Management Practices in Education: Descriptive Evidence

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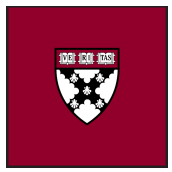


AEA Meetings – January 2012

Big picture question is does management matter in education – can better management improve pupils outcomes?

- Poor productivity of educational systems around the world
  - Massive increase in spending but flat educational achievements over the past 30 years

- Mixed views on what can be done about it
  - All depends on pupils socio economic background (Coleman, 1966) =>not much
  - Cognitive skills can be affected by institutional context (Hoxby 1996) and specific inputs (Hanusheck 1997, Rockoff 2006)

- More recent research points to importance of managerial choices
  - Charter schools studies
  - Role of basic managerial choices (Rockoff et al. 2011, Dobbie & Fryer, 2011)

This research

- We gathered large sample international data to study the relevance of management in education
  - Survey instrument based on Bloom and Van Reenen (2007)
  - Long run measurement project: +10,000 organizations in 20 countries interviewed so far

- Today we will discuss some of the first steps in this research agenda
  - Approx. 1,000 middle schools Principals in Canada, Germany, Italy, Sweden, UK and US
  - **Descriptive evidence, no causal results**

- Preliminary findings
  - Wide heterogeneity in school management across and within countries
  - Management positively associated with school performance
  - School size, ownership, competition and specific principal characteristics associated with higher management scores

Agenda

1. **Measuring management practices in education**
2. Describing management across schools
3. “Drivers” of management practices
4. Next steps

The management survey methodology

1) Developing management questions

- 20 practice scorecard: use of data, monitoring, targets, incentives, accountability
- Interviewed middle schools principals for ~1 hour

2) Getting schools to participate in the interview

- Performance indicators from external sources (not interview)
- Endorsement letter from Department of Education
- Run by 25 MBA-types (loud, assertive & experienced)

3) Obtaining unbiased responses (“Double-blind”)

- Interviewers do not know the school’s performance
- Interviewees are not informed (in advance) they are scored

Q3 Data Driven Planning and Student Transitions

- Is data used to inform planning and strategies? If so, how is it used – especially in regards to student transitions through grades/levels?
- What drove the move towards more data-driven planning-tracking?

Score	(1): School may be aware of critical transitions for students, but little or no effort is made to match support services to students; data is often unavailable or difficult to use	(3): School may understand the critical transition points for students, although these are not identifies in a consistent manner; some data is available, although not necessarily in an integrated or easy to use manner	(5): Student transitions are managed in an integrated and proactive manner, supported by formative assessments tightly linked to learning expectations; data is widely available and easy to use

Q7 MONITORING – Performance Review

How often do you review school performance with teachers and staff? Could you walk me through the steps you go through in a process review? Who is involved in these meetings? Who gets to see the results of this review? What sort of follow-up plan would you leave these meetings with?

Score	(1): Performance is reviewed infrequently or in an un-meaningful way e.g. only success or failure is noted	(3): Performance is reviewed periodically with both successes and failures identified. Results are communicated to senior staff. No clear follow up plan is adopted.	(5): Performance is continually reviewed, based on the indicators tracked. All aspects are followed up to ensure continuous improvement. Results are communicated to all staff.

Performance Monitoring: Schools

NYC Department of Education

Value-added Data for Teachers Initiative

Teacher: **Swain, Winthrop**

Teacher Performance by Student Characteristics

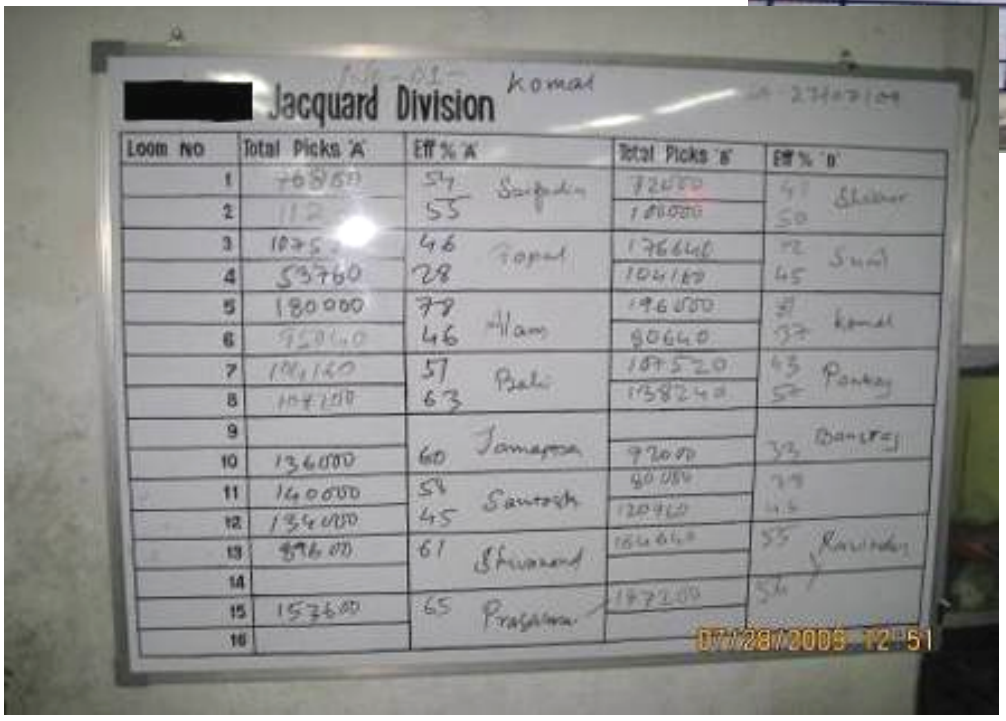
Teacher's value-added for sub-groups of students compared to teacher's value-added overall for history: up to 3 years

