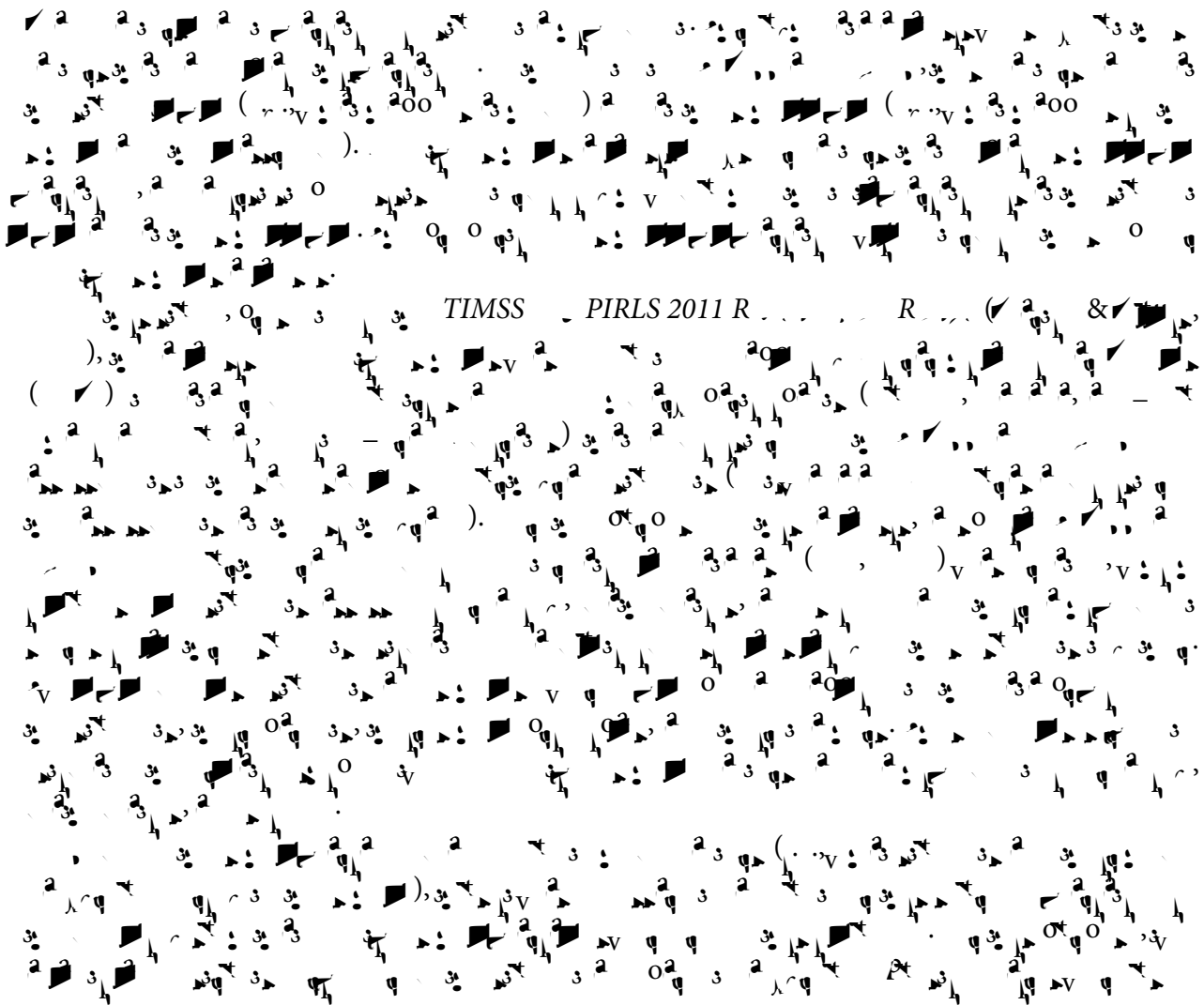


Scientific Method

Pierre Foy and
Laura M. O'Dwyer

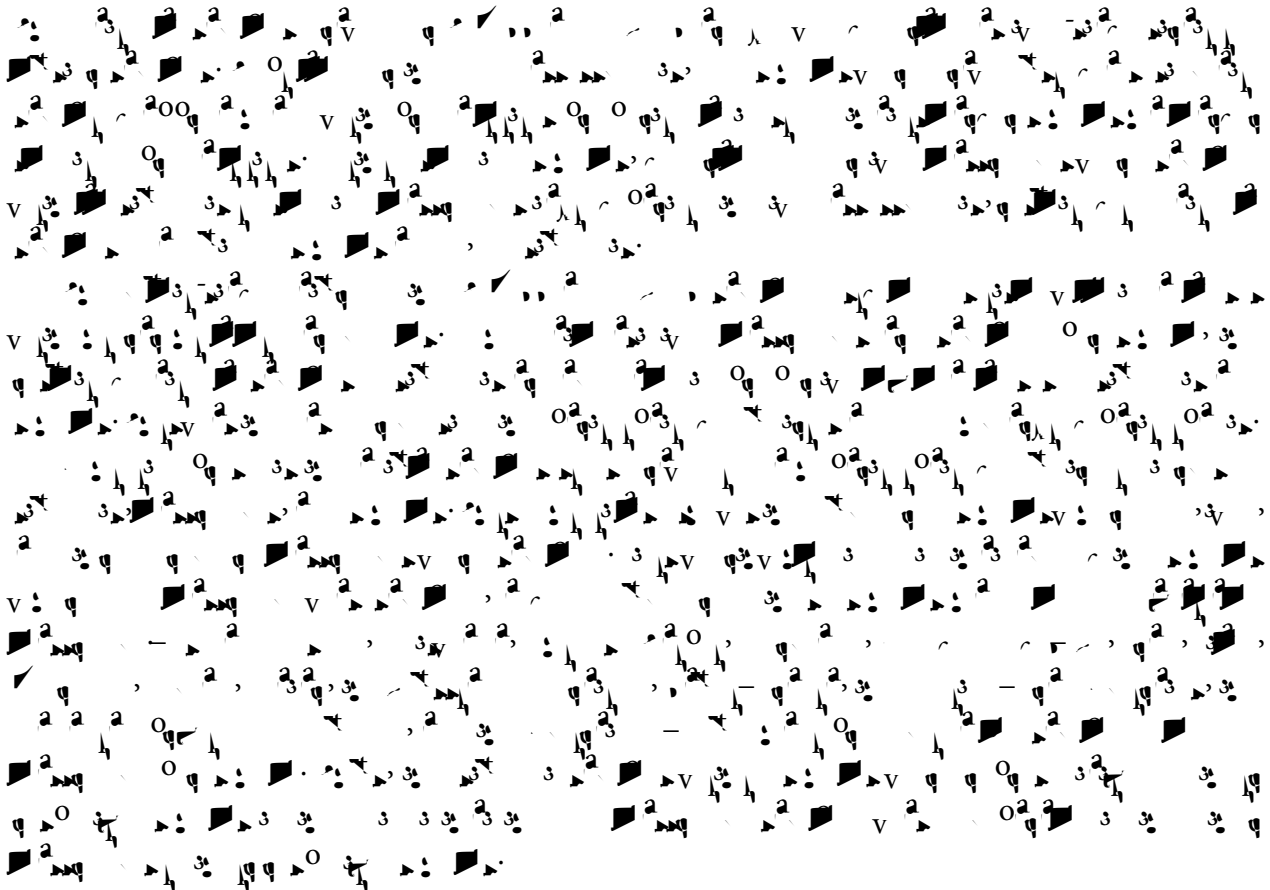
Overview



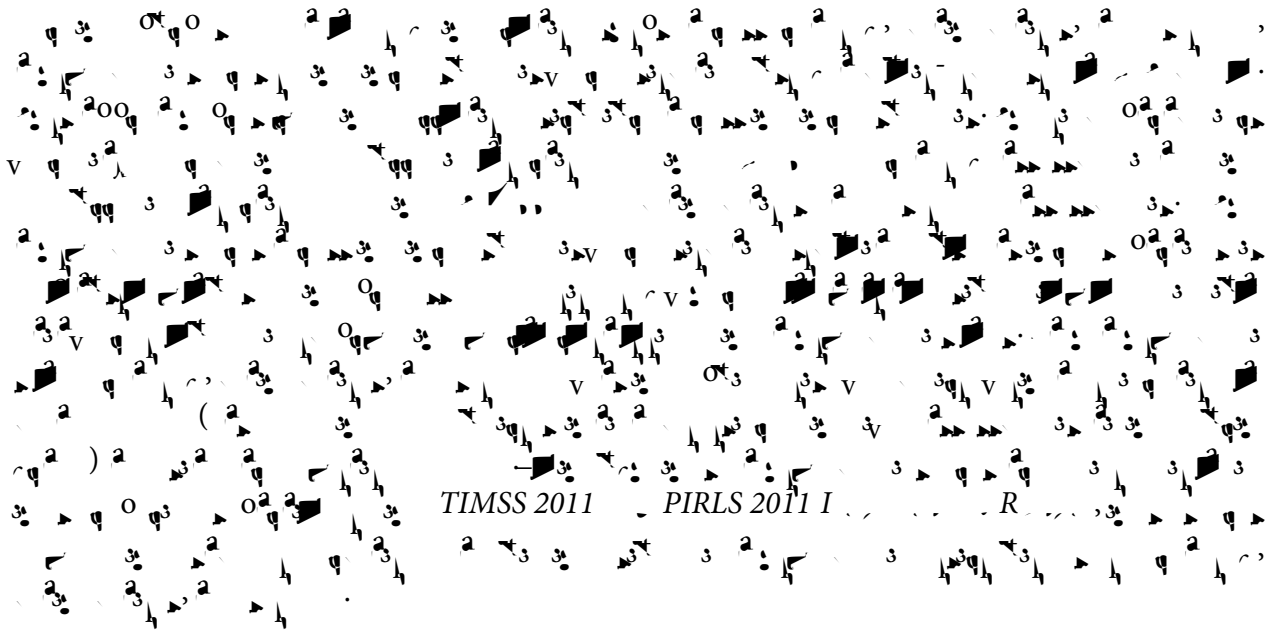
