National IQs updated for 41 Nations

Richard Lynn*
University of Ulster, Coleraine, Northern Ireland

Average IQs for 113 countries have been presented in Lynn & Vanhanen (2006): *IQ and Global Inequality*. Augusta (GA): Washington Summit. In the current paper this compilation is extended and updated. New national IQs are presented for 25 countries and revised national IQs for 16 countries. Numerous cultural, biological, economic, political and medical correlates of country-level intelligence have been demonstrated in previous studies. It is recommended that the new and updated IQs presented in this paper should be used as the best estimates of the average IQs for these countries by scholars investigating these correlates.

Key Words: National IQs.

Measured national IQs were presented for 81 nations by Lynn & Vanhanen (2002, p.89). These national IQs were measured from samples given a variety of intelligence tests and were calculated on a scale in which the average British IQ is set at 100 with a within-country standard deviation of 15. Average IQs of all other nations were calculated in relation to this standard. This has become known as the "Greenwich IQ" metric, analogous to lines of longitude that are calibrated in relation to zero passing through Greenwich (a suburb of London). It was shown that these national IQs were correlated at 0.73 with per capita income measured as real GDP (Gross Domestic Product per capita, 1998). It was argued from this result that national IQs explained 53 per cent of the variance in per capita income, and therefore that it provided a major contribution to a long standing problem in development economics summarized by Landes (1998) as "Why some are so rich and some are so poor". The solution proposed to this question was that some are so rich because they have higher average IQs than those who are so poor.

The relation between national IQs and per capita income was extended by estimating IQs for a further 104

* E-mail address: Lynnr540@aol.com

nations, giving a total of 185 nations, comprising all the nations in the world with populations over 50,000. The estimated IQs were obtained from the measured IQs of neighbouring countries with culturally and racially similar populations. For example, there was no measured IQ for Pakistan, but there was a measured IQ (81) for India. It was assumed that the IQ in Pakistan would be approximately the same as in India, and hence Pakistan was assigned an IQ of 81. Using these estimated IQs, the correlation between national IQs and per capita income measured as real GDP (Gross Domestic Product per capita, 1998) for 185 nations was 0.62. The lower correlation obtained with the 185 nations than with the 81 nations (0.73) suggests some degree of inaccuracy in the estimated IQs.

This analysis was extended in a second study (Lynn & Vanhanen, 2006) in which measured IQs were given for 113 nations and estimated IQs for a further 79 nations, giving a total of 192 nations, comprising all the nations in the world with populations over 40,000. It was shown that for the 113 nations for which there were measured IQs, the correlation of national IQs with per capita income measured as GNI (Gross National Income at Purchasing Power Parity, 2002) was 0.68. For 189 nations the correlation of national IQs with per capita income measured as GDP (Gross Domestic Product per capita, 2000) was 0.64. Once again, the correlation of measured national IQs with per capita income (0.68) is slightly higher than the correlation using estimated national IQs (0.64), suggesting some degree of inaccuracy in the estimated IQs.

These national IQs have evoked both interest and criticism. Sceptics have dismissed them as "highly deficient" (Volken, 2003, p.411), "virtually meaningless" (Barnett & Williams, 2004, p.392), "technically inadequate and meaningless" (Hunt & Sternberg (2006, pp. 133,136). For others, the calculation of national IQs has opened up a new field in which intelligence has explanatory power for the problem of national differences in economic development and for a wide range of social, demographic and epidemiological phenomena. The calculations of national IQs and their correlates have been described by Rindermann & Ceci (2009, p. 551) as "a new development in

the study of cognitive ability: following a century of conceptual and psychometric development in which individual and group (socioeconomic, age, and ethnic) differences were examined, researchers have turned their attention to national and international differences in cognitive competence. The goal is to use cognitive differences to understand and predict national differences in a variety of outcomes: societal development, rate of democratization, population health, productivity, gross domestic product (GDP), and wage inequality".

A number of investigators have reported significant correlates of national IQs. Lynn & Vanhanen's claim that national IQs are correlated with per capita income at 0.73 has been refined by Meisenberg (2004), who has shown that the use of log GDP averaged for 1975-2003 increases the correlation based on the original 81 nations from 0.73 to 0.82. This correlation has been confirmed for 185 countries (r = .65) by Whetzell & McDaniel (2006), and for 152 countries (r = .76) by Morse (2008). Others have reported that Lynn & Vanhanen's national IQs are significantly correlated with rates of infant mortality (Kanazawa, 2006), life expectancy (126 countries, r = 0.75; Kanazawa, 2006), total fertility rate (170 countries, r = -.83; Meisenberg, 2009), the incidence of HIV (-0.48, Rindermann & Meisenberg, 2009), the incidence of homicide,113 countries, r= -0.25 (Rushton & Templer, 2009), skin color (129 countries, r=0.92 (Templer & Arikawa, 2006), and numerous other phenomena.

