

Technical Test Battery (TTB2)

Reliability: South Africans, Indigenous Speakers, Updated 2016

Sample Composition

The sample consisted of respondents who had completed any of the subtests of the Technical Test Battery (TTB2) battery in the period up to June 2015, via GeneSys for Windows. Since not all the respondents completed all the subtests, biographical information is reported separately for the three tests.

Mechanical Reasoning Test: Biographical Composition

Category	Frequency table: Sex			
	Count	Cumulative Count	Percent	Cumulative Percent
M	1301	1301	59,95392	59,9539
F	861	2162	39,67742	99,6313
U	8	2170	0,36866	100,0000
Missing	0	2170	0,00000	100,0000

Category	Frequency table: Education			
	Count	Cumulative Count	Percent	Cumulative Percent
Tertiary	202	202	9,30876	9,3088
< Matric	1133	1335	52,21198	61,5207
Grade 12	546	1881	25,16129	86,6820
Post Graduate	1	1882	0,04608	86,7281
Missing	288	2170	13,27189	100,0000

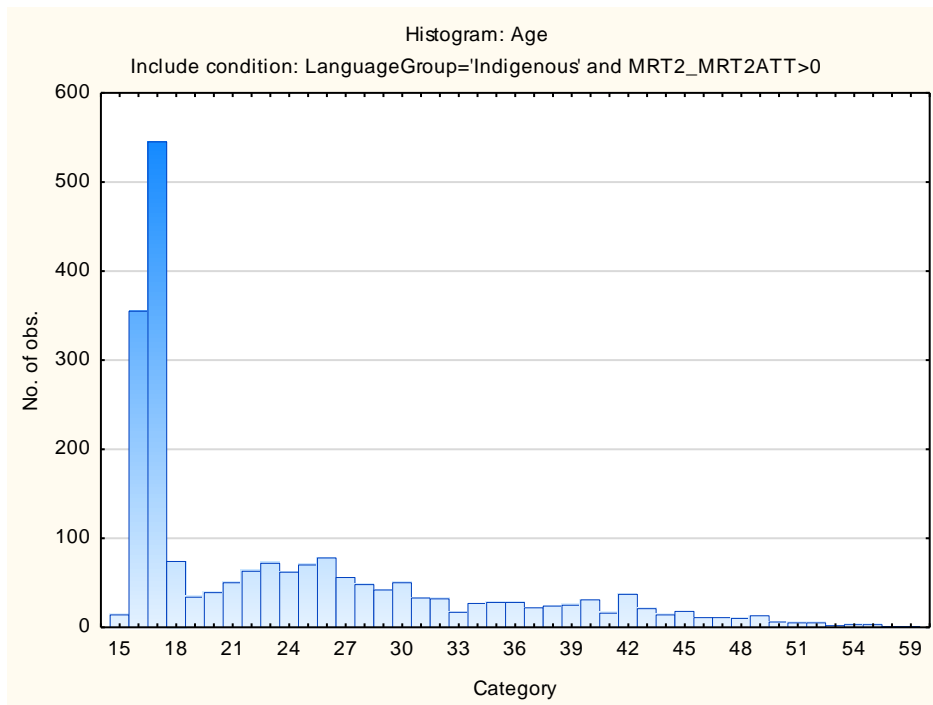
It should be noted that the majority of respondents had not completed matric.

Category	Frequency table: Language			
	Count	Cumulative Count	Percent	Cumulative Percent
isiZulu	688	688	31,70507	31,7051
isiXhosa	288	976	13,27189	44,9770
Sepedi	434	1410	20,00000	64,9770
siSwati	99	1509	4,56221	69,5392
isiNdebele	25	1534	1,15207	70,6912
Setswana	158	1692	7,28111	77,9724
Xitsonga	81	1773	3,73272	81,7051
Sesotho	350	2123	16,12903	97,8341
Tshivenda	47	2170	2,16590	100,0000
Missing	0	2170	0,00000	100,0000

Category	Frequency table: Language Group			
	Count	Cumulative Count	Percent	Cumulative Percent
Indigenous	2170	2170	100,0000	100,0000
Missing	0	2170	0,0000	100,0000

Category	Frequency table: Race			
	Count	Cumulative Count	Percent	Cumulative Percent
African	2154	2154	99,26267	99,2627
Coloured	6	2160	0,27650	99,5392
Asian	6	2166	0,27650	99,8157
Missing	4	2170	0,18433	100,0000