¹ All HLM analyses were conducted using the HLM7 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011).



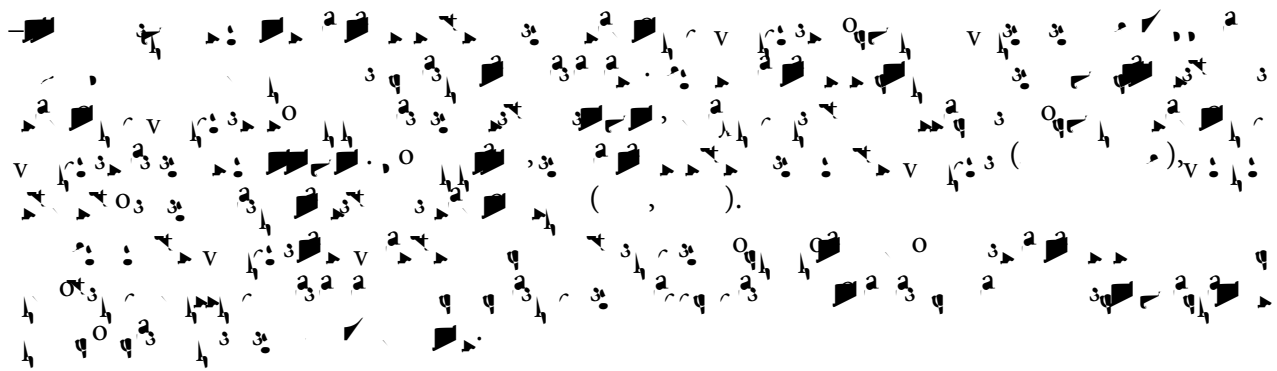
National Samples of Students and Schools