Types of Student	Sample Size / (% of Sample)	Actual Gain	Predicted Gain	Difference from Predicted (Teacher's Value Added)
English Language Arts				
All Students	144 (100%)	0.11	0.04	0.07*
Citywide:				
Bottom Third	94 (62.8%)	0.27	0.16	0.10*
Middle Third	39 (29.3%)	-0.13	-0.14	0.01
Top Third	11 (7.9%)	-0.32	-0.37	0.04
School				
Bottom Third	51 (32.5%)	0.39	0.24	0.16*
ELL	-	-	-	-
Special Education	15 (10.1%)	0.19	0.02	0.17
Mathematics				
All Students	152 (100%)	-0.03	-0.09	0.06
Citywide:				
Bottom Third	106 (64.2%)	0.11	0.01	0.10*
Middle Third	37 (28.4%)	-0.33	-0.30	-0.03
Top Third	9 (7.4%)	-0.46	-0.45	-0.02
School				
Bottom Third	48 (25.2%)	0.24	0.14	0.11
ELL	10 (6.8%)	-0.14	0.01	-0.15
Special Education	15 (9.1%)	-0.01	-0.11	0.11

The (*) means that there is a very high probability that the contribution is positive (or negative).

Source: Rockoff, Staiger, Kane and Taylor, 2011

Performance monitoring: Manufacturing



Performance monitoring: Airports

Performance monitoring: Retail banking

Porte A

Data:09/01/2008

1º /11

	Out	Nov	Dez	4Tri	Jan	Fev	Mar	1Tri
● Total Segmentos	61,53	83,64	79,17	73,25	52,27	0,00	0,00	34,37
● Total PF	70,15	76,99	75,13	68,82	42,11	0,00	0,00	26,86
Preferencial	58,09	86,85	86,87	76,92	15,16	0,00	0,00	13,43

Porte A

Data:09/01/2008

1º /11

LUIZ PEDRO BOURSCHEIDT

Rede III

REGIONAL JUNDIAÍ

PV JUNDIAI

PORTE A

INTEGRANTES

SUPER RANKING

TOTAL SEGMENTOS 52,27

PERÍODO

Jan Fev Mar 1Tri

Tri: 10% Jan: 27%

SEGMENTO	PESO	META	REAL	%	PONTOS	OPORT.
Clientes					0,00	0,0
Incr. Base Ativa	0	28	146	150,0	0,00	0,0
Incr. Clientes c/ Ofer...	0	153	0	0,0	0,00	0,0
Abertura Contas PF	0	120	24	11,3	0,00	0,0
Abertura Contas Busine...	0	6	0	0,0	0,00	0,0
Aquisição Com Of. Bási...	0	136	0	0,0	0,00	0,0
Conversão Of. Básica	0	313	1	0,0	0,00	0,0
Vendas					0,00	0,0
Super Auto	0	5	2	40,0	0,00	0,0
Seguro Vida	0	47	26	55,3	0,00	0,0
Seguro Residencial	0	25	8	32,0	0,00	0,0
Seguro Auto	0	6	1	16,7	0,00	0,0
Seguro Vida Master	0	2	0	0,0	0,00	0,0
Cartões	0	140	75	53,6	0,00	0,0
CP Protegido	0	295	70	23,7	0,00	0,0
Capitalização	0	58	6	10,3	0,00	0,0
Novas Cobranças Ativas	0	4	2	50,0	0,00	0,0
Títulos Liquidados	0	5.301	1.815	34,2	0,00	0,0
Captações - Captação Líquida					0,00	0,0
Captação Alvo	0	1.371	1.072	78,2	0,00	0,0
Previdência Foco PF	0	184	599	325,6	0,00	0,0
Captação Demais	0	766	-3.001	-391,8	0,00	0,0
Depósito à Vista / Float					0,00	0,0
DAV / Float	0	100	1.708	999,0	0,00	0,0
Empréstimos - Incr. Saldo Médio					0,00	0,0
Empréstimos Alvo PF	0	543	-118	-21,7	0,00	0,0

Ponderação | Atualização | Analisar | Cara a Cara | Histórico | Métricas | Voltar | Imprimir