Variable	Descriptive Statistics: Age					
	Mean	Std.Dev	Minimum	Maximum	N	No.cases Missing
Age	24,01908	9,298683	15,00000	59,00000	2096	74



Spatial Reasoning Test: Biographical Composition

Category	Frequency table: Sex			
	Count	Cumulative Count	Percent	Cumulative Percent
M	1002	1002	86,90373	86,9037
F	149	1151	12,92281	99,8265
U	2	1153	0,17346	100,0000
Missing	0	1153	0,00000	100,0000

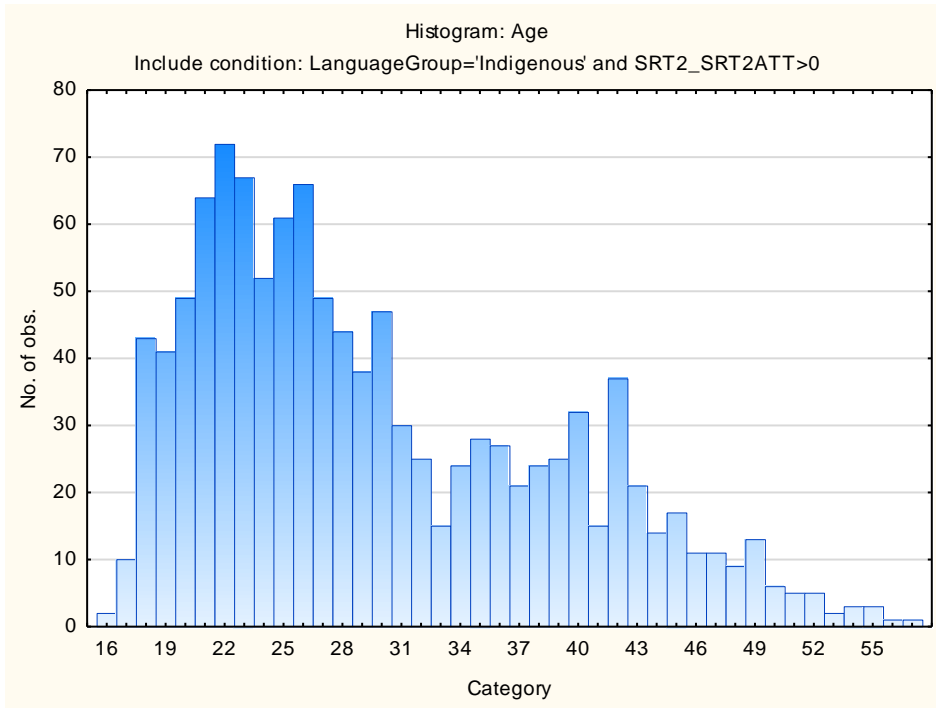
Category	Frequency table: Education			
	Count	Cumulative Count	Percent	Cumulative Percent
Tertiary	219	219	18,99393	18,9939
< Matric	155	374	13,44319	32,4371
Grade 12	516	890	44,75282	77,1899
Missing	263	1153	22,81006	100,0000

Category	Frequency table: Language			
	Count	Cumulative Count	Percent	Cumulative Percent
isiZulu	424	424	36,77363	36,7736
isiXhosa	273	697	23,67736	60,4510
Sepedi	92	789	7,97918	68,4302
siSwati	11	800	0,95403	69,3842
isiNdebele	11	811	0,95403	70,3382
Setswana	43	854	3,72940	74,0676
Xitsonga	33	887	2,86210	76,9297
Sesotho	252	1139	21,85603	98,7858
Tshivenda	14	1153	1,21422	100,0000
Missing	0	1153	0,00000	100,0000

Category	Frequency table: Language Group			
	Count	Cumulative Count	Percent	Cumulative Percent
Indigenous	1153	1153	100,0000	100,0000
Missing	0	1153	0,0000	100,0000

Category	Frequency table: Race			
	Count	Cumulative Count	Percent	Cumulative Percent
African	1141	1141	98,95924	98,9592
Coloured	5	1146	0,43365	99,3929
Asian	4	1150	0,34692	99,7398
Missing	3	1153	0,26019	100,0000

Variable	Descriptive Statistics: Age					
	Mean	Std.Dev	Minimum	Maximum	N	No.cases Missing
Age	29,74071	8,954616	16,00000	59,00000	1130	23



Visual Acuity Test: Biographical Composition

Category	Frequency table: Sex			
	Count	Cumulative Count	Percent	Cumulative Percent
M	42	42	87,50000	87,5000
F	6	48	12,50000	100,0000
Missing	0	48	0,00000	100,0000