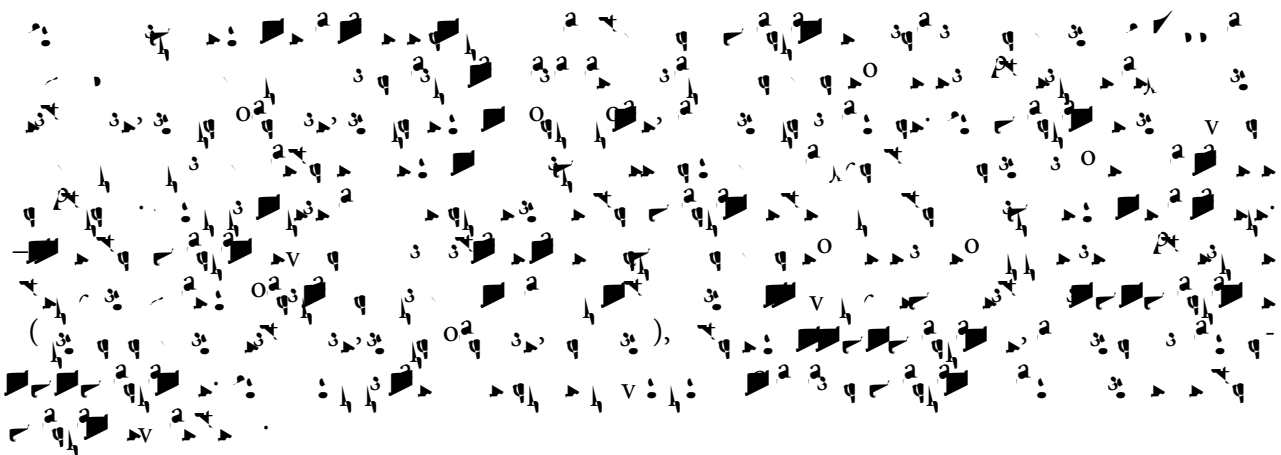
Achievement Scales



Sampling Weights



Analysis Variables



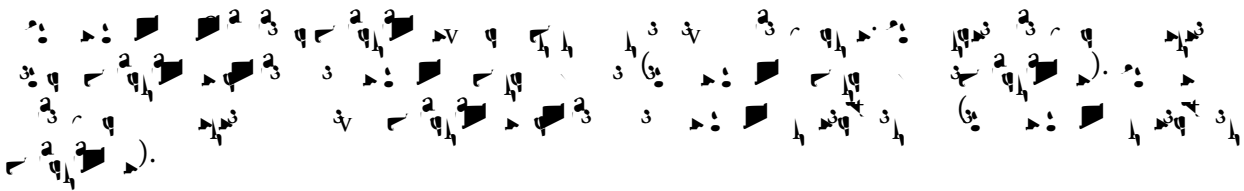
² The item parameters are presented in the scaling section of *Methods and Procedures in TIMSS and PIRLS 2011* (Martin & Mullis, 2012).

Student Level Variables		School Level Variables	
Name	Label	Name	Use
[Redacted Content]			





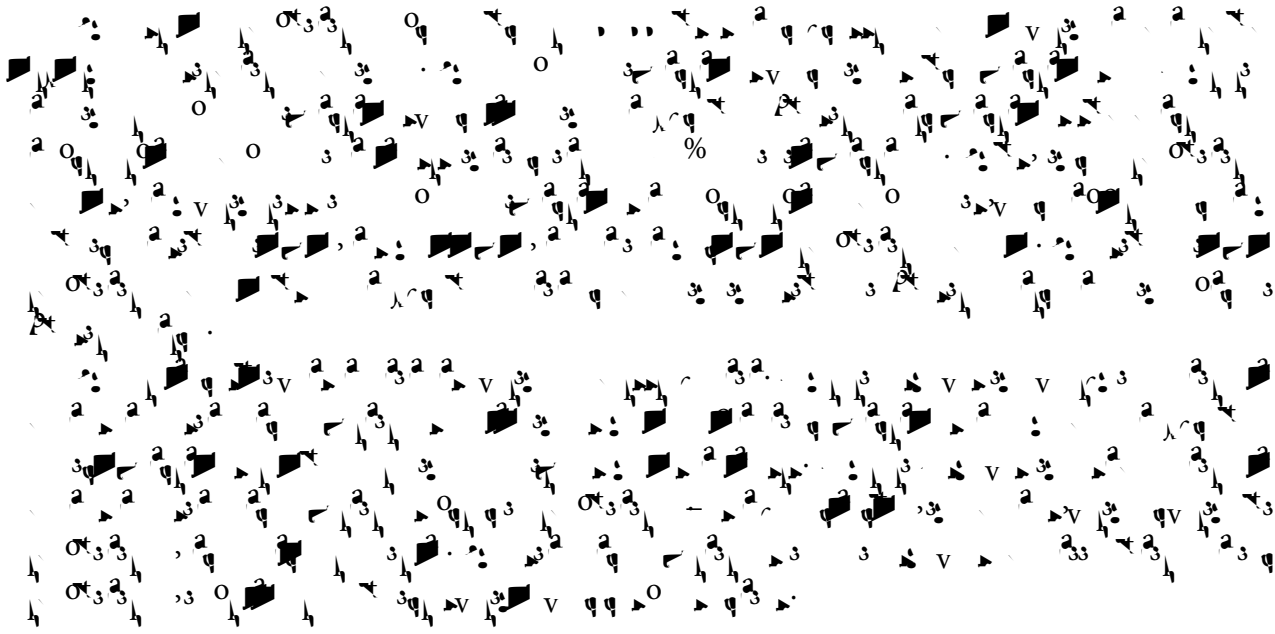
School Explanatory Variables



School Environment Variables





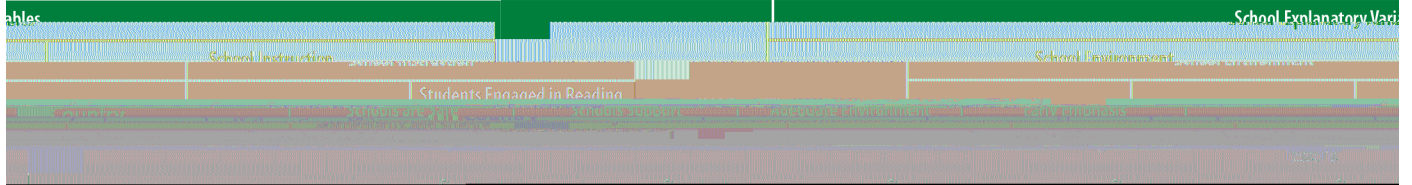


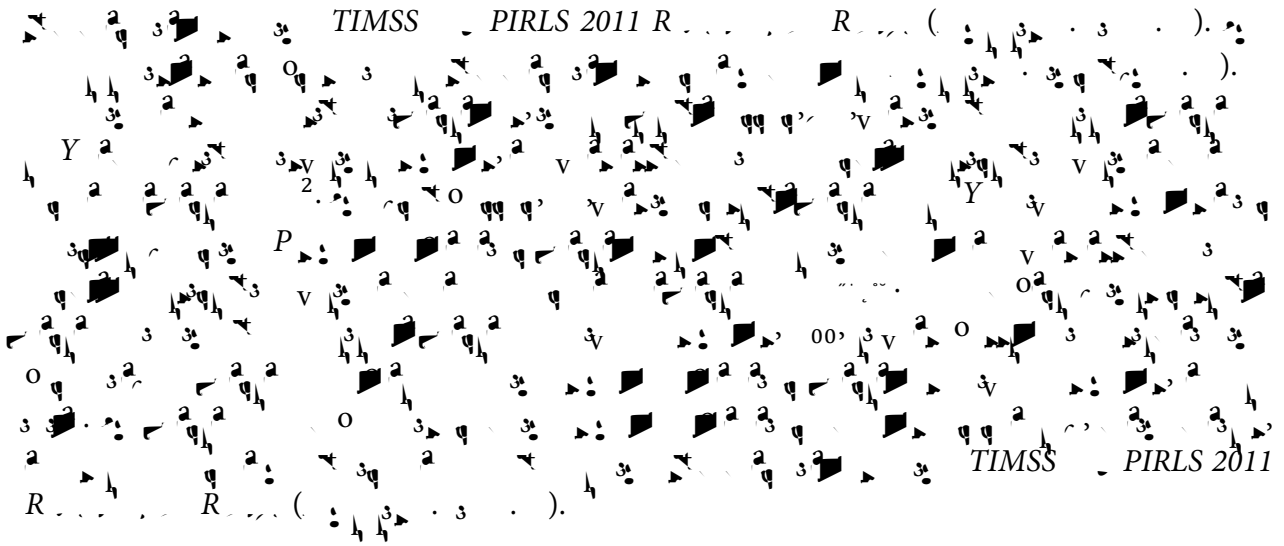
(Cont.)

