

TIMSS 2011

The TIMSS 2011 Safe and Orderly School Scale, Eighth Grade

The Safe and Orderly School (SOS) scale was created based on teachers' degree of agreement to the five statements described below. See [Creating and Interpreting TIMSS and PIRLS 2011 Context Questionnaire Scales](#) for more information on how the scales were formed.

Exhibit 1: Items in the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade

Thinking about your current school, indicate the extent to which you agree or disagree with each of the following statements.

	Agree a lot	Agree a little	Disagree a little	Disagree a lot
BTBG07A 1) This school is located in a safe neighborhood	○	○	○	○
BTBG07B 2) I feel safe at this school	○	○	○	○
BTBG07C 3) This school's security policies and practices are sufficient	○	○	○	○
BTBG07D 4) The students behave in an orderly manner	○	○	○	○
BTBG07E 5) The students are respectful of the teachers	○	○	○	○

Safe and Orderly Somewhat Safe and Orderly Not Safe and Orderly

10.7 6.8

Exhibit 2: Item Parameters for the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade¹

Item	delta	tau_1	tau_2
BTBG07A	-2.11771	-1.19753	1.19753
BTBG07B	-2.72643	-1.36323	1.36323
BTBG07C	-1.68008	-1.48337	1.48337
BTBG07D	-0.20439	-1.90548	1.90548
BTBG07E	-0.61437	-1.82523	1.82523

¹ For the purpose of scaling, the categories "Disagree a little" and "Disagree a lot" were combined because there were very few respondents in each of these categories.

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants

$$A = 10.11516$$

$$B = 0.97722$$

$$\text{Transformed Scale Score} = 10.11516 + 0.97722 \cdot \text{Logit Scale Score}$$

Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score

Raw Score	Transformed Scale Score	Cutpoint	Raw Score	Transformed Scale Score	Cutpoint
0	4.58071		6	9.15186	
1	5.91141		7	9.86221	
2	6.70128	6.8	8	10.71576	10.7
3	7.34176		9	11.73013	
4	7.93426		10	13.22322	
5	8.52458				

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG07A	BTBG07B	BTBG07C	BTBG07D	BTBG07E
Armenia	0.68	45	0.59	0.70	0.79	0.63	0.63
Australia	0.86	65	0.72	0.80	0.79	0.86	0.84
Bahrain	0.73	49	0.61	0.79	0.71	0.72	0.66
Chile	0.82	58	0.69	0.82	0.81	0.77	0.72
Chinese Taipei	0.82	58	0.75	0.82	0.68	0.79	0.76
England	0.81	58	0.62	0.74	0.74	0.85	0.83
Finland	0.78	53	0.63	0.78	0.73	0.75	0.76
Georgia	0.67	45	0.67	0.80	0.83	0.52	0.47
Ghana	0.81	57	0.75	0.81	0.78	0.74	0.68
Hong Kong SAR	0.76	51	0.60	0.71	0.75	0.76	0.75
Hungary	0.79	55	0.63	0.79	0.76	0.78	0.75
Indonesia	0.83	60	0.76	0.78	0.72	0.82	0.78
Iran, Islamic Rep. of	0.75	51	0.67	0.79	0.75	0.69	0.66
Israel	0.78	54	0.68	0.78	0.72	0.75	0.75
Italy	0.79	55	0.77	0.79	0.72	0.70	0.71
Japan	0.76	52	0.74	0.80	0.58	0.77	0.69
Jordan	0.79	55	0.64	0.80	0.79	0.77	0.71
Kazakhstan	0.79	54	0.66	0.79	0.77	0.75	0.72
Korea, Rep. of	0.83	59	0.76	0.83	0.81	0.77	0.69
Lebanon	0.78	54	0.72	0.77	0.79	0.69	0.69
Lithuania	0.78	53	0.60	0.75	0.79	0.76	0.75
Macedonia, Rep. of	0.77	53	0.68	0.77	0.75	0.71	0.72
Malaysia	0.82	59	0.71	0.79	0.75	0.82	0.77
Morocco	0.83	60	0.78	0.82	0.81	0.76	0.69
New Zealand	0.82	59	0.67	0.76	0.74	0.84	0.81
Norway	0.69	47	0.47	0.57	0.64	0.85	0.80
Oman	0.75	50	0.63	0.72	0.74	0.76	0.68
Palestinian Nat'l Auth.	0.77	52	0.76	0.83	0.79	0.63	0.57