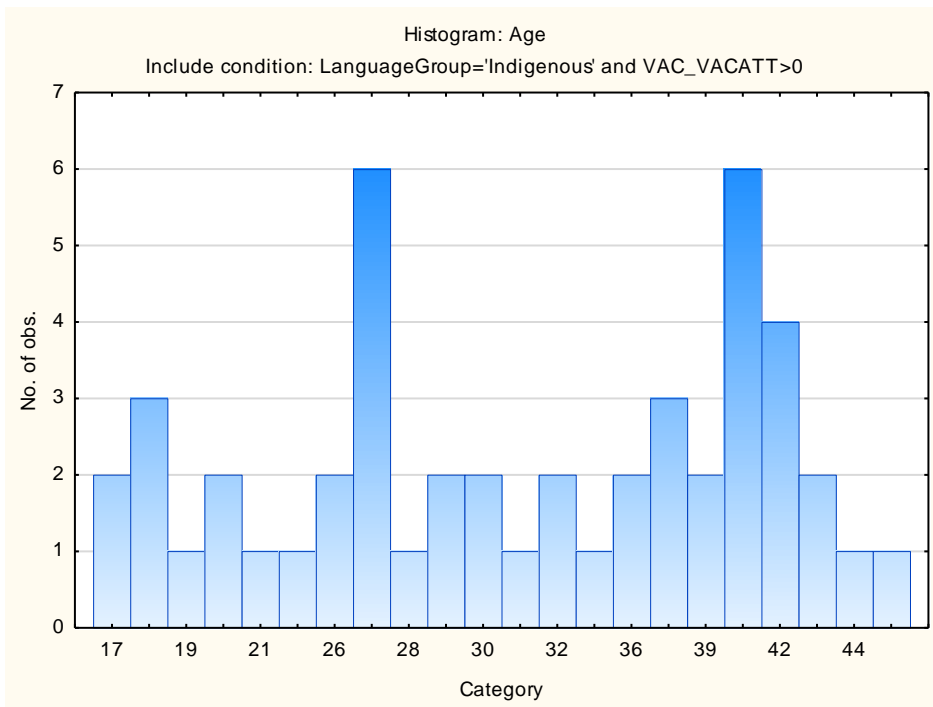
Category	Frequency table: Education			
	Count	Cumulative Count	Percent	Cumulative Percent
Tertiary	22	22	45,83333	45,8333
Grade 12	25	47	52,08333	97,9167
Missing	1	48	2,08333	100,0000

Category	Frequency table: Language			
	Count	Cumulative Count	Percent	Cumulative Percent
isiZulu	26	26	54,16667	54,1667
isiXhosa	7	33	14,58333	68,7500
Setswana	1	34	2,08333	70,8333
Xitsonga	1	35	2,08333	72,9167
Sesotho	13	48	27,08333	100,0000
Missing	0	48	0,00000	100,0000

Category	Frequency table: Language Group			
	Count	Cumulative Count	Percent	Cumulative Percent
Indigenous	48	48	100,0000	100,0000
Missing	0	48	0,0000	100,0000

Category	Frequency table: Race			
	Count	Cumulative Count	Percent	Cumulative Percent
African	48	48	100,0000	100,0000
Missing	0	48	0,0000	100,0000

Variable	Descriptive Statistics: Age					
	Mean	Std.Dev	Minimum	Maximum	N	No.cases Missing
Age	31,79167	8,676106	17,00000	45,00000	48	0



Cronbach Coefficient Alpha for Technical Test Battery Subtests:

Subtest	Cronbach Coefficient Alpha
Mechanical Reasoning Test	0,62
Spatial Reasoning Test	0,65

Results of lower than 0.75 are possibly related to respondents guessing the answers to items which they may not know, or a lack of exposure to the type of item content - which could be related to educational background. Results should therefore be interpreted with caution. Do not rely on these tests in isolation, but to consider the results as part of a holistic assessment, which incorporates additional sources of information. It should be remembered with the TTB2, that these tests have a knowledge component, they are not purely ability assessments. Therefore it is recommended that they should be used together with at least an Abstract Reasoning test. They do not substitute for general reasoning ability. School results should also be considered.

There was insufficient data to report on reliability for the VAC.

Standard Error of Measurement

Subtest	SEM	SD	Reliability
Mechanical Reasoning Test	2,76015397	4,477561	0,62
Spatial Reasoning Test	2,23053483	3,770292	0,65