Home Background Control Variables

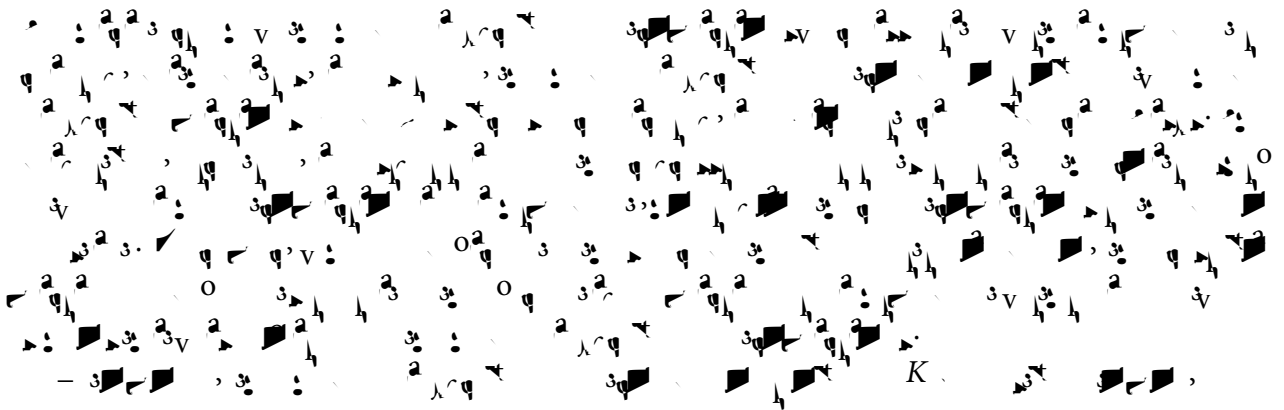
Country	Home Resources	Family Structure	Home Resources	Family Structure	Home Resources	Family Structure	Home Resources	Family Structure					
Austria	1.60	0.84	0.67	0.95	0.97	0.84	1.47	0.95	1.93	0.59	0.04	1.54	0.93
China	1.32	1.07	0.88	1.03	0.86	1.13	0.87	1.03	1.00	0.27	1.03	1.00	1.13
China Taipei	1.07	0.8	1.07	0.8	0.63	0.8	1.71	0.8	1.81	0.8	1.81	0.8	1.81
Germany	9.5	1.38	1.07	0.8	0.63	0.8	1.71	0.8	1.81	0.8	1.81	0.8	1.81
Hong Kong SAR	11.3	1.17	0.7	1.06	1.13	0.27	1.07	0.7	1.74	0.7	1.74	0.7	1.74
Hungary	2.0	0.2	1.60	1.00	1.00	1.34	0.2	0.40	1.00	1.00	1.00	1.00	1.00
Iran Islamic Rep. of	8.0	2.27	0.6	1.03	0.6	1.03	8.0	1.67	0.6	0.6	0.6	0.6	0.6

Analysis Prior to Imputation





Home Background Control Model



$\sum_{k=1}^K \alpha_k (\dots)$

$$0 = \alpha_0 \sum_{k=1}^K \alpha_k (\dots)$$

$\alpha_0 = \dots$

$$= k_0$$

\dots

$$= k_0$$

\dots

	Reading			Mathematics			Science		
	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes
Austria	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes
Chinese Taipei	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Croatia	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Finland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Georgia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Germany	Yes	No	Yes	No	Yes	No	Yes	No	No
Hong Kong, SAR of China	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Iran, Islamic Rep. of	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Ireland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Malta	No	No	No	No	No	No	No	No	No
Morocco	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Oman	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Portugal	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Qatar	No	No	No	No	No	No	No	No	No
Romania	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Slovenia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sixth Grade Countries									
Botswana	No	No	No	Yes	No	No	No	No	No
Quebec, Canada	No	No	No	No	No	No	No	No	No

Exhibit B.8: HLM Regression Coefficients for School Environment Model – Reading Achievement

Country	School Explanatory Variables		
	School Environment		
	Schools Are Safe and Orderly	Schools Support Academic Success	Adequate Environment and Resources
Australia	21 (3.5)	6 (2.1)	2 (2.5)
Austria	(3.3)	5 (2.4)	- 2 (1.3)
Azerbaijan	11 (4.5)	6 (3.6)	- 1 (4.4)
Chinese Taipei	5 (3.)	6 (2.4)	0 (2.0)
Croatia	2 (2.)	5 (1.)	- 3 (1.5)
Czech Republic	2 (5.4)	2 (2.4)	- 4 (2.)
Finland	(3.2)	5 (2.4)	- 2 (1.)
Georgia	5 (4.2)	(3.)	- 4 (3.)
Germany	(3.3)	16 (3.4)	- 1 (2.1)
Hong Kong SAR	7 (4.0)	0 (2.6)	- 2 (3.)
Hungary	11 (6.1)	16 (3.)	- 2 (2.2)
Iran, Islamic Rep. of	0 (4.4)	14 (3.7)	2 (3.7)
Ireland	11 (4.0)	5 (2.2)	- 1 (2.1)
Italy	7 (2.6)	- 3 (2.5)	3 (2.4)
Lithuania	(6.0)	11 (2.)	- 4 (3.)
Malta	21 (5.7)	21 (4.2)	0 (4.6)
Morocco	5 (5.0)	1 (3.7)	(3.7)
Northern Ireland	14 (4.0)	5 (2.2)	2 (1.)
Norway	7 (3.7)	6 (2.3)	- 5 (2.5)
Oman	7 (3.7)	12 (2.7)	3 (2.)
Poland	- 7 (4.5)	(2.1)	- 3 (2.0)
Portugal	2 (3.5)	(2.)	- 5 (2.6)
Qatar	25 (6.6)	12 (4.2)	(2.7)
Romania	11 (7.5)	10 (4.)	1 (4.3)
Russian Federation	3 (4.2)	3 (3.2)	3 (2.2)
Saudi Arabia	5 (4.1)	1 (3.2)	5 (4.5)
Singapore	7 (4.)	13 (2.)	- 5 (2.5)
Slovak Republic	(3.)	(3.1)	- 2 (2.)
Slovenia	1 (2.)	3 (1.)	0 (1.5)
Spain	5 (3.3)	(3.0)	- 2 (2.0)
Sweden	11 (2.7)	2 (2.1)	3 (2.0)
United Arab Emirates	17 (3.6)	12 (3.1)	7 (2.4)
Sixth Grade Countries			
Botswana	15 (4.)	1 (2.4)	2 (3.3)
Honduras	7 (5.2)	- 3 (3.7)	6 (4.1)
Benchmarking Participants			
Quebec, Canada	4 (2.4)	7 (1.)	1 (2.0)
Abu Dhabi, UAE	14 (5.)	15 (4.)	7 (3.5)
Dubai, UAE	27 (7.6)	(4.7)	(3.)