Perhaps the most significant observation is a very high correlation of national IQ with school achievement in science, mathematics and reading (r=.90; Lynn et al., 2007; Lynn & Meisenberg, 2010). The data for school achievement are from international assessment programs including the Third International Mathematics and Science Study (TIMSS) and the OECD's Program of International Student Assessment (PISA). School achievement as measured by these scholastic achievement tests is related more closely to IQ than to measures of the amount of schooling, such as average years of schooling and school enrolment ratios.

New National IQs

The national IQs given in Lynn & Vanhanen (2006)

need updating in two respects. First, it has proved possible to find measured IQs for a further 25 nations that were previously assigned estimated IQs derived from the measured IQs in neighboring countries. Measured national IQs are preferable to estimated IQs because they are more accurate and consequently give higher correlations with per capita income and other phenomena. These measured IQs for new nations are presented in Table 1.

As in previous studies, IQs are corrected for Flynn effects. These are calculated at 2 IQ points a decade for the Progressive Matrices, except for samples aged 13 years and above tested after 1979, for which no Flynn effect correction is made because the British IQ tested by the Progressive Matrices has not increased since 1979 (Lynn, 2009). For the Goodenough (1926) draw-a-man (DAM) IQ a Flynn effect correction has been made of 0.8 IQ points a decade over the years 1924-1964 because this is the increase given by the U.S. Dept of Health (1970, p.20). For other tests, results have been corrected for Flynn effects calculated at 3 IQ points a decade. IQs based on American norms are reduced by 2 IQ points to convert to Greenwich IQs, because the average IQ is approximately 2 points lower in the United States than in Britain. The table also gives the previously estimated IQs in the column headed Est IQ so that the accuracy of these can be assessed. It will be seen that for most of the nations, the measured IQs are closely similar to the previously estimated IQs. This shows that in most cases estimated IQs were fairly accurate.

The calculation of the IQs in most of the studies listed in Table 1 is straightforward, but the following need explanation.

Costa Rica. This study reports PM (Progressive Matrices) results for three samples of children aged 5/6, 10, and 15 years who scored 15 IQ points lower than Austrian children, giving them an IQ of 86.

Table 1. Measured IQs for 25 new nations

Country	Age	N	Test	Meas IQ	Est IQ	Reference
Armenia	5-10	311	DAM	92	94	Dennis, 1957
Bahrain	19-29	100	PMA	81	83	Khaleefa & Al Gharaibeh, 2002
Bangladesh	67	672	MMSE	81	82	Lynn, 2007a
Bosnia-Herzogovina	12-16	605	SPM	94	90	Djapo & Lynn, 2010
Botswana	17-20	140	SPM	71	70	Lynn, 2010b
Costa Rica	5-16	231	PM	86	89	Rindermann & Pieber, 2010
Eritrea	4-7	148	CPM	85	68	Wolff et al., 1995
Eritrea	11	152	SPM	66	68	Wolff & Fesseda, 1999
Gambia	17	579	CPM	64	66	Jukes et al., 2006
Ivory Coast	67	7-14	Piagetian	71	69	Dasen & Ngini, 1979
Libya	6-11	600	CPM	86	83	Lynn et al., 2008a
Libya	8-17	1600	SPM	78	83	Al-Shahomee & Lynn, 2010
Libya	6-16	870	WISC-R	85	83	Lynn et al., 2008b
Malawi	7-14	268	CPM	60	69	Van der Vijver, 2009
Mali	9-12	746	CPM	74	69	Fontaine, 1963
Mali	adults	972	SPM	67	69	Fontaine, 1963
Mali	8-85	413	CPM	64	69	Bellis et al., 1988

