

Exhibit 15.5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the TIMSS Advanced 2015 Students Like Learning Physics Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item											
			PSBP20A	PSBP20B	PSBP20C*	PSBP20D	PSBP20E	PSBP20F*	PSBP20G	PSBP20H	PSBP20I	PSBP20J	PSBP20K*	PSBP20L
France	0.89	47	0.59	0.50	0.63	0.70	0.78	0.30	0.78	0.75	0.83	0.69	0.80	0.66
Italy	0.90	49	0.62	0.54	0.60	0.78	0.78	0.33	0.81	0.79	0.82	0.77	0.75	0.64
Lebanon	0.83	39	0.67	0.59	0.34	0.48	0.70	0.16	0.75	0.72	0.81	0.73	0.51	0.67
Norway	0.89	47	0.44	0.35	0.69	0.67	0.78	0.44	0.78	0.79	0.85	0.74	0.77	0.68
Portugal	0.89	47	0.58	0.67	0.61	0.70	0.76	0.40	0.78	0.78	0.82	0.68	0.73	0.66
Russian Federation	0.92	53	0.53	0.78	0.63	0.76	0.82	0.38	0.79	0.81	0.85	0.82	0.67	0.70
Slovenia	0.87	41	0.50	0.59	0.48	0.57	0.70	0.49	0.72	0.77	0.80	0.73	0.59	0.64
Sweden	0.91	51	0.52	0.61	0.69	0.72	0.79	0.51	0.79	0.81	0.84	0.74	0.78	0.69
United States	0.92	52	0.63	0.61	0.55	0.66	0.82	0.63	0.78	0.80	0.85	0.75	0.75	0.78

* Reverse Coded