(.) indicates a coefficient that is not statistically significant at the 5 percent level.
 ▲ indicates a coefficient that is statistically significant at the 10 percent level.

Exhibit B.10:



Australia	20 (3.5)	6 (2.0)	2 (2.5)
Austria	10 (3.7)	6 (2.4)	- 1 (1.5)
Azerbaijan	17 (5.)	7 (4.6)	0 (6.5)
Chinese Taipei	4 (3.5)	6 (2.2)	0 (2.1)
Croatia	2 (2.)	4 (1.7)	- 3 (1.5)
Czech Republic	3 (5.)	3 (2.5)	- 4 (3.2)
Finland	11 (2.6)	6 (2.2)	- 3 (1.6)
Georgia	0 (5.1)	12 (4.)	- 7 (4.6)
Germany	(3.4)	17 (3.2)	- 1 (1.)
Hong Kong SAR	5 (4.2)	2 (2.7)	- 2 (4.2)
Hungary	13 (6.3)	17 (4.2)	- 3 (2.3)
Iran, Islamic Rep. of	- 2 (5.3)	15 (4.1)	1 (4.3)
Ireland	11 (4.2)	6 (2.4)	0 (2.)
Italy	(3.)	- 2 (3.1)	4 (3.2)
Lithuania	(6.5)	10 (3.5)	- 5 (4.)
Malta	16 (4.6)	1 (3.)	2 (3.)
Morocco			



Exhibit B.11: HLM Regression Coefficients for School Instruction Model – Reading Achievement

Country	School Explanatory Variables	
	School Instruction	
	Early Emphasis on Reading Skills	Students Engaged in Reading, Mathematics, and Science Lessons
Australia	0 (1.)	15 (5.2)
Austria	- 1 (1.7)	- 4 (3.)
Azerbaijan	1 (2.)	34 (.3)
Chinese Taipei	- 1 (1.5)	12 (3.5)
Croatia	1 (1.5)	- 7 (3.5) ▲
Czech Republic	0 (1.4)	- 1 (4.7)
Finland	1 (1.)	- 4 (5.4)
Georgia	1 (3.1)	31 (.2)
Germany	(2.)	- 4 (4.)
Hong Kong SAR	3 (1.6)	22 (4.3)
Hungary	0 (3.5)	5 (11.6)
Iran, Islamic Rep. of	12 (2.6)	3 (5.)
Ireland	3 (1.7)	6 (4.4)
Italy	- 1 (1.6)	4 (3.)
Lithuania	5 (1.)	1 (6.1)
Malta	- 2 (3.2)	47 (.7)
Morocco	11 (3.2)	30 (6.6)
Northern Ireland	1 (2.4)	10 (4.7)
Norway	- 1 (1.7)	(4.3)
Oman	5 (2.0)	22 (4.2)
Poland	- 1 (2.4)	- 13 (6.1) ▲
Portugal	- 4 (2.4)	21 (4.7)
Qatar	7 (2.)	47 (.5)
Romania	3 (6.3)	1 (7.)
Russian Federation	- 1 (1.7)	1 (3.4)
Saudi Arabia	3 (2.)	41 (7.4)
Singapore	0 (2.3)	(7.7)
Slovak Republic	1 (2.2)	0 (4.6)
Slovenia	- 1 (1.2)	- 3 (3.)
Spain	- 3 (1.6)	(4.6)
Sweden	1 (1.7)	- 3 (4.6)
United Arab Emirates	13 (1.6)	2 (5.6)
Sixth Grade Countries		
Botswana	0 (2.2)	55 (7.6)
Honduras	(4.0)	- 6 (.2)
Benchmarking Participants		
Quebec, Canada	0 (1.1)	11 (3.)
Abu Dhabi, UAE	7 (2.)	26 (7.)
Dubai, UAE	17 (2.4)	4 (13.4)

(.) = Significant at the 10 percent level.

▲ = Significant at the 5 percent level.

Exhibit B.13: HLM Regression Coefficients for School Instruction Model – Science Achievement

Country	School Explanatory Variables	
	School Instruction	
	Early Emphasis on Reading Skills	Students Engaged in Reading, Mathematics, and Science Lessons
Australia	0 (1.7)	14 (5.2)
Austria	- 1 (2.0)	- 5 (4.)
Azerbaijan	0 (3.3)	5 (.4)
Chinese Taipei	0 (1.5)	11 (3.5)
Croatia	1 (1.4)	- 7 (3.4) ▲
Czech Republic	0 (1.4)	1 (4.2)
Finland	1 (2.0)	- 6 (5.3)
Georgia	0 (3.5)	35 (11.6)
Germany	7 (2.)	- 6 (4.)
Hong Kong SAR	3 (1.6)	20 (4.4)
Hungary	0 (3.7)	6 (12.6)
Iran, Islamic Rep. of	11 (2.)	0 (6.6)
Ireland	3 (1.)	(6.4)
Italy	- 1 (2.1)	4 (5.7)
Lithuania	3 (2.0)	1 (6.2)
Malta	- 1 (2.)	36 (.2)
Morocco	7 (3.4)	34 (7.7)
Northern Ireland	- 1 (2.)	14 (5.5)
Norway	- 1 (1.5)	6 (4.4)
Oman	5 (2.3)	34 (5.3)
Poland	- 1 (2.5)	- 15 (6.0) ▲
Portugal	- 6 (3.5)	26 (6.7)
Qatar	5 (3.6)	4 (10.)
Romania	3 (7.0)	1 (.7)
Russian Federation	- 1 (2.3)	2 (4.4)
Saudi Arabia	3 (3.3)	3 (7.1)
Singapore	0 (2.3)	7 (7.6)
Slovak Republic	1 (2.6)	3 (5.2)
Slovenia	- 1 (1.6)	- 5 (4.5)
Spain	- 2 (1.7)	(4.7)
Sweden	2 (1.)	- 5 (5.6)
United Arab Emirates	11 (1.6)	30 (5.5)
Sixth Grade Countries		
Botswana	0 (2.5)	75 (.5)
Honduras	(4.0)	- (.2)
Benchmarking Participants		
Quebec, Canada	- 1 (1.3)	10 (3.7)
Abu Dhabi, UAE	7 (2.7)	2 (7.)
Dubai, UAE	16 (2.4)	50 (13.1)