Country	Age	N	Test	Meas IQ	Est IQ	Reference
Mongolia	5-14	4694	SPM	100	101	Lynn, 2007b
Morocco	adults	202	SPM	84	83	Diaz et al., 2010
Namibia	7-12	116	CPM	72	70	Veii & Everatt, 2005
Netherlands Antillies	9-11	97	CPM	87	-	van de Vijfeijken et al., 1997
Oman	5-11	1042	CPM	87	83	Khaleefa et al., 2010
Oman	9-18	5139	SPM	82	83	Abdel-Khalek & Lynn, 2008
Palestine	6-16	639	WISC-R	86	-	Lieblich & Kugelmas, 1981
Rwanda	5-17	148	Piagetian	76	70	Laurendeau-Bendavid, 1977
Saudi Arabia	8-14	3967	SPM	80	84	Abu-Hatab et al., 1977
Saudi Arabia	8-24	4659	SPM	78	84	Abdel-Khalek & Lynn, 2009
Senegal	7-14	559	DAM	67	66	Bardet et al., 1960
Senegal	5-12	58	KABC	74	66	Boivin, 2002
Tibet	12-17	80	SPM	92	-	Lynn, 2008
Tunisia	20	509	SPM	84	83	Abdel-Khalek & Raven, 2008
Ukraine	14-17	132	SPM	95	97	Prozorovskaya et al., 2010
United Arab Emirates	6-11	4496	CPM	83	84	Khaleefa & Lynn, 2008c

Gambia. Jukes et al. (2006) give data for the CPM for a sample of 579 17 year olds. The mean raw score was 9. This is at the 5th percentile of British 6 year olds on the 1982 British standardization (Raven, Court & Raven, 1995, p.56). The sample is credited with an IQ of 64.

Ivory Coast. Dasen & Ngini (1979) report results of 4 samples of 7-14 year old Baoulé children given Piagetian tests of conservation of quantity, class, and horizontality (n=67). Piagetian tests are categorized as measures of fluid intelligence in Carroll's (1993, p. 626) taxonomy of abilities and a number of studies have found that the ability to understand the concepts in Piagetian tasks is moderately correlated with IQs measured by standard intelligence tests. Jensen (1980, p.674) summarizes 14 studies reporting these correlations, which average 0.49. The Ivory Coast children lagged behind European children by between 1 and 7 years. Their IQs can be calculated from their mental ages using Stern's original method (mental age divided by chronological age x 100 = IQ). This gives IQs for the 4 samples of 75, 75, 87, and 46, averaged to 71.

Malawi. Van der Vijver (2009) reports results for the Ab scale of the CPM. The scores are scaled up to represent the complete test using the table given in the CPM manual (Raven et al., 1995, p.56). The mean score is at the 0.1 percentile on the 2007 British standardization (Raven, 2004, p.58), giving the sample an IQ of 60. (For those who may be puzzled that the norms of the 2007 standardization can be reported in the 2004 test manual, the reference is correct).

Mali. There are three studies for Mali. Bellis et al. (1988) have reported results for the CPM for a sample of 413 aged 8-85 years. There were 4 age groups: (1) 8-13, n= 107, mean age = 10.5, mean score was 12.5. This is at about the first percentile of British (1984) and American (1986) norms, so the sample is credited with an IQ of 64. (2) 14-22, n= 107, mean age = 18, mean score was 13.5. This is below the first percentile of British (1984) and American (1986) norms, so the sample is credited with an IQ of 64. (3) 23-39, n= 108, mean age = 30, mean score was 13.5. This is below the first percentile of British (1984) and American (1986) norms, so the sample is credited with an IQ of 64. (4) 40-85, n= 858, mean age = 62, mean score was 11. This is below the first percentile of British (1984) and American (1986) norms, so the sample is credited with an IQ of 64. The other two

studies give IQs of 74 and 67. The three results are averaged to give an IQ of 68.

Morocco. Lynn & Vanhanen (2006, p. 305) give an IQ of 84 for Morocco as the median of five studies of the IQs of Moroccan immigrants in the Netherlands. Immigrants are not necessarily representative of the population of the country from which they emigrated, so we report here a study of 202 adults in the Moroccan cities of Casablanca, Tangier, Marrakesh and Meknez, given the Progressive Matrices by (Diaz, 2010; Diaz et al., 2009). The Moroccan sample of men and women combined obtained an American IQ of 85. To equate this to a white British IQ, 2 IQ points need to be deducted. This brings the Moroccan IQ to 83.

This study gave the Progressive Matrices to a Spanish sample (n=258) in Valencia.The Spanish sample of men and women combined obtained an American IQ of 100. 2 IQ points need to be deducted to equate this to a white British IQ, bringing it down to 98. This is the same as the IQ for Spain given by Lynn & Vanhanen (2006, p. 308) as the median of three studies.

