Statistical Office, Demographic Yearbook 1983, Thirty Fifth Issue, New York, 1985, Table 3C, p. 995-996.

ROMANIA

LF Employed labor force 14 years old and over.

LS It includes vocational, technical, teacher training secondary schooling.

LH It includes post-secondary non-university and university studies.

Directia Centrala de Statistica, Recensamintul Populatii Si Al Locuitorilor Din 5 Ianuarie 1977, Republica Socialista Romania, 1980, Vol. II, pp.600-601.

SOUTH EUROPE

GREECE

LF Employed and unemployed workers 14 years old and over.

National Statistical Service of Greece, 1961, Population Census, 1971  
Population Census, Table 15.3, p. 251.

Republique Hellenique, Office National de Statistique de Grece Resultats de Recensement de la Population et des Habitations, Effectue le 5 Avril 1981, Vol II, Athens, 1984, Table 5, p. 79.

ISRAEL +

State of Israel, Central Bureau of Statistics, 1983 Census of Population and Housing Publications, Selected Results from the Sample Enumeration, Educational Level, Reprint from the supplement to the Monthly Bulletin of Statistics, No. 3, 1985, Table 2, pp. 19-27.

PORTUGAL +

Portugal, Instituto Nacional de Estatística, XII Recenseamento Geral da Populacao - II Recenseamento Geral da Habitacao, 1981, Resultados Definitivos, Table 6.07, pp. 183-184.

SPAIN

- LF Labor force 16 years old and over. It does not specify employment status. It seems to include employed and unemployed workers.  
LO It includes illiterate and individuals without formal schooling.  
LS It includes "bachiller elemental" and "bachiller superior" or equivalent.  
LH It includes professional training, post-secondary non-university and university studies.

Comision Asesora de Investigacion Cientifica y Tecnica, Informe Sociologico sobre Educacion y Cambio Social en Espana 1975-1983, Ministerio de Educacion y Ciencia, Ed. EURAMERICA, Madrid, 1983, tables 115 and 116, p.315

TURKEY +

Turkey, State Institute of Statistics, Census of Population, 12, 10, 1980, Social and Economic Characteristics, Istanbul, 1984, Table 18, pp. 56-57.

YUGOSLAVIA +

Socijalisticka Federativna Republika Jugoslavije, Savezni Zavod za Statistiku, Statisticki Godisnjak Jugoslavije 1984, Godine XXXI, Beograd, 1984, Table 104-11.

DEVELOPED COUNTRIES

AUSTRALIA +

Australia, Australian Bureau of Statistics, 1981 Census of Population and Housing, Australia. Cross-Classified Characteristics of Persons and Dwellings, No. 9, Canberra, 1983, Table 48, p. 86.

BELGIUM

- LF Employed labor force 14 years old and over.  
LO It includes persons with unknown education level.  
LS It includes general, pedagogical and artistic secondary schooling.  
LH It includes post-secondary non-university and university studies.

Institut National de Statistique, Recensement de la Population, 31 Decembre 1970, Vol 10, Bruxelles, 1975, Niveau d'Instruction de la Population, table VII, pp.184-189.



CANADA (1961)

- LF Employed workers 15 years old and over.  
LS It includes complete and incomplete general and technical-vocational secondary schooling.  
LH It includes post-secondary non university and university studies.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp. 19-24.

CANADA (1981)

- LF Employed and unemployed workers 15 years old and over.  
LP It includes individuals with less than Grade 9.  
LS It includes complete and incomplete general and technical-vocational secondary schooling.  
LH It includes post-secondary non university and university studies.

Minister of Supply and Services, Canada, 1981 Census of Canada, Labour Force-industry by Demographic and Educational Characteristics, January 1984, table 4, pp.4-1 to 4-16.

NOTE: The figures are based on a 20% sample of the census data.

DENMARK

- LF Employed workers 15 to 59 years old not currently attending school.  
LP It includes individuals with less than 9th. grade.  
LS It includes individuals with 9th. to 11th. grade of secondary school.  
LH It includes individuals with gymnasium education and above.  
LT There are 403,755 workers excluded from the total due to unknown education level.