(.) = not statistically significant

▲ = statistically significant at the 10 percent level

Exhibit B.14:

Australia	20 (3.5)	6 (2.1)	2 (2.5)	2 (1.5)	6 (4.2)
Austria	(3.3)	5 (2.4)	- 2 (1.4)	- 2 (1.6)	- 4 (3.)
Azerbaijan	(4.3)	6 (2.)	- 1 (3.2)	1 (2.7)	31 (.)
Chinese Taipei	4 (3.5)	6 (2.4)	0 (2.0)	- 1 (1.4)	10 (3.3)
Croatia	3 (2.7)	5 (1.)	- 2 (1.6)	0 (1.6)	- (3.6) ▲
Czech Republic	2 (5.5)	3 (2.4)	- 5 (3.0)	- 1 (1.3)	- 2 (4.5)
Finland	(3.2)	5 (2.5)	- 2 (1.)	0 (1.7)	- 3 (5.2)
Georgia	3 (3.7)	7 (3.6)	- 6 (3.7)	0 (3.3)	2 (. 5)
Germany	(3.3)	15 (3.0)	- 1 (2.0)	5 (2.3)	- 3 (3.7)
Hong Kong SAR	2 (3.)	- 4 (2.5)	- 2 (3.5)	4 (1.6)	23 (5.2)
Hungary	10 (6.3)	16 (3.)	- 3 (2.1)	- 2 (2.7)	2 (. 3)
Iran, Islamic Rep. of	0 (4.3)	12 (3.6)	3 (3.7)	10 (2.6)	0 (5.)
Ireland	11 (3.)	5 (2.2)	- 2 (2.1)	2 (1.)	5 (4.4)
Italy	7 (2.6)	- 2 (2.6)	3 (2.5)	- 1 (1.6)	3 (4.1)
Lithuania	7 (5.5)	(2.6)	- 4 (4.0)	4 (1.)	13 (5.0)
Malta	1 (5.6)	1 (4.1)	- 1 (4.5)	- 3 (2.7)	22 (. 1)
Morocco	1 (4.7)	12 (3.7)	10 (3.5)	7 (3.6)	26 (6.6)
Northern Ireland	14 (3.6)	5 (2.1)	2 (1.)	2 (2.1)	6 (4.3)
Norway	7 (3.)	5 (2.4)	- 4 (2.5)	- 1 (1.6)	4 (4.1)
Oman	5 (3.5)	(2.6)	4 (2.)	4 (1.)	1 (4.3)
Poland	- 5 (4.4)	(2.1)	- 3 (2.0)	- 2 (2.3)	- (5.5)
Portugal	- 2 (3.4)	(2.6)	- 5 (2.4) ▲	- 4 (2.3)	17 (5.1)
Qatar	1 (6.4)	10 (4.0)	(2.5)	3 (2.2)	30 (7.)
Romania	6 (. 0)	11 (5.2)	1 (4.1)	5 (6.0)	15 (. 4)
Russian Federation	4 (4.5)	3 (3.3)	3 (2.3)	- 2 (1.)	0 (3.6)
Saudi Arabia	- 1 (3.7)	15 (3.2)	5 (3.)	1 (2.4)	31 (7.4)
Singapore	(4.7)	14 (2.)	- 4 (2.4)	- 2 (2.0)	12 (6.)
Slovak Republic	(3.7)	(3.2)	- 2 (2.)	1 (1.)	0 (4.1)
Slovenia	2 (3.0)	4 (1.)	0 (1.5)	- 1 (1.3)	- 4 (3.)
Spain	5 (3.1)	(2.6)	- 2 (1.)	- 4 (1.6) ▲	7 (3.7)
Sweden	11 (2.)	2 (2.1)	3 (2.0)	0 (1.6)	- 3 (3.7)
United Arab Emirates	10 (3.4)	(2.)	6 (2.4)	10 (1.6)	20 (5.6)

Exhibit B.16: HLM Regression Coefficients for School Environment and Instruction Model – Science Achievement

