



Chapter 16

Standard Progressive Matrices Norms for Indian Tribal Areas

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Abstract

Data for the Standard Progressive Matrices were collected from representative samples of school attendees in nine tribal areas in India. Altogether, 6199 young people aged 8 to 21 were tested. The norms were considerably lower than both the Indian urban norms collected some years ago and those for the UK. Nevertheless, as usual, the most striking finding is the huge variance in ability within the groups: Poor educational and economic backgrounds do not have the extreme debilitating effect that many would have expected.

Introduction

India is a vast country with a plurality of cultures and many mature languages. The difference between rural and urban cultures has diminished over recent years. Nevertheless, hundreds of tribal areas still exist in many parts of the country, either far remote from the cities or isolated by geographical barriers such as forests. The means of communication are traditional and there is meagre economic development (most live in huts made of mud which are washed away in the rainy seasons), limited ways of earning a livelihood, and lack of education.

Since the cultural, educational, and economic differences are obvious, it is of considerable interest to know how the *Ravens Progressive Matrices* scores of young people living in these areas compare with those of their urban and international counterparts.

The Sample

Data were collected by trained researchers following the procedures laid down in the Manual from a sample of 6,199 school pupils. This was made up of between 650 and 700 students studying in grades 4-12 in each of nine tribal clusters. Altogether, data were collected in 72 schools. While there are hundreds of tribal areas all over the country, accessibility and funding meant that it was necessary to restrict the scope of the study to nine clusters: Thane, Pune, Raigadh, Solapur, Nashik, Dhule, Chandrapur, Surat and Raipur. Testing was carried out between November 2005 and March 2006.





Not all young people attend school, and the participation rates for females were much lower than those for males, especially in the higher grades. To the extent that young people not attending school were not included in the study, the results are less informative than might have been the case.

Most of the pupils' parents had not attended school at all.

Results

The overall smoothed summary norms from the study are presented in Table 16.1 and, broken down by sex in Table 16.2.

As can be seen from Table 16.2, there was a marked gender difference in favour of males which is probably due to differential participation rates.

As can be seen from Tables 16.3 and 16.4, the tribal norms were well below both the Indian urban norms and the 1979 UK norms (which are similar to the Indian urban norms).

To, yet again, investigate whether the differences in scores between the groups might be explained by failure of the test to work, item difficulties were calculated separately for the areas which were socio-economically closest to and furthest from Urban India and plotted in graph form. Both graphs corresponded closely to those obtained in other studies, such as the 1979 British standardisation with which the Indian Tribal norms have been compared in the above tables.



**Table 16.1.** *Standard Progressive Matrices*
Smoothed 2006 Norms for Indian Tribal Areas

Percentile	Age in Years							
	8½	9	9½	10	10½	11	11½	12
95	34	36	37	38	39	39	39	40
90	30	31	33	34	34	35	36	38
75	21	22	23	24	24	25	28	31
50	15	15	16	16	16	17	19	20
25	12	12	12	12	12	12	13	13
10	9	10	10	10	10	10	10	10
5	8	8	8	8	8	8	8	8
<i>n</i>	39	84	206	245	309	245	361	284

Percentile	Age in Years							
	12½	13	13½	14	14½	15	15½	16
95	41	43	44	45	46	47	48	49
90	39	40	41	42	43	44	45	46
75	33	34	35	36	37	37	39	40
50	22	23	24	26	27	29	30	32
25	13	13	14	15	15	17	19	20
10	10	10	10	11	11	12	12	12
5	8	8	9	9	9	10	10	11
<i>n</i>	426	320	463	287	449	341	479	262

Percentile	Age in Years						
	16½	17	17½	18	18½	19	19½
95	49	49	48	48	47	46	46
90	46	46	45	45	45	44	44
75	40	41	41	41	41	40	39
50	33	34	35	35	35	34	33
25	22	24	26	28	29	28	27
10	13	14	15	16	17	16	15
5	11	11	11	12	13	12	12
<i>n</i>	352	243	251	131	144	83	87

Note: Ages are those shown plus up to six months.



