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A New Study of Intelligence in Sri Lanka

Bekhzod Omanbayev*, Shakhnoza Tosheva
CENTIL (Colibri) Law Firm, Tashkent, Uzbekistan

Richard Lynn
University of Ulster, UK

*Corresponding author; email: bekhzod.omanbayev@centil.law

The Standard Progressive Matrices Plus (SPM+) was administered in Sri Lanka in 2017 to a sample of 302 school students aged 11 to 16 years. The mean score of the test was 29.2 and is equivalent to a British-scaled IQ of 83. The boys scored significantly higher than the girls.
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In the compilation of IQs for all nations of the world calculated by setting the IQ of Britain at 100 (standard deviation = 15) and the IQs of other countries expressed on this metric, the IQ for Sri Lanka is given as 79 by Lynn and Vanhanen (2012, p. 28). This IQ was calculated from a study by Strauss (1954) of a sample of 46 8-year-olds tested with the CTMM (California Test of Mental Maturity), an American non-verbal reasoning test.

Two additional studies have reported cognitive test results from Sri Lanka. Babapulle and Mendis (1984) administered Raven's Standard Progressive Matrices (SPM) to 351 university entrants in medicine and the life sciences at the universities of Peradeniya and Galle. They report an average score of 52.25, which is at the 75th percentile of 15-year-olds in the British 1979 standardization and the 52nd percentile of 19-year-olds in the 1984-1987 US standardization (Raven, Raven & Court, 1998b). The authors also refer to an unpublished study that found a mean of 45.4 for the general population (p. 143). This is at the 40th percentile of 15-year-olds in Britain in 1979, and the 22nd percentile of 19-year-olds in the US in 1984-1987. A further study, by Haraldsson, Fowler and Periyannanpillai (2000), administered the Coloured Progressive Matrices (CPM)

to a sample of 27 children who could remember events from a previous life and a control group of 27 children who couldn't. The average age of the sample was 7 years, 10 months, and the raw scores were 16.92 and 16.08 for subjects and controls, respectively. The average of these two values is at the 20th percentile of the British 1982 norms for this age, and at the 5th percentile of the British 2007 norms (Raven, 2008b; Raven, Raven & Court, 1998a). This is equivalent to a British-scaled IQ of 87.5 on the 1982 norms, or 75.5 on the 2007 norms. The average of these is a British IQ of 81.5.

It is now more than sixty years since the Strauss (1954) study was carried out and the small size of the sample makes this report less than ideal as an estimate of the IQ in Sri Lanka. Of the other studies, the university entrants of Babapulle and Mendis (1984) are an elite sample while no further information is available about the unpublished study with a general population sample that these authors mention. The Haraldsson, Fowler and Periyannanpillai (2000) study appears to be carefully conducted but is based on very small samples. We therefore report here a recent study of the IQ in Sri Lanka assessed with the Standard Progressive Matrices Plus.

Method

In 2017 the British Standard Progressive Matrices Plus (SPM+) (Raven, 2008a) was administered in Sri Lanka to a sample of 302 middle school children (135 boys and 167 girls) aged 11 through 16 years. Attendance at middle school is compulsory for all children up to the age of 14. The sample was drawn from several geographically and demographically representative middle schools in 5 districts including the capital city of Colombo, smaller cities and rural regions. All the educational institutions from which the sample was selected were chosen as representative of middle schools by teachers who were employed in one of the schools and knew the education system in their region well. The test was carried out without time limits in the classrooms and the instructions were given in English.

Results

The results are presented in Table 1. The columns give the ages of the students (age 11 = 11 to 12, age 12 = 12 to 13, etc.), the numbers of participants (N), the means and standard deviations on the test for each group, and the IQs of Sri Lankan children on the British 2008 standardization norms given by Raven (2008a). The mean of the Sri Lanka IQs calculated by weighting the IQs of the six age groups by the numbers is 83. The mean score for the boys was 30.97 (SD =

4.15) and mean score for the girls was 29.08 (SD = 3.91). The difference is statistically significant (t = 4.04, p<.001).

Table 1. *Standard Progressive Matrices Plus data for Sri Lanka: sample sizes, mean, standard deviation and British-scaled IQ.*

Age	N	Mean ± SD	IQ
11	11	25.5 ± 6.2	85
12	30	30.9 ± 2.6	91
13	20	30.1 ± 1.7	85
14	38	31.0 ± 3.0	88.5
15	101	29.8 ± 3.3	83
16	102	27.7 ± 4.6	78

Discussion

There are three points of interest in the results. First, the British IQ of the Sri Lanka sample is 83. No correction for a potential "Flynn effect" is required as there is no evidence for any recent increase of the British IQ in this age group (Flynn & Shayer, 2018; Lynn, 2009; Shayer, Ginsburg & Coe, 2007; Shayer & Ginsburg, 2009). This is slightly higher than the IQ of 79 for Sri Lanka given by Lynn and Vanhanen (2012) based on the 1954 CTMM (Strauss, 1954) and of 81.5 for the study by Haraldsson, Fowler and Periyannanpillai (2000) based on the Coloured Progressive Matrices. The average of the three studies is a British IQ of 81.2. The average of the three studies weighted by sample size is a British IQ of 82.3 and should probably be regarded as the more satisfactory estimate.

Second, the British IQs of 82.3 of the three samples and of 83 of the present Sri Lanka sample is closely similar to the IQ of 82 for India based on 14 samples given by Lynn and Vanhanen (2012, p. 401). This would be expected given the ethnic similarity of the populations of the two countries and similar levels of economic development.

Third, the significantly higher scores of the boys are inconsistent 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 greater variability of the boys is consistent with numerous studies showing that males have greater variability than females, e.g. Deary et al. (2003).

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