

Exhibit 15.8: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the TIMSS 2015 *Students Confident in Mathematics* Scale, Fourth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBM03A	ASBM03B*	ASBM03C*	ASBM03D	ASBM03E*	ASBM03F	ASBM03G	ASBM03H*	ASBM03I*
Australia	0.87	50	0.74	0.71	0.78	0.71	0.65	0.74	0.42	0.78	0.74
Bahrain	0.76	35	0.18	0.72	0.74	0.38	0.73	0.34	0.33	0.79	0.74
Belgium (Flemish)	0.88	52	0.81	0.76	0.82	0.70	0.50	0.71	0.60	0.80	0.72
Bulgaria	0.87	49	0.73	0.70	0.73	0.71	0.62	0.70	0.66	0.74	0.73
Canada	0.86	48	0.73	0.75	0.77	0.70	0.63	0.69	0.38	0.78	0.74
Chile	0.82	41	0.65	0.60	0.70	0.64	0.64	0.61	0.44	0.72	0.75
Chinese Taipei	0.86	48	0.74	0.68	0.65	0.74	0.57	0.70	0.62	0.75	0.76
Croatia	0.89	53	0.75	0.73	0.71	0.76	0.69	0.70	0.67	0.77	0.78
Cyprus	0.86	47	0.71	0.68	0.71	0.68	0.61	0.70	0.59	0.73	0.74
Czech Republic	0.88	51	0.74	0.74	0.80	0.75	0.64	0.59	0.61	0.78	0.73
Denmark	0.87	50	0.78	0.75	0.80	0.74	0.58	0.63	0.54	0.75	0.74
England	0.87	49	0.73	0.70	0.78	0.71	0.64	0.72	0.36	0.79	0.76
Finland	0.86	49	0.78	0.73	0.81	0.74	0.64	0.70	0.52	0.77	0.53
France	0.87	50	0.75	0.72	0.77	0.74	0.64	0.61	0.54	0.76	0.77
Georgia	0.76	35	0.38	0.71	0.73	0.44	0.65	0.32	0.39	0.75	0.70
Germany	0.89	53	0.76	0.76	0.80	0.74	0.66	0.70	0.63	0.77	0.73
Hong Kong SAR	0.86	48	0.72	0.68	0.81	0.71	0.56	0.71	0.60	0.77	0.63
Hungary	0.88	52	0.78	0.72	0.78	0.76	0.56	0.74	0.72	0.74	0.68
Indonesia	0.75	34	0.37	0.70	0.73	0.41	0.70	0.16	0.32	0.75	0.76
Iran, Islamic Rep. of	0.76	34	0.50	0.56	0.50	0.52	0.68	0.52	0.49	0.72	0.72
Ireland	0.85	48	0.73	0.75	0.77	0.70	0.63	0.69	0.29	0.78	0.74
Italy	0.85	45	0.69	0.70	0.64	0.71	0.66	0.59	0.60	0.75	0.71
Japan	0.88	50	0.71	0.67	0.83	0.72	0.66	0.77	0.46	0.75	0.75
Jordan	0.75	35	0.09	0.73	0.76	0.26	0.78	0.17	0.25	0.80	0.77
Kazakhstan	0.85	45	0.68	0.69	0.72	0.66	0.62	0.66	0.65	0.72	0.64
Korea, Rep. of	0.88	53	0.82	0.78	0.78	0.73	0.43	0.79	0.56	0.80	0.76
Kuwait	0.75	33	0.22	0.68	0.70	0.40	0.71	0.36	0.39	0.75	0.70
Lithuania	0.84	45	0.75	0.70	0.75	0.66	0.48	0.69	0.62	0.72	0.59
Morocco	0.74	32	0.39	0.66	0.71	0.35	0.71	0.27	0.32	0.72	0.70
Netherlands	0.89	54	0.80	0.77	0.82	0.74	0.46	0.77	0.53	0.80	0.82

* Reverse coded

Exhibit 15.8: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the TIMSS 2015 Students Confident in Mathematics Scale, Fourth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item								
			ASBM03A	ASBM03B*	ASBM03C*	ASBM03D	ASBM03E*	ASBM03F	ASBM03G	ASBM03H*	ASBM03I*
New Zealand	0.83	42	0.70	0.66	0.74	0.66	0.54	0.67	0.42	0.72	0.67
Northern Ireland	0.87	49	0.77	0.74	0.79	0.70	0.66	0.71	0.31	0.76	0.76
Norway (5)	0.87	49	0.76	0.72	0.75	0.75	0.57	0.75	0.50	0.76	0.70
Oman	0.69	30	0.07	0.73	0.62	0.21	0.74	0.08	0.15	0.78	0.76
Poland	0.88	52	0.75	0.74	0.73	0.76	0.60	0.74	0.65	0.79	0.74
Portugal	0.86	49	0.72	0.64	0.77	0.67	0.65	0.72	0.66	0.69	0.75
Qatar	0.80	38	0.34	0.75	0.76	0.43	0.72	0.40	0.39	0.79	0.73
Russian Federation	0.89	54	0.75	0.75	0.78	0.77	0.69	0.71	0.62	0.76	0.76
Saudi Arabia	0.75	35	0.04	0.74	0.74	0.24	0.79	0.18	0.24	0.81	0.77
Serbia	0.88	51	0.71	0.72	0.75	0.68	0.68	0.68	0.66	0.76	0.75
Singapore	0.87	49	0.77	0.73	0.76	0.69	0.61	0.69	0.52	0.78	0.75
Slovak Republic	0.87	48	0.72	0.68	0.75	0.70	0.67	0.67	0.58	0.74	0.74
Slovenia	0.88	52	0.76	0.70	0.72	0.69	0.66	0.74	0.66	0.78	0.75
South Africa (5)	0.69	29	0.12	0.72	0.73	0.11	0.68	0.05	0.06	0.76	0.71
Spain	0.85	45	0.68	0.71	0.74	0.61	0.65	0.61	0.58	0.73	0.73
Sweden	0.87	49	0.75	0.73	0.74	0.74	0.60	0.71	0.47	0.79	0.72
Turkey	0.82	42	0.63	0.70	0.74	0.55	0.61	0.58	0.59	0.70	0.70
United Arab Emirates	0.79	37	0.46	0.67	0.71	0.51	0.65	0.48	0.44	0.73	0.70
United States	0.86	48	0.70	0.75	0.77	0.68	0.64	0.68	0.39	0.79	0.75
Benchmarking Participants											
Buenos Aires, Argentina	0.81	40	0.64	0.62	0.69	0.55	0.66	0.55	0.41	0.74	0.75
Ontario, Canada	0.86	49	0.73	0.76	0.78	0.69	0.61	0.70	0.39	0.78	0.74
Quebec, Canada	0.87	50	0.77	0.75	0.76	0.77	0.66	0.69	0.39	0.75	0.72
Norway (4)	0.84	45	0.71	0.67	0.72	0.73	0.49	0.74	0.47	0.72	0.68
Abu Dhabi, UAE	0.77	35	0.37	0.67	0.71	0.45	0.69	0.40	0.37	0.72	0.73
Dubai, UAE	0.83	42	0.62	0.69	0.70	0.60	0.63	0.60	0.54	0.73	0.69
Florida, US	0.87	50	0.71	0.78	0.76	0.68	0.68	0.67	0.47	0.81	0.75

* Reverse coded