SUPER RANKING

18,78	0,00	0,00	18,12
37,11	0,00	0,00	25,07
75,99	**0,00**	**0,00**	**51,89**
47,40	0,00	0,00	41,84
26,08	0,00	0,00	23,13

Voltar | Imprimir

SUPER RANKING

Q15 INCENTIVES - Removing poor performers

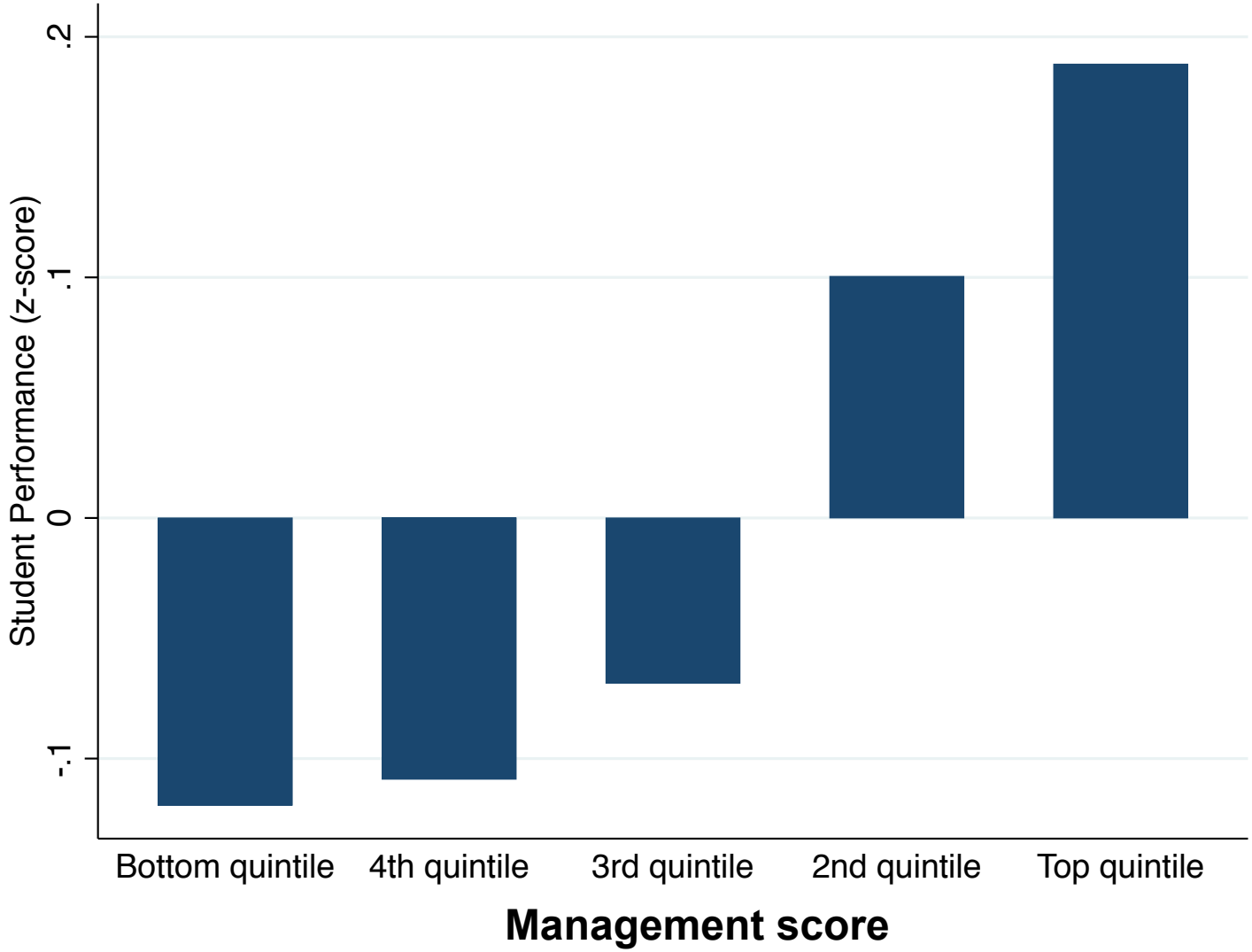
- If you had a teacher who could not do her job adequately, what would you do? Could you give me a recent example?
- How long would underperformance be tolerated? How difficult is it to fire a teacher?
- Do some individuals always just manage to avoid being re-trained/fired?

Score	(1): Poor performance is not addressed or inconsistently addressed. Poor performers are rarely removed from their positions	(3) Poor performance is addressed, but typically through a limited range of methods. Terminating an employee often takes more than a year, and is infrequent	(5): Repeated poor performance is addressed, beginning with targeted interventions. Poor performers are moved out of the school when weaknesses cannot be overcome

Agenda

1. Measuring management practices in education
2. **Describing management across schools**
3. "Drivers" of management practices
4. Next steps

We found good management to be strongly correlated with better school performance



