

THREE STUDIES OF THE STANDARD PROGRESSIVE MATRICES IN MOROCCO^{1,2}

SALAHELDIN FARAH ATTALLAH BAKHIET

King Saud University, Riyadh, Saudi Arabia

RICHARD LYNN

University of Ulster, Coleraine, Northern Ireland

Summary.—Results are given for three studies of samples tested with the Standard Progressive Matrices (SPM) in Morocco. The first consisted of 85 children (boys, girls; M age = 8.5 yr.) in the town of Kenitra and obtained a British IQ of 74. The second consisted of 202 adults (92 men, 110 women; M age = 26 yr.) in four cities and obtained a British IQ of 81. The third consisted of 1,177 secondary school children (723 boys, 454 girls; ages 12–17 yr.) in a rural area and obtained a British IQ of 73.3. It is proposed that the best estimate of the Moroccan IQ can be obtained as the average of the three results, giving an IQ of 76.

A research program to collect IQs for all nations in the world was initiated by Lynn (1978) and has been extended in a number of subsequent publications summarized in Lynn and Vanhanen (2012). In these studies, national IQs are given in relation to a British mean of 100 and $SD = 15$.

In their most recent compilation of national IQs, Lynn and Vanhanen (2012) gave IQ estimates for six different Moroccan samples, which ranged between 75 and 85 with a median of 84. These studies were all based on Moroccan immigrants in The Netherlands and Spain and are not the most satisfactory samples because immigrants are not necessarily representative of their home country and their IQs may be increased by the better environments of Europe. To provide better estimates, this study describes three studies of the IQ of Moroccans in Morocco.

The first of these studies reported Standard Progressive Matrices (SPM) data for 85 children (boys and girls³) with a mean age of 8.5 yr. in the small town of Kenitra in the northwest of Morocco (Aboussaleh, Ahami, Bonthoux, Marenddaz, & Valdois, 2006). The sample obtained a score of 21, which is at the 17 percentile on the 1979 British standardization and equivalent to an IQ of 86. The British IQ of this age group increased by 4.9 IQ points a decade over the years 1979–2008 (Flynn, 2012, Table A16, p. 211), so 12 IQ points (25 yr.) need to be deducted, giving a Moroccan IQ of 74.

¹Address correspondence to Richard Lynn via e-mail (lynnr540@aol.com).

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³The authors did not report the numbers of girls and boys.

The second study reported Standard Progressive Matrices (SPM) data for a sample of 202 adults (92 men, 110 women; Sellami, Infanzón, Lanzón, Díaz, & Lynn, 2010). The sample had a mean age of 26 yr. ($SD=7.76$) and consisted of administrators, cleaners, waiters, and cooks in university halls of residence in the cities of Casablanca, Marrakech, Meknes, and Tangiers. The sample obtained a mean score of 43.73, which is at the 10th percentile of the 1992 British standardization sample of adults given in Raven, Raven, and Court (2000, p. 81) and is equivalent to an IQ of 81. No adjustment is made for a Flynn effect because there has been no increase in SPM scores in Britain among those aged 13+ yr. from 1979 to 2008 (Lynn, 2009).

The third study consisted of an administration in 2010–2012 of the Standard Progressive Matrices to 1,177 secondary school children ages 12–17 years (723 boys, 454 girls) in the rural commune of Sidi El Kamal in northwestern Morocco published by Sbaibi, Aboussaleh, and Ahmani (2014). The results are shown in Table 1. This gives the means for the sample and British percentiles in the 1979 standardization for the 12- to 15.5-year-olds (Raven, 1981). There are no British norms for 16- to 17-year-olds, but norms for these ages are given for the United States by Raven, Raven, and Court (2000, Table SPM9, p. 82).