Table 16.2. Standard Progressive Matrices Smoothed 2006 Norms for Indian Tribal Data – Female /Male Comparisons

Percentile	Age in Years (Months)																												
	9		9½		10		10½		11		11½		12		13		13½		14		14½		15		15½		16		
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
95	34	39	35	40	35	40	35	40	35	40	37	41	37	41	37	41	37	41	37	41	37	41	37	41	37	41	38	42	
90	28	34	29	35	30	36	31	36	32	37	32	37	32	37	32	37	32	37	32	37	32	37	32	37	32	37	36	39	
75	18	25	19	25	20	26	21	27	23	29	23	29	23	29	23	29	23	29	23	29	23	29	23	29	23	29	26	33	
50	13	17	14	17	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	18	15	17	22		
25	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	14	
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	
5	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	
<i>n</i>	29	55	95	111	127	118	147	162	124	121	145	216	143	141															
Percentile	13		13½		14		14½		15		15½		16		17		17½		18		18½		19		19½		20		
95	41	44	43	44	44	45	45	46	46	47	46	47	47	48	48	49	48	49	48	49	48	49	48	49	48	49	48	49	
90	39	41	40	41	41	42	42	43	43	44	43	44	44	45	45	46	45	46	45	46	45	46	45	46	45	46	45	46	
75	31	37	33	37	34	37	35	39	37	39	37	39	39	41	41	42	41	42	41	42	41	42	41	42	41	42	41	42	
50	20	24	21	25	22	27	24	29	26	30	26	30	28	32	30	32	28	32	30	32	28	32	30	32	28	32	30	32	
25	13	15	14	16	14	16	15	18	16	19	16	19	18	20	19	21	18	20	19	21	18	20	19	21	18	20	19	22	
10	10	11	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	14	
5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	10	
<i>n</i>	180	140	246	217	149	138	221	228	153	188	201	278	118	144															

Note: Ages are those shown plus up to six months.

(continued)

Table 16.2. *Standard Progressive Matrices Smoothed 2006 Norms for Indian Tribal Data – Female /Male Comparisons*
(continued)

Percentile	Age in Years (Months)																							
	16½		17		17½		18		18½		19		19½		19½		19½		19½		19½			
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M		
95	48	50	48	50	48	49	47	48	47	48	47	48	47	48	47	48	47	48	47	48	47	46	46	
90	45	47	45	47	44	46	44	46	44	46	44	46	44	46	44	46	44	46	44	46	44	40	45	
75	41	40	41	41	41	41	41	41	41	41	41	41	40	41	40	41	37	40	35	40	35	40	40	
50	32	34	33	36	34	36	35	36	35	36	35	36	35	37	35	35	34	32	34	32	34	34	34	
25	20	24	21	27	24	28	26	29	27	29	27	29	27	29	28	28	27	27	26	27	27	26	26	
10	12	14	14	15	14	15	16	16	17	18	17	18	17	18	16	17	18	17	16	17	13	16	16	
5	11	11	12	11	12	11	12	12	13	13	12	13	13	13	12	13	12	13	11	14	11	14	14	
<i>n</i>	151	201	101	142	87	164	61	70	64	80	64	80	64	80	35	48	29	58	29	58	29	58	58	

Note: Ages are those shown plus up to six months.

Table 16.3. Standard Progressive Matrices Smoothed 2006 Norms for Indian Tribal Areas In the Context of 1997 Norms for Pune and Mumbai (Bombay), India.

Percentile	Age in Years (Months)											
	8	8½	9	9	9½	10	10	10	10½	11	11	11½
	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR
95	39	34	44	36	37	46	38	39	39	49	39	39
90	36	30	41	31	33	43	34	34	34	46	35	36
75	31	21	34	22	23	37	24	24	24	41	25	28
50	19	15	21	15	16	28	16	16	16	33	17	19
25	13	12	13	12	12	17	12	12	12	22	12	13
10	11	9	11	10	10	12	10	10	10	14	10	10
5	10	8	10	8	8	11	8	8	8	12	8	8
<i>n</i>	100	39	592	84	206	1104	245	309	1189	245	361	361

Percentile	Age in Years (Months)											
	12	12	12½	13	13	13½	14	14	14½	15	15	15
	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR
95	52	40	41	53	43	44	54	45	46	55	47	47
90	49	38	39	51	40	41	52	42	43	53	44	44
75	45	31	33	47	34	35	48	36	37	49	37	37
50	39	20	22	41	23	24	43	26	27	44	29	29
25	30	13	13	33	13	14	36	15	15	38	17	17
10	18	10	10	23	10	10	27	11	11	29	12	12
5	14	8	8	17	8	9	20	9	9	24	10	10
<i>n</i>	1293	284	426	1310	320	463	1344	287	449	1108	341	341

Note: TR ages are those shown plus up to six months.

