

A Study of Intelligence in Tajikistan

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The Standard Progressive Matrices Plus (SPM+) was administered in Tajikistan in 2016 to a sample of 674 13- to 15-year-olds. This is the first study reporting cognitive test results from this country. The mean British IQ of the sample was 88, which is comparable to results of similar studies in other countries of Central Asia. There were virtually no sex differences.

Key words: Tajikistan; Intelligence; Progressive Matrices; sex differences

The compilation of national IQs by Lynn and Vanhanen (2012, p. 19ff) gave measured and estimated IQs for all 199 countries of any size in the world. For 158 countries, these IQs were based on studies performed in the country. For the remaining 41 countries they were estimated from neighboring countries with populations of similar cultural and ethnic background. For example, they had no measured IQ for Tajikistan so an IQ was estimated at 80 as the average of measured IQs of 75 for Kyrgyzstan and 85 for Kazakhstan. These national IQs are calculated on the metric in which the mean IQ of Britain is set at 100 with a standard deviation of 15, and the IQs of other countries are calculated in relation to this standard.

Subsequent research has shown that measured and estimated national IQs are generally reasonably accurate but this has not always been the case. For example, the IQ of 75 for Kyrgyzstan was calculated from scores obtained in the 2012 PISA (Programme for International Student Assessment) study of the performance of 15-year-olds in math, science and reading comprehension. National PISA scores have been found to be correlated at .97 with national IQs

measured by intelligence tests and have therefore been used as a valid measure of national IQ (Coyle & Rindermann, 2013). But a study of the IQ of a sample of school students in Kyrgyzstan calculated from scores obtained on the Standard Progressive Matrices Plus gave a British IQ of 88 (Salahodjaev et al., 2017). In this paper we contribute to this research program by reporting the first study of a measured IQ for Tajikistan.

Method

In 2016 the Standard Progressive Matrices Plus (SPM+) was administered in Tajikistan to a representative sample of 674 middle school children aged 13 through 15 years. The sample was drawn from 5 socially and geographically representative schools from 3 regions, including the capital city of Dushanbe, a regional center, and rural areas. The sample contained 344 boys and 330 girls. The Standard Progressive Matrices is a 60 item non-verbal reasoning test constructed in Britain in the 1930s and has been used in numerous countries. The SPM+ is an updated and more difficult version of the test standardized in Britain in 2008 (Raven, 2008).

The children tested were in the last three grades of middle school. The test was carried out without time limits in the classrooms and the instructions were given in Tajik and Russian languages.

Results

The results are given in Table 1. This shows the ages of the students, the numbers of participants at each age (N), average scores (M) and standard deviations (SD) on the test, and the British-scaled IQ according to the norm table (Table A.1) in Raven (2008). The weighted mean of the three Tajikistan IQs is 87.5, rounded to 88. The mean score for the boys was 31.1 (SD = 7.8), and mean score for the girls was 31.0 (SD = 7.7).

Table 1. *SPM+ scores for Tajikistan school students*

Age	N	M	SD	British IQ
13	213	29.3	7.8	83
14	243	31.9	7.1	91
15	218	31.8	8.1	88

Discussion

There are four points of interest in the results. First, the British IQ of the Tajikistan sample is 88. No correction for a potential "Flynn effect" is required as there is no evidence for any increase of the British IQ in this age group in recent

years (Lynn, 2009; Shayer, Ginsburg & Coe, 2007; Shayer & Ginsburg, 2009). This is substantially higher than Lynn and Vanhanen's (2012) estimate of 80, which was based in part on a PISA-based estimate of 75 for Kyrgyzstan. This suggests that PISA results do not invariably give an accurate assessment of national IQ.

Second, the present estimate of an IQ of 88 for Tajikistan is closely similar to those of neighboring countries in Central Asia. These are the IQ of 86 for the Karakalpakstan region of Uzbekistan reported by Salahodjaev et al. (2016), the IQs of 87.3 for Kazakhstan and 86 for Uzbeks in Kazakhstan reported by Grigoriev and Lynn (2014), and the IQ of 87.1 for Kyrgyzstan reported by Salahodjaev et al. (2017). These five studies are consistent in showing that the mean British-scaled IQ of young people in Central Asia today is in the range between 85 and 88.

Third, the near-identical IQs of boys and girls are consistent with the meta-analysis of sex differences on the Progressive Matrices by Lynn and Irwing (2004) that found no difference in this age group. The result indicates that the major cultural, historic and socio-economic differences between Tajikistan and the Western countries represented in Lynn and Irwing (2004) have virtually no effect on sex differences.

Fourth, the average IQ for Central Asia of around 85-88 presents a problem for the 'cold winters theory' of the evolution of national differences in intelligence advanced by Lynn (1991, 2015), who argues that 'the crucial selection pressure responsible for the evolution of racial differences in intelligence was the temperate and cold environments of the northern hemisphere, imposing greater cognitive demands for survival and acting as selection pressures for greater intelligence.' A number of other scholars using cross-country data have supported this theory by reporting statistically significant associations between average cold winter temperature and national IQ (Kanazawa, 2008; Meisenberg & Woodley, 2013; Rushton, 2000; Templer & Arikawa, 2006). Central Asia has very cold winters averaging between -12 and -17°C in January, compared with -1 to 4°C in Western Europe. This is an anomaly for the cold winters theory. One potential explanation is that high-IQ alleles appeared only in European and North-East Asian (Chinese, Korean and Japanese) populations during the last 10,000 years as proposed by Cochran and Harpending (2009), but failed to appear in Central Asia. A perhaps more likely explanation is that cognitive and economic development in Central Asia have been delayed due to its remote inland location, and that continuing Flynn effects will bring IQs in Central Asia in line with Northern

European and East Asian levels in the near future.

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