Country	School Explanatory Variables				
	School Environment			School Instruction	
	Schools Are Safe and Orderly	Schools Support Academic Success	Adequate Environment and Resources	Early Emphasis on Reading Skills	Students Engaged in Reading, Mathematics, and Science Lessons
Australia	1 (3.5)	6 (2.0)	2 (2.5)	2 (1.5)	5 (4.2)
Austria	10 (3.7)	6 (2.5)	- 1 (1.6)	- 2 (1.7)	- 5 (4.7)
Azerbaijan	11 (5.1)	7 (3.2)	0 (4.0)	0 (3.2)	56 (.0)
Chinese Taipei	4 (3.3)	5 (2.2)	1 (2.0)	- 1 (1.3)	(3.5)
Croatia	3 (2.7)	4 (1.7)	- 2 (1.6)	0 (1.4)	- (3.6) ▲
Czech Republic	3 (5.)	3 (2.5)	- 4 (3.2)	- 1 (1.3)	0 (4.2)
Finland	11 (2.6)	6 (2.3)	- 3 (1.5)	0 (1.)	- 5 (5.0)
Georgia	- 2 (4.3)	10 (4.4)	- (4.6)	0 (3.6)	34 (12.0)
Germany	(3.5)	15 (2.)	- 1 (1.)	4 (2.3)	- 5 (3.)
Hong Kong SAR	0 (4.3)	- 2 (2.6)	- 2 (3.)	3 (1.6)	21 (5.3)
Hungary	13 (6.4)	1 (4.0)	- 4 (2.2)	- 3 (2.7)	3 (10.3)
Iran, Islamic Rep. of	- 1 (5.2)	13 (4.1)	2 (4.1)	(2.)	- 3 (6.6)
Ireland	11 (4.1)	7 (2.5)	- 1 (2.)	2 (1.)	(6.2)
Italy	(3.)	- 2 (3.2)	4 (3.2)	- 2 (2.2)	2 (5.6)
Lithuania	7 (5.)	(3.3)	- 5 (4.)	3 (2.0)	13 (4.)
Malta	14 (4.6)	16 (3.)	2 (3.)	- 3 (2.4)	15 (7.1)
Morocco	0 (5.6)	11 (4.4)	11 (3.)	4 (4.0)	30 (7.6)
Northern Ireland	16 (4.)	5 (2.3)	0 (2.6)	1 (2.5)	(5.0)
Norway	7 (4.0)	7 (2.5)	- 4 (2.4)	- 1 (1.4)	2 (4.3)
Oman	7 (4.0)	11 (3.1)	0 (3.4)	3 (2.3)	30 (5.6)
Poland	- 6 (4.6)	(2.2)	- 4 (2.1)	- 2 (2.3)	- (5.5)
Portugal	- 4 (4.)	10 (3.)	- 5 (3.0)	- 6 (3.3)	23 (7.2)
Qatar	20 (7.)	10 (5.1)	(3.1)	2 (2.)	31 (.7)
Romania	(10.2)	13 (6.2)	1 (4.6)	5 (6.6)	14 (10.2)
Russian Federation	5 (5.4)	1 (3.6)	3 (2.5)	- 2 (2.4)	1 (4.7)
Saudi Arabia	- 1 (4.6)	15 (4.1)	3 (5.1)	1 (3.0)	2 (7.0)
Singapore	6 (4.7)	15 (2.)	- 4 (2.4)	- 2 (2.0)	10 (6.)
Slovak Republic	11 (4.6)	10 (4.0)	- 4 (3.3)	1 (2.3)	4 (4.7)
Slovenia	3 (2.)	3 (1.)	0 (1.7)	- 2 (1.7)	- 6 (4.4)
Spain	5 (3.5)	(2.6)	- 2 (2.2)	- 3 (1.7)	5 (3.)
Sweden	14 (3.1)	3 (2.2)	2 (2.1)	0 (1.)	- 5 (4.4)
United Arab Emirates	7 (3.5)	11 (2.)	4 (2.4)	(1.6)	24 (5.5)
Sixth Grade Countries					
Botswana	(5.4)	17 (2.)	4 (2.)	0 (2.2)	54 (7.6)
Honduras	6 (5.3)	- 4 (4.1)	5 (3.)	7 (4.0)	-11 (.0)
Benchmarking Participants					
Quebec, Canada	3 (2.)	(1.)	0 (1.)	- 2 (1.1)	7 (3.5)
Abu Dhabi, UAE	6 (6.3)	16 (4.5)	6 (3.4)	6 (2.4)	23 (7.4)
Dubai, UAE	14 (6.0)	5 (4.2)	10 (3.4)	15 (2.4)	3 (10.2)

(.) C . c ca a a
 ▲ C . c ca a a

Exhibit B.18: HLM Regression Coefficients for Home Background Control Model – Mathematics Achievement

Country	Home Background Control Variables			
	Students within Schools		Between Schools	
	Home Resources for Learning	Early Literacy/ Numeracy Tasks	School Average of ...	
			Home Resources for Learning	Early Literacy/ Numeracy Tasks
Australia	12 (1.4)	15 (1.4)	56 (4.0)	23 (.4)
Austria	16 (0.7)	(0.7)	25 (3.5)	7 (7.0)
Azerbaijan	(1.2)	4 (0.)	12 (10.4)	- 11 (.)
Chinese Taipei	12 (0.)	17 (1.1)	22 (2.5)	23 (6.3)
Croatia	11 (0.)	16 (0.)	24 (2.4)	15 (5.5)
Czech Republic	17 (1.2)	(0.)	37 (5.)	26 (7.7)
Finland	10 (0.)	1 (0.)	15 (5.3)	15 (6.1)
Georgia	10 (1.5)	(1.1)	21 (4.7)	- 1 (.2)
Germany	13 (0.)	(1.0)	31 (3.)	10 (.5)
Hong Kong SAR	3 (0.7)	12 (1.1)	6 (2.0)	55 (4.)
Hungary	17 (0.)	(0.)	35 (2.1)	- 3 (7.)
Iran, Islamic Rep. of	7 (1.1)	(0.7)	23 (2.2)	0 (4.)
Ireland	17 (0.)	10 (1.3)	25 (3.)	- 2 (7.1)
Italy	12 (1.0)	10 (0.)	20 (4.6)	7 (6.5)
Lithuania	11 (1.2)	1 (0.)	21 (3.7)	27 (5.4)
Malta	15 (1.1)	10 (1.0)	34 (4.5)	27 (.0)
Morocco	0 (1.2)	10 (1.4)	(.6)	- 5 (7.2)
Northern Ireland	16 (1.5)	(1.4)	4 (5.)	6 (.7)
Norway	(1.5)	13 (0.)	21 (5.6)	7 (10.1)
Oman	13 (0.)	1 (0.)	1 (3.)	- 5 (11.7)
Poland	16 (0.)	13 (0.)	1 (2.)	10 (5.1)
Portugal	10 (1.0)	(0.)	17 (5.)	- 13 (.)
Qatar	11 (1.4)	13 (1.3)	71 (5.1)	1 (11.0)
Romania	14 (2.1)	10 (2.5)	21 (6.6)	- 1 (10.2)
Russian Federation	(1.0)	10 (0.)	23 (5.4)	4 (7.2)
Saudi Arabia	5 (1.4)	10 (1.1)	11 (6.7)	15 (6.)
Singapore	12 (0.)	15 (1.1)	25 (2.6)	4 (4.4)
Slovak Republic	17 (0.)	(0.)	1 (5.7)	- 13 (.4)
Slovenia	1 (1.2)	11 (0.)	26 (3.0)	(4.6)
Spain	11 (0.)	12 (1.0)	21 (2.)	22 (4.)
Sweden	11 (0.)	14 (1.1)	24 (1.)	(4.0)
United Arab Emirates	(0.7)	10 (0.6)	42 (2.6)	(6.3)
Sixth Grade Countries				
Botswana	3 (0.)	(1.0)	26 (4.)	(6.4)
Honduras	- 3 (1.4) ▲	5 (1.6)	17 (4.)	(7.)
Benchmarking Participants				
Quebec, Canada	10 (1.0)	(1.0)	22 (3.5)	6 (5.)
Abu Dhabi, UAE	(1.4)	11 (1.2)	40 (4.6)	25 (.7)
Dubai, UAE	11 (1.0)	(0.)	60 (3.2)	23 (10.2)

(.) ...
 ▲ ...