(continued)

Table 16.3. Standard Progressive Matrices Smoothed 2006 Norms for Indian Tribal Areas In the Context of 1997 Norms for Pune and Mumbai (Bombay), India.
(continued)

Percentile	Age in Years (Months)															
	15½		16		16½		17		17½		18		18½		19	
	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M	TR	P&M
95	48	56	49	56	49	56	49	56	48	55	48	55	47	54	46	53
90	45	54	46	54	46	54	46	54	45	53	45	53	45	53	44	52
75	39	50	40	50	41	50	41	50	41	49	41	49	41	49	40	48
50	30	45	32	45	34	45	34	45	35	44	35	44	35	44	34	43
25	19	39	20	39	24	39	24	39	26	37	26	37	28	37	28	36
10	12	31	12	31	14	31	14	31	15	30	16	30	16	30	17	29
5	10	23	11	26	11	26	11	26	11	25	12	25	12	25	13	24
<i>n</i>	479	1192	262	769	243	769	243	251	287	131	144	83				

Note: TR ages are those shown plus up to six months.



Table 16.4. *Standard Progressive Matrices*
Smoothed 2006 Norms for Indian Tribal Areas in the Context of 1979 British Data

Percentile	Age in Years											
	8	8½	8½	9	9	9½	9½	10	10	10½	10½	
	7(9)	8(3)		8(9)		9(3)		9(9)		10(3)		
	to	to		to		to		to		to		
Percentile	8(2)	8(8)		9(2)		9(8)		10(2)		10(8)		
	UK	UK	TR	UK	TR	UK	TR	UK	TR	UK	TR	
95	40	42	34	44	36	46	37	48	38	49	39	
90	38	40	30	42	31	44	33	46	34	47	34	
75	33	36	21	38	22	41	23	42	24	43	24	
50	25	31	15	33	15	36	16	38	16	39	16	
25	17	22	12	25	12	28	12	32	12	33	12	
10	14	16	9	17	10	19	10	23	10	27	10	
5	12	13	8	14	8	15	8	17	8	22	8	
<i>n</i>	174	153	39	166	84	198	206	172	245	194	309	

Percentile	Age in Years											
	11	11	11½	11½	12	12	12½	12.5	13	13	13½	
	10(9)		11(3)		11(9)		12(3)		12(9)		13(3)	
	to		to		to		to		To		to	
Percentile	11(2)		11(8)		12(2)		12(8)		13(2)		13(8)	
	UK	TR	UK	TR	UK	TR	UK	TR	UK	TR	UK	
95	50	39	51	39	52	40	53	41	54	43	54	
90	48	35	49	36	50	38	51	39	52	40	53	
75	44	25	45	28	46	31	47	33	49	34	49	
50	40	17	41	19	41	20	42	22	43	23	44	
25	34	12	36	13	37	13	38	13	39	13	41	
10	29	10	31	10	31	10	32	10	33	10	35	
5	24	8	25	8	26	8	27	8	28	8	29	
<i>n</i>	187	245	164	361	164	284	174	426	185	320	180	

Note: TR ages are those shown plus up to six months.

(continued)





Table 16.4. *Standard Progressive Matrices*
Smoothed 2006 Norms for Indian Tribal Areas in the Context of 1979 British Data (continued)

Percentile	Age in Years											
	13½	14	14	14½	14½	15	15	15½	15½	16	16½	
	13(9)		14(3)		14(9)		15(3)					
	to		to		to		to					
	14(2)		14(8)		15(2)		15(8)					
	TR	UK	TR	UK	TR	UK	TR	UK	TR	TR	TR	
95	44	55	45	56	46	57	47	57	48	49	49	
90	41	54	42	54	43	55	44	55	45	46	46	
75	35	50	36	50	37	51	37	51	39	40	40	
50	24	45	26	46	27	47	29	47	30	32	33	
25	14	42	15	42	15	42	17	42	19	20	22	
10	10	36	11	36	11	36	12	36	12	12	13	
5	9	30	9	33	9	33	10	33	10	11	11	
<i>n</i>	463	196	287	189	449	191	341	171	479	262	352	

Percentile	Age in Years					
	17	17½	18	18½	19	19½
	TR	TR	TR	TR	TR	TR
95	49	48	48	47	46	46
90	46	45	45	45	44	44
75	41	41	41	41	40	39
50	34	35	35	35	34	33
25	24	26	28	29	28	27
10	14	15	16	17	16	15
5	11	11	12	13	12	12
<i>n</i>	243	251	131	144	83	87

Note: TR ages are those shown plus up to six months.

