

educational attainment. The procedure is to use nations as the units of analysis, calculate IQs for nations, categorize nations by race, and assess how far the IQs of nations are related to national scores on mathematics and science. IQs for nations have been obtained from the data presented in the preceding chapters. Where two or more IQs are given for a nation, the median has been taken. The IQ for Latvia has been taken from Lynn and Vanhanen (2002). For multiracial societies, IQs have been calculated by weighting the IQs of the races by their proportions in the population. The IQ for Chile has been calculated from the normative study of 4,213 5-16-year-olds tested with the Progressive Matrices by Marinkovich, Sparosvich, Santana, Game, Gomez, and Marinkovich (2000).

National scores on mathematics and science have been obtained from the International Studies of Achievement in Mathematics and Science. These are a series of studies carried out between the mid-1960s and 1994 in which representative samples of primary and secondary school students from a number of countries have been given tests of mathematics and science. Some results are available for a total of 52 countries but not all countries participated in all the studies, so there are quite a lot of missing data. Five data sets of national scores on mathematics and science have been used here and are given in Table 13.2. Column 1 gives the nations categorized by race. Column 2 gives the nations' IQs. Column 3 gives the data from the first two International Studies of Achievement in Mathematics and Science Scores carried out between the mid-1960s and 1986 and combined by Hanushek and Kimko (2000) to give a single score for each nation set on a mean of 50 and standard deviation of 10. Columns 4, 5, 6, and 7 give, respectively, results for 10- and 14-year-olds in mathematics and science in the Third International Mathematics and Science Study, carried out in 1994. The data for these are given by Beaton, Mullis, Martin, Gonzales, Kelly, and Smith (1996) and Beaton, Martin, Mullis, Gonzales, Smith, and Kelly (1996).

The nations are categorized by the racial compositions of their populations. The first row for each race gives its median IQ and its median

Table 13.2. National IQs and Attainments in Math and Science

Nations	IQ	Math & Science 1964-86	Math 1994 Age 10	Math 1994 Age 14	Science 1994 Age 10	Science 1994 Age 14
East Asia	105	56.60	604	606	561	568
China	103	59.28	-	-	-	-
Hong Kong	107	56.93	587	588	533	522
Japan	105	60.65	597	605	574	571
Singapore	103	56.51	625	643	547	607
South Korea	109	56.21	611	607	597	565
Taiwan	105	56.28	-	-	-	-
Europe	98	52.84	545	530	549	532
Australia	98	48.13	546	530	562	545
Austria	100	.	559	539	565	558
Belgium	99	53.25	-	-	546	511

Britain	100	53.98	513	506	551	552
Bulgaria	93	59.28	-	-	-	565
Canada	99	47.57	532	527	549	531
Czech Rep	98	-	567	564	557	574
Denmark	98	53.48	-	-	-	478
Finland	99	48.76	-	-	-	-
France	98	54.15	-	-	538	498
Germany	98	59.03	-	-	-	531
Greece	92	-	492	484	-	497
Hungary	98	53.85	548	537	532	554
Iceland	101	-	474	487	505	494
Ireland	93	47.59	550	527	539	538
Italy	102	44.59	-	-	-	-
Latvia	97	-	525	493	512	485
Lithuania	90	-	-	477	-	476
Netherlands	101	56.84	577	541	557	560
New Zealand	99	52.44	499	508	531	525
Norway	100	49.60	502	503	530	527
Portugal	95	50.28	475	454	480	480
Romania	94	-	-	-	-	486
Russia	97	-	-	-	-	538
Spain	98	49.40	-	-	487	517
Slovakia	96	-	547	544	-	-
Slovenia	96	-	552	541	546	560
Sweden	100	47.41	-	-	-	535
Switzerland	101	57.17	-	545	-	-
United States	98	43.43	545	500	-	534
South America	86	30.10	-	385	-	411
Brazil	86	33.91	-	-	-	-
Chile	89	26.30	-	-	-	-
Colombia	84	-	-	385	-	411
South & SE Asia	86	39.83	490	474	473	470
Cyprus	85	-	502	474	475	463
India	82	21.63	-	-	-	-
Iran	84	20.75	429	428	416	470
Israel	95	51.29	531	522	505	524
Jordan	84	39.38	-	-	-	-
Kuwait	86		400	392	401	430
Philippines	86	34.35	-	-	-	-
Thailand	91	39.83	490	522	473	525

Turkey	90	41.52	-	-	-	-
Africa	69	32.00	354	326	-	326
Mozambique	64	24.26	-	-	-	-
Nigeria	69	34.15	-	-	-	-
South Africa	72	-	354	326	-	326
Swaziland	68	32.00				
Correlations with IQ	-	0.81	0.85	0.89	0.81	0.82

educational attainment. Shown first are the six East Asian counties (China, Hong Kong, Japan, Singapore, South Korea, and Taiwan). These obtain the highest IQ (105) and have the highest scores in all five measures of achievement in mathematics and science. Shown next are the 30 European countries. These include the nations outside Europe but populated largely by European peoples including Australia, New Zealand, and the United States. These have the second highest IQ (98) and the second highest scores in mathematics and science. Shown third are the three multiracial countries of South America (Brazil, Chile, and Columbia). They have a median IQ of 86. Data for their scores in mathematics and science are well below those of the European nations. Shown fourth are the nine countries of South and Southeast Asia. Their IQ of 86 is the same as that of the South American countries. Their scores in mathematics and science are slightly higher than in the South American countries but the results for these are very limited. The scores of the South and Southeast Asian countries in mathematics and science are much below those of the European nations. Shown fifth are the four countries of sub-Saharan Africa (the figure for Swaziland is taken from Baker and Jones, 1993). They have the lowest IQ (69) and the lowest scores in mathematics and science.

The bottom row gives the correlations between national IQs and the scores on educational attainment. The correlations range between 0.81 and 0.89 and are all statistically significant at the 1 percent level. These correlations are reduced from their true values by measurement error. In fact the average of the inter-correlations between the five measures of educational attainment is 0.78 and is lower than the average of the correlations (0.83) between the IQs and the five measures of educational attainment. Correction for the unreliability of these measures (correction for attenuation) gives a true correlation of 1.0 between national IQs and national educational attainment. This validates the national IQs and shows that they measure important cognitive abilities and not simply the ability to do intelligence tests.

To provide an estimate of the magnitude of the race differences in mathematics and science as compared with the differences in intelligence, the race differences in IQs and in mathematics and science given in column 3 can be expressed in standard deviation units (*ds*). These comparisons are given in Table 13.3. The IQs and scores in mathematics and science of Europeans are used as the standard against which the *d* scores of the other races are compared. It will be seen that for all comparisons the race differences in educational attainment are greater than the differences in intelligence. Thus, the East Asians have a 0.33d (5 IQ points) advantage over the Europeans in intelligence but a greater advantage of 0.44 in educational attainment. This could be because their schools are more efficient, as I have argued in the case of Japan (Lynn, 1988). For instance, the school year in Japan is 240 days as compared with 180 days in Britain and the United States and 155 days in France. Schools in East Asia are typically more orderly and have fewer discipline problems than those in European countries, so East Asian school students are able to learn more. It may be that East Asian school students have a