Rwanda. Laurendeau-Bendavid (1977) has reported a study comparing 148 children at school in Rwanda with 139 European children in Montreal on five Piagetian tests. Results are given for the ages at which 50 per cent of children in the two groups attained the last stage on the tasks. The average of these ages for the five tasks was 9.7 for the European children and 12.8 for the Rwandan children. Thus, Rwandan children aged 12.8 have the mental age of European children aged 9.7. Using Stern's original method for calculating the IQ (mental age divided by chronological age x 100), the IQ of the Rwandan children can be estimated as 76.

Senegal. Data are reported by Boivin (2002) for the Kaufman ABC for a sample of 58 children aged 5-12, of whom 29 had had cerebral malaria and 29 controls without a history of cerebral malaria. According to Muntendam et al. (1996), cerebral malaria has no adverse effect on intelligence, so the two samples have been combined. The sample obtained a mean IQ of 85. The test was standardized in the US about 1981. Deduct 6 IQ points for a 20 year Flynn effect increase in the US, and 2 IQ points to equate to a British mean of 100 gives an IQ of 77.

Table 2. Revised National IQs.

Country	Age	N	Test	IQ	Reference
Croatia	13-16	299	SPM	90	Sorokin, 1954
Croatia	Adults	525	CF	104	Buj, 1981
Croatia	7-14	999	SPM	99	Lugomer & Zarevski, 1985
Croatia: median				*99*	
Egypt	6–10	206	DAM	84	Dennis, 1957
Egypt	12–15	111	CCF	81	Sadek, 1972
Egypt	6–12	129	SPM	83	Abdel-Khalek, 1988
Egypt: median				*83*	
Equatorial Guinea				64	See below
Ethiopia	5-14	188	CPM	64	Aboud et al., 1991
Ethiopia	15	250	SPM	68	Kaniel & Fisherman, 1991
Ethiopia	14-16	46	SPM	69	Kozulin, 1998
Ethiopia	6-7	29	CPM	86	Tzuriel & Kaufman, 1999
Ethiopia	7-11	108	CPM	70	Ayalew, 2005
Ethiopia: median				*69*	
Hungary	Adults	260	CF	98	Buj, 1981

(Table 2 continued)

Country	Age	N	Test	IQ	Reference
Hungary	18	7588	SPM+	95	Dobrean et al., 2008
Hungary: median				*97*	
Italy	11–16	2432	SPM	103	Tesi & Young, 1962
Italy	6-11	700	CPM	95	Galeazzi et al., 1979
Italy	Adults	1380	CF	102	Buj, 1981
Italy	6-11	476	CPM	103	Prunetti, 1985
Italy	6-11	459	CPM	99	Prunetti et al., 1996
Italy	18	5370	CCF	90	Pace & Sprini, 1998
Italy: weighted mean				*97*	
Jordan	6-12	210	KABC	84	El-Mneizel, 1987
Jordan	11-40	*2542*	APM	86	Lynn & Abdel-Khalek, 2009
Jordan: median				*85*	
Kuwait	6–15	6529	SPM	86	Abdel-Khalek & Lynn, 2006
Kuwait	7–17	8410	SPM	87	Abdel-Khalek & Raven, 2008
Kuwait: median				*87*	
Poland	Adults	15643	SPM	98	Wysocki & Cankardas, 1957
Poland	Adults	835	CF	106	Buj, 1981
Poland	6–15	4006	SPM	92	Jaworowska & Szustrowa, 1991

(Table 2 continued)

Country	Age	N	Test	IQ	Reference
Poland	15-79	660	SPM	92	Raven et al., 2000
Poland	5-10	756	CPM	102	Raven, 2008
Poland	18	395	SPM+	90	Dobrean et al., 2008
Poland: median				*95*	
Qatar	10–13	273	SPM	78	Bart et al., 1987
Qatar	6–11	1135	SPM	88	Khaleefa & Lynn, 2008a
Qatar: median				*83*	
Romania	6–10	300	CPM	94	Zahirnic et al., 1974
Romania	7-18	1310	SPM+	88	Dobrean et al., 2008
Romania: median				*91*	
Serbia	15	76	CPM	89	Moyles & Wolins, 1971
Serbia	adults	608	SPM	88	Rushton & Čvorović, 2009
Serbia:median				*89*	
Sudan	7–16	291	Various	69	Fahmy, 1964
Sudan	6	80	DAM	64	Badri, 1965
Sudan	*Adults*	*77*	*ETMT*	*76*	*Stanczak et al., 2001*
Sudan	*6-9*	*1683*	*CPM*	*81*	*Khatib et al., 2006*
Sudan	*9*	*3185*	*SPM*	*79*	*Irwing et al., 2008*