Exhibit B.27:



Australia	11 (4.0)	3 (2.1)	1 (2.0)	2 (1.4)	3 (3.6)	12 (1.4)	15 (1.4)	42 (3.)	1 (.5)
Austria	5 (3.6)	3 (2.4)	1 (1.6)	- 3 (1.6)	1 (4.6)	16 (0.7)	(0.7)	21 (3.5)	(6.3)
Azerbaijan	(5.1)	5 (3.)	3 (4.0)	- 4 (3.6)	5 (.2)	(1.2)	4 (0.)	16 (.2)	- 14 (7.5)
Chinese Taipei	4 (2.1)	0 (1.5)	0 (1.5)	- 1 (0.)	4 (2.6)	12 (0.)	17 (1.1)	22 (2.6)	20 (6.4)
Croatia	3 (2.0)	- 1 (1.2)	1 (1.3)	0 (1.2)	- 2 (2.7)	11 (0.)	16 (0.)	25 (2.6)	15 (5.2)
Czech Republic	5 (3.)	- 2 (1.6)	- 2 (1.)	1 (0.)	1 (3.4)	17 (1.2)	(0.)	3 (5.)	26 (7.5)
Finland	10 (2.5)	- 1 (2.1)	3 (1.5)	2 (2.1)	- 1 (5.4)	10 (0.)	1 (0.)	16 (5.1)	15 (5.5)
Georgia	- 2 (4.5)	10 (6.2)	- 11 (4.5) ▲	- 2 (3.4)	35 (11.4)	10 (1.5)	(1.0)	1 (5.1)	- 3 (.3)
Germany	7 (2.)	6 (2.)	0 (1.7)	3 (1.)	- 4 (3.6)	13 (0.)	(1.0)	21 (3.)	13 (.2)
Hong Kong SAR	2 (2.2)	- 2 (1.7)	- 2 (2.4)	0 (0.)	7 (3.5)	3 (0.7)	12 (1.1)	6 (2.2)	52 (5.0)
Hungary	2 (3.7)	3 (2.3)	1 (1.3)	- 1 (1.7)	16 (6.3)	17 (0.)	(0.)	32 (2.3)	2 (.6)
Iran, Islamic Rep. of	4 (3.)	2 (3.2)	- 2 (2.)	0 (1.)	3 (4.6)	7 (1.1)	(0.7)	23 (2.6)	0 (5.1)
Ireland	4 (3.)	4 (2.2)	0 (2.0)	1 (1.5)	12 (5.5)	17 (0.)	10 (1.3)	21 (3.)	- 3 (7.4)
Italy	5 (4.3)	- 2 (3.2)	7 (3.1)	0 (2.2)	4 (5.4)	12 (1.0)	10 (0.)	1 (4.5)	7 (6.)
Lithuania	6 (3.)	1 (2.0)	2 (2.2)	2 (1.1)	1 (3.5)	11 (1.2)	1 (0.)	21 (3.4)	26 (5.3)
Malta	(3.0)	5 (2.6)	- 2 (2.1)	- 2 (1.5)	10 (5.5)	15 (1.1)	10 (1.0)	25 (4.)	16 (.)
Morocco	1 (4.7)	(4.6)	10 (3.6)	4 (3.)	24 (6.7)	0 (1.2)	10 (12.75)	10 (12.75)	10 (12.75)



Exhibit B.28: HLM Regression Coefficients for School Enrichment Practices (Back to HLM Regression) – Literacy

	Students Engaged in Reading, Mathematics, and Science Lessons	Home Resources for Learning	Early Literacy/Numeracy Tasks
Australia	(3.3)	3 (1.6)	1 (1.)
Austria	5 (3.0)	2 (2.2)	0 (1.3)
Azerbaijan	10 (5.2)	6 (3.5)	0 (4.1)
Chinese Taipei	5 (1.)	- 1 (1.3)	1 (1.3)
Croatia	4 (2.0)	- 1 (1.1)	- 1 (1.2)
Czech Republic	5 (3.2)	- 2 (1.6)	- 1 (1.7)
Finland	11 (2.3)	2 (2.2)	0 (1.5)
Georgia	- 4 (4.0)	6 (5.2)	- 10 (4.0) ▲
Germany	(3.2)	7 (2.)	1 (1.7)
Hong Kong SAR	1 (2.4)	- 3 (1.)	- 2 (2.2)
Hungary	1 (4.0)	2 (2.7)	0 (1.6)
Iran, Islamic Rep. of	5 (4.2)	3 (3.3)	- 2 (3.2)
Ireland	3 (4.2)	5 (2.4)	0 (2.5)
Italy	7 (4.0)	- 2 (3.1)	4 (2.)
Lithuania	7 (2.)	- 1 (2.1)	1 (2.2)
Malta	6 (3.6)	4 (2.)	0 (2.5)
Morocco	1 (5.7)	10 (5.4)	11 (3.)
Northern Ireland	11 (4.5)	2 (1.)	- 1 (2.1)
Norway	6 (3.2)	2 (2.2)	0 (2.1)
Oman	(4.0)	(3.0)	- 2 (3.2)
Poland	1 (3.5)	3 (1.)	- 2 (1.)
Portugal	- 1 (4.7)	6 (3.2)	- 7 (2.) ▲
Qatar	1 (6.1)	3 (4.3)	4 (2.3)
Romania	(.1)	7 (6.6)	- 3 (4.6)
Russian Federation	6 (4.7)	- 4 (3.2)	2 (2.5)
Saudi Arabia	1 (4.5)	12 (3.)	2 (5.2)
Singapore	0 (2.1)	2 (1.4)	1 (1.0)
Slovak Republic	10 (4.6)	4 (3.2)	- 4 (3.1)
Slovenia	2 (2.5)	- 1 (2.0)	1 (1.5)
Spain	5 (3.1)	1 (2.5)	0 (2.0)
Sweden	4 (2.5)	0 (1.6)	1 (1.7)
United Arab Emirates	3 (3.1)	7 (2.5)	- 1 (2.3)
Sixth Grade Countries			
Botswana	(4.1)	7 (2.3)	3 (2.5)
Honduras	5 (4.)	- 5 (3.7)	0 (3.5)
Benchmarking Participants			
Quebec, Canada	2 (2.6)	3 (1.7)	- 0 (1.6)
Abu Dhabi, UAE	7 (5.3)	(4.2)	- 0 (3.4)
Dubai, UAE	1 (5.2)	6 (2.7)	5 (2.)

(.) indicates a statistically significant coefficient.

▲