The right-hand column gives the British IQ equivalents of the percentiles given in Columns 4 and 5. The American IQ is 2 points lower than the British, so the IQs have been reduced by 2 points to convert to British IQs. The mean of the 12 IQs is 73.3. No adjustment is needed for a possible Flynn effect increase in British norms because there were no gains in the British Standard Progressive Matrices for these age groups during the years 1979–2008 (Flynn, 2012, Table A16, p. 211).

The three studies of samples tested with the Standard Progressive Matrices in Morocco obtained scores that were equivalent to British IQs of 74, 81, and 73.3. These are all lower than the median of 84 obtained in the six studies of Moroccan immigrants in The Netherlands or Spain (Lynn & Vanhanen, 2012) and may be regarded as better estimates of the Moroccan IQ. The third study by Sbaibi, *et al.* (2014) was by far the largest, with a sample to 1,177. However, the sample came from a rural area, and rural samples generally obtain lower IQs than urban samples, so the IQ value of 73.3 is likely to be an underestimate. The authors propose that the best estimate of the Moroccan IQ can be obtained as the average of the three results, giving an IQ of 76.

This result is somewhat lower than the IQs of other North African countries, which were calculated as 82.7 in Egypt, 82.8 in Algeria, 84.6 in Libya, and 84 in Tunisia (Lynn & Vanhanen, 2012). It is also lower than the IQ of 84 for Morocco obtained from immigrants in Spain and The Netherlands, suggesting that the IQs of immigrants give an inflated estimate of the Moroccan IQ.

TABLE 1
STANDARD PROGRESSIVE MATRICES SCORES FOR CHILDREN
IN MOROCCO

Age (yr.)	N	M	Percentile		British IQ
			British	U.S.	
12	38	25.1	3		72
12.5	90	24.8	5		75.5
13	86	24.6	3		72
13.5	76	25.4	4		74
14	94	29.3	5		75.5
14.5	137	30.6	2		69.5
15	154	30.5	6		76.5
15.5	137	32.3	4		74
16	137	30.7		5	73.5
16.5	99	32.5		4	72
17	81	32.4		4	72
17.5	52	34.4		5	73.5

REFERENCES

- ABOUSSALEH, Y., AHAMI, A. O. T., BONTHOUX, F., MARENDDAZ, C., & VALDOIS, S. (2006) Performances cognitives des enfants anémiques âgés de 6 à 11 ans en milieu urbain du Nord-Ouest Marocain [Cognitive performance of anaemic infants aged 6 to 11 years in an urban location in north-west Morocco]. *Journal de Thérapie Comportementale et Cognitive [Journal of Behavioral and Cognitive Therapy]*, 16, 249-254. [in French]
- LYNN, J. R. (2012) *Are we getting smarter?* Cambridge, UK: Cambridge Univer. Press.
- LYNN, R. (1978) Ethnic and racial differences in intelligence: international comparisons. In R. T. Osborne, C. E. Noble, & N. Weyl (Eds.), *Human variation: the biopsychology of age, race, and sex*. New York: Academic Press.
- LYNN, R. (2009) Fluid intelligence but not vocabulary has increased in Britain. *Intelligence*, 37, 249-255.
- LYNN, R., & VANHANEN, T. (2012) *Intelligence: a unifying explanatory construct for the social sciences*. London, UK: Ulster Institute for Social Research.
- RAVEN, J. (1981) *Irish and British standardisations*. Oxford, UK: Oxford Psychologists Press.
- RAVEN, J. C., RAVEN, J. H., & COURT, J. (2000) *Standard progressive matrices*. Oxford, UK: Oxford Psychologists Press.
- SBAIBI, R., ABOUSSALEH, Y., & AHMANI, A. O. T. (2014) Sex differences in means and variance of intelligence among middle school children in the rural commune Sidi El Kamal (North-Western Morocco). *Asian Journal of Scientific Research*, 7, 376-385.
- SELLAMI, K., INFANZÓN, E., LANZÓN, T., DÍAZ, A., & LYNN, R. (2010) Sex differences in means and variance of intelligence: some data from Morocco. *Mankind Quarterly*, 51, 84-92.