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG07A	BTBG07B	BTBG07C	BTBG07D	BTBG07E
Qatar	0.75	50	0.53	0.73	0.68	0.79	0.77
Romania	0.81	58	0.75	0.82	0.74	0.76	0.74
Russian Federation	0.80	56	0.70	0.80	0.73	0.78	0.74
Saudi Arabia	0.73	49	0.67	0.77	0.75	0.71	0.61
Singapore	0.86	65	0.79	0.84	0.81	0.82	0.79
Slovenia	0.82	58	0.72	0.78	0.77	0.77	0.76
Sweden	0.79	56	0.68	0.76	0.68	0.81	0.79
Syrian Arab Republic	0.73	50	0.76	0.76	0.72	0.68	0.62
Thailand	0.82	59	0.76	0.84	0.79	0.72	0.73
Tunisia	0.82	59	0.79	0.83	0.82	0.71	0.67
Turkey	0.85	62	0.82	0.84	0.82	0.75	0.71
Ukraine	0.62	42	0.38	0.66	0.64	0.75	0.75
United Arab Emirates	0.75	51	0.58	0.72	0.75	0.77	0.72
United States	0.83	60	0.67	0.76	0.76	0.85	0.82
Ninth Grade Participants							
Botswana	0.74	50	0.72	0.83	0.71	0.63	0.62
Honduras	0.86	64	0.84	0.84	0.83	0.74	0.73
South Africa	0.86	64	0.80	0.87	0.78	0.79	0.76
Benchmarking Participants							
Alberta, Canada	0.81	59	0.69	0.80	0.74	0.81	0.80
Ontario, Canada	0.82	59	0.77	0.67	0.71	0.86	0.80
Quebec, Canada	0.77	53	0.64	0.75	0.73	0.77	0.75
Abu Dhabi, UAE	0.74	50	0.50	0.71	0.76	0.77	0.77
Dubai, UAE	0.77	54	0.64	0.77	0.76	0.78	0.72
Alabama, US	0.83	60	0.63	0.80	0.78	0.83	0.82
California, US	0.83	60	0.66	0.76	0.80	0.81	0.83
Colorado, US	0.86	65	0.73	0.80	0.83	0.85	0.82
Connecticut, US	0.81	58	0.53	0.76	0.74	0.88	0.84
Florida, US	0.81	57	0.59	0.76	0.82	0.81	0.79
Indiana, US	0.76	54	0.65	0.72	0.64	0.82	0.81
Massachusetts, US	0.83	61	0.73	0.71	0.76	0.85	0.83
Minnesota, US	0.76	54	0.69	0.73	0.68	0.79	0.76
North Carolina, US	0.85	63	0.61	0.82	0.82	0.84	0.84

Exhibit 6: Relationship Between the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade, and TIMSS 2011 Achievement