Danmarks Statistik, Folke- og Boligtaellingen, 1. januar 1981, L1, Landstabelvaerk, Denmark Statistics Office, Kobenhavn, 1984, table 10, pp.60-65.

FINLAND +

Finland, Tilastokeskus (Central Statistical Office of Finland), Vaesto-ja Asuntolaskenta (Population and Housing Census) 1980, Vol VI A - Koulutus, Koko vaesto (Education, Total Population), Table 1.501, pp. 52-57 Helsinki, 1983.

FRANCE +

France, Institut National de la Statistique et des Etudes Economiques, Recensement General de la Population de 1982, Formation, Sondage au 1/20, France Metropolitaine, Les Collections de l'Insee, 101 D, Tableau 06.

GERMANY F.R. +

Statistisches Bundesam, Statistisches Jahrbuch, 1985, Table 16.1, p. 351.

JAPAN (1960)

- LF Employed labor force 15 years old and over.
- LP It includes individuals without formal schooling and with less than one year of senior high school.
- LS It includes senior high school.
- LH It includes junior college, college and university studies.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.54-59.

JAPAN (1979)

- LF Employed labor force 15 years old and over not currently attending school.
- LP It includes individuals without formal schooling and with less than one year of senior high school.
- LS It includes senior high school.
- LH It includes junior college, college and university studies.
- LT It excludes 362,000 workers currently attending school.

Statistics Bureau, Prime Minister's Office, Japan, Statistical Yearbook, 1982, table 40, p.64.

NETHERLANDS THE (1967)

- LF Employed workers. It does not specify age limits.
- LS It includes "extended elementary".
- LH It includes post-secondary non-university and university studies.

Jan Tinbergen, "Employment and Unemployment in Europe: Lessons of the Past 20 Years". In Shirley Williams, Employment and Unemployment in Europe, sponsored by the European Cultural Foundation, November 1979, table 5, p.57. Labor force figures from World Bank, World...op.cit., p.124.

NETHERLANDS THE (1975)

- LF It does not specify employment status nor age limits. It seems to refer to employed workers.
- LS It includes "extended elementary".
- LH It includes post-secondary non-university and university studies.

Jan Tinbergen, "Employment and Unemployment in Europe: Lessons of the Past 20 Years". In Shirley Williams, Employment and Unemployment in Europe, sponsored by the European Cultural Foundation, November 1979, table 5, p.57. Labor force figures from World Bank, World...op.cit., p.124.

NEW ZEALAND

- LF Employed and unemployed workers 15 years old and over.
- LP It includes individuals without schooling. LO among population 15 years old and over is only 0.1%.
- LS It includes individuals with 3rd to 6th Form.
- LH It includes post-secondary non-university and university studies.
- LT There are 130,896 workers who are still attending an educational institution who were excluded from the total labor force.

Department of Statistics, New Zealand Census of Population and Dwellings, 1981, Vol. 6, Education and Training, Wellington, April 1984, table 15, p.32.

SWITZERLAND +

Switzerland, Burdesamt fur Statistik, Eidgenossische Volkszahlung 1980 Band 10, Schulbildung, erlernter Beruf Bern, 1985 Table 3.36.

UNITED STATES (1950)

- LF Employed labor force. It does not specify age limits.
- LP It includes individuals reporting no school years completed as well as less than 8 years of elementary school.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.103-114.

UNITED STATES (1960)

- LF Employed labor force. It does not specify age limits.
- LP It includes individuals reporting no school years completed as well as less than 8 years of elementary school.

OECD, Statistics of the Occupational and Educational Structure of the Labor Force in 53 Countries, Paris, 1969, pp.103-114.

UNITED STATES (1981)

- LF Employed labor force 16 years old and over.
- LP It includes individuals reporting no school years completed as well as less than 8 years of elementary school.

W. Vance Grant, Leo J. Eiden, Digest of Education Statistics 1982, National Center for Education Statistics, table 159, pp.180-181.

NOTE: Based on data from USA Department of Labor, Bureau of Labor Statistics, Special Labor Force Report, "Educational Attainment of Workers", March 1981.