(Table 2 continued)

Country	Age	N	Test	IQ	Reference
Sudan	*4-10*	*1345*	*DAM*	*83*	*Khaleefa et al., 2008a*
Sudan	*9-25*	*6202*	*SPM*	*79*	*Khaleefa et al., 2008b*
Sudan	*50*	*801*	*WAIS-R*	*86*	*Khaleefa et al., 2009*
Sudan	*50*	*801*	*WAIS-R*	*84*	*Khaleefa et al., 2009*
Sudan	9-18	1006	SPM	67	Khaleefa & Lynn, 2010
Sudan: median				*77*	
Syria	7	241	CPM	83	Guthke & Al-Zoubi, 1987
Syria	7-18	3489	CPM	75	Khaleefa & Lynn, 2008b
Syria: median				*79*	
Yemen	6–11	1000	CPM	85	Al-Heeti et al., 1997
Yemen	6-11	986	CPM	81	Khaleefa & Lynn, 2008d
Yemen: median				*83*	
Zimbabwe	15	200	SPM	72	Irvine, 1969
Zimbabwe	12–14	204	WISC-R	71	Zindi, 1994
Zimbabwe: median				*72*	

Revised National IQs

There are 16 countries for which the IQs given in Lynn & Vanhanen (2006) need revision because further studies have been identified. Table 2 summarizes the studies for each country, followed by the median or by a single figure.

The explanations of these revisions are as follows.

Egypt. The IQ of the Dennis (1957) study was given as 77 in Lynn & Vanhanen (2006). This is corrected to 84. Two new studies are added, to give a median IQ of 83.

Equatorial Guinea. The Lynn & Vanhanen (2006) IQ of 59 was based on a misreading of the study. An estimated IQ of 64 is proposed, based on the IQs of neighboring Cameroon (64) and Congo (64).

Ethiopia. Lynn & Vanhanen (2006) gave an IQ of 64 for Ethiopia based on two samples of Ethiopian Jews who had immigrated to Israel. Table 2 summarizes results for these and three more studies. A further study of Ethiopian Jews in Israel by Tuzuriel & Kaufman (1999) obtained an IQ of 86. There are also two studies of samples in Ethiopia. The first of these by Aboud et al. (1991) reported CPM results for a sample of 162 children aged 5-14 years. The mean age is assumed to be 9.5 years. The mean score was 11.8 and is well below the 5th percentile of the British 1982 standardization sample. Converted to the SPM the score is 10.8. This is below the 1st percentile on the British 1979 SPM standardization sample. The sample is credited with an IQ of 64. A second study of CPM results of indigenous Ethiopian children has been reported by Ayalew (2005) and gives an IQ of 70. The average IQ of the two indigenous samples is 67. The median IQ of 69 of the five studies is proposed as the revised IQ for Ethiopia.

Italy. An 1Q for Italy cannot be taken as the median of the six studies in Table 2 because the first five are derived from samples in the north and center, while the last is derived from a sample in Sicily. There is a 10.4 IQ point difference between the north/center, where the IQ derived as the average of the first five studies is 100.4, and the south represented by the sample from Sicily, where the IQ is 90. The IQ difference between the north/center and the south is along the 41st line of latitude, about mid-way between Rome and Naples, as shown in Lynn (2010a). An IQ for Italy can be calculated by weighting the IQs the north/center and the south by population size of approximately 39 million in the north/center and

approximately 21 million in the south. This gives an IQ of 96.8 for Italy.

Sudan. The people are predominantly North African Caucasoid in central and northern Sudan (Cavalli-Sforza et al., 1994, p.169). These constitute approximately 79 per cent of the population. See http://sudaneseguardian.blogspot.com/2009/05/sudan-population-census-decided-but.html. The people in the south are Negroid and are approximately 21 per cent of the population. There are three studies of the peoples of the south: Fahmy (1964), (Badri, 1965) and Khaleefa & Lynn (2010) for which the median IQ is 69. There are seven studies of the peoples of the north for which the median IQ is 79. An IQ of 77 for the population is estimated by weighting the IQs of the north and south by their percentages in the population.

Conclusion

The new and revised national IQs given in Tables 1 and 2 are generally similar to the estimates given in Lynn & Vanhanen (2006) but are considered to be more accurate. It is recommended that they should be adopted as the best estimates of the average IQs in these countries by those researching the correlates, causes and consequences of the intelligence of nations.

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