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Armenia	0.07	0.07	0.00	0.00	0.01	0.00
Australia	0.35	0.28	0.12	0.08	0.09	0.05
Bahrain	0.25	0.32	0.06	0.11	0.04	0.09
Chile	0.32	0.31	0.10	0.10	0.09	0.08
Chinese Taipei	0.13	0.10	0.02	0.01	0.01	0.01
England	0.18	0.15	0.03	0.02	0.03	0.02
Finland	0.05	0.10	0.00	0.01	0.00	0.01
Georgia	0.04	0.07	0.00	0.01	0.01	0.00
Ghana	0.21	0.23	0.04	0.05	0.05	0.04
Hong Kong SAR	0.29	0.26	0.08	0.07	0.04	0.05
Hungary	0.22	0.13	0.05	0.02	0.03	0.01
Indonesia	0.06	0.03	0.00	0.00	0.00	0.00
Iran, Islamic Rep. of	0.11	0.18	0.01	0.03	0.01	0.02
Israel	0.22	0.18	0.05	0.03	0.04	0.03
Italy	0.13	0.13	0.02	0.02	0.01	0.01
Japan	0.10	0.15	0.01	0.02	0.01	0.01
Jordan	0.09	0.19	0.01	0.04	0.02	0.03
Kazakhstan	0.10	0.12	0.01	0.01	0.00	0.00
Korea, Rep. of	0.06	0.02	0.00	0.00	0.00	0.00
Lebanon	0.22	0.24	0.05	0.06	0.04	0.05
Lithuania	0.05	0.04	0.00	0.00	0.00	0.00
Macedonia, Rep. of	0.16	0.12	0.03	0.01	0.03	0.00
Malaysia	0.18	0.12	0.03	0.01	0.03	0.01
Morocco	0.20	0.12	0.04	0.02	0.04	0.01
New Zealand	0.16	0.20	0.02	0.04	0.01	0.05
Norway	0.13	0.10	0.02	0.01	0.00	0.00
Oman	0.16	0.13	0.03	0.02	0.02	0.02
Palestinian Nat'l Auth.	0.06	0.04	0.00	0.00	0.00	0.01
Qatar	0.23	0.20	0.05	0.04	0.02	0.02
Romania	0.11	0.11	0.01	0.01	0.01	0.01
Russian Federation	0.09	0.12	0.01	0.01	0.01	0.01
Saudi Arabia	0.14	0.14	0.02	0.02	0.01	0.01
Singapore	0.23	0.23	0.05	0.06	0.03	0.03
Slovenia	0.05	0.02	0.00	0.00	0.00	0.00
Sweden	0.13	0.16	0.02	0.02	0.02	0.02
Syrian Arab Republic	0.10	0.06	0.01	0.00	0.01	0.00
Thailand	0.06	-0.04	0.00	0.00	0.01	0.01
Tunisia	0.01	0.06	0.00	0.00	0.00	0.00

Exhibit 6: Relationship Between the TIMSS 2011 Safe and Orderly School Scale, Eighth Grade, and TIMSS 2011 Achievement (Continued)

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Turkey	0.26	0.18	0.07	0.03	0.05	0.03
Ukraine	0.01	0.10	0.00	0.01	0.00	0.01
United Arab Emirates	0.23	0.14	0.05	0.02	0.02	0.01
United States	0.20	0.26	0.04	0.07	0.04	0.06
International Median	0.13	0.13	0.02	0.02	0.01	0.01
Ninth Grade Participants						
Botswana	0.08	0.10	0.01	0.01	0.01	0.01
Honduras	0.04	-0.02	0.00	0.00	0.01	0.00
South Africa	0.16	0.09	0.03	0.01	0.03	0.01
Benchmarking Participants						
Alberta, Canada	0.08	0.08	0.01	0.01	0.01	0.01
Ontario, Canada	0.17	0.14	0.03	0.02	0.03	0.02
Quebec, Canada	0.21	0.26	0.04	0.07	0.02	0.03
Abu Dhabi, UAE	0.22	0.12	0.05	0.02	0.01	0.00
Dubai, UAE	0.25	0.28	0.06	0.08	0.03	0.08
Alabama, US	0.34	0.26	0.11	0.07	0.07	0.06
California, US	0.28	0.33	0.08	0.11	0.06	0.10
Colorado, US	0.30	0.12	0.09	0.02	0.11	0.03
Connecticut, US	0.38	0.42	0.15	0.18	0.15	0.16
Florida, US	0.11	0.24	0.01	0.06	0.02	0.08
Indiana, US	0.10	0.14	0.01	0.02	0.02	0.02
Massachusetts, US	0.23	0.26	0.05	0.07	0.10	0.05
Minnesota, US	0.25	0.14	0.06	0.02	0.02	0.01
North Carolina, US	0.02	0.26	0.00	0.07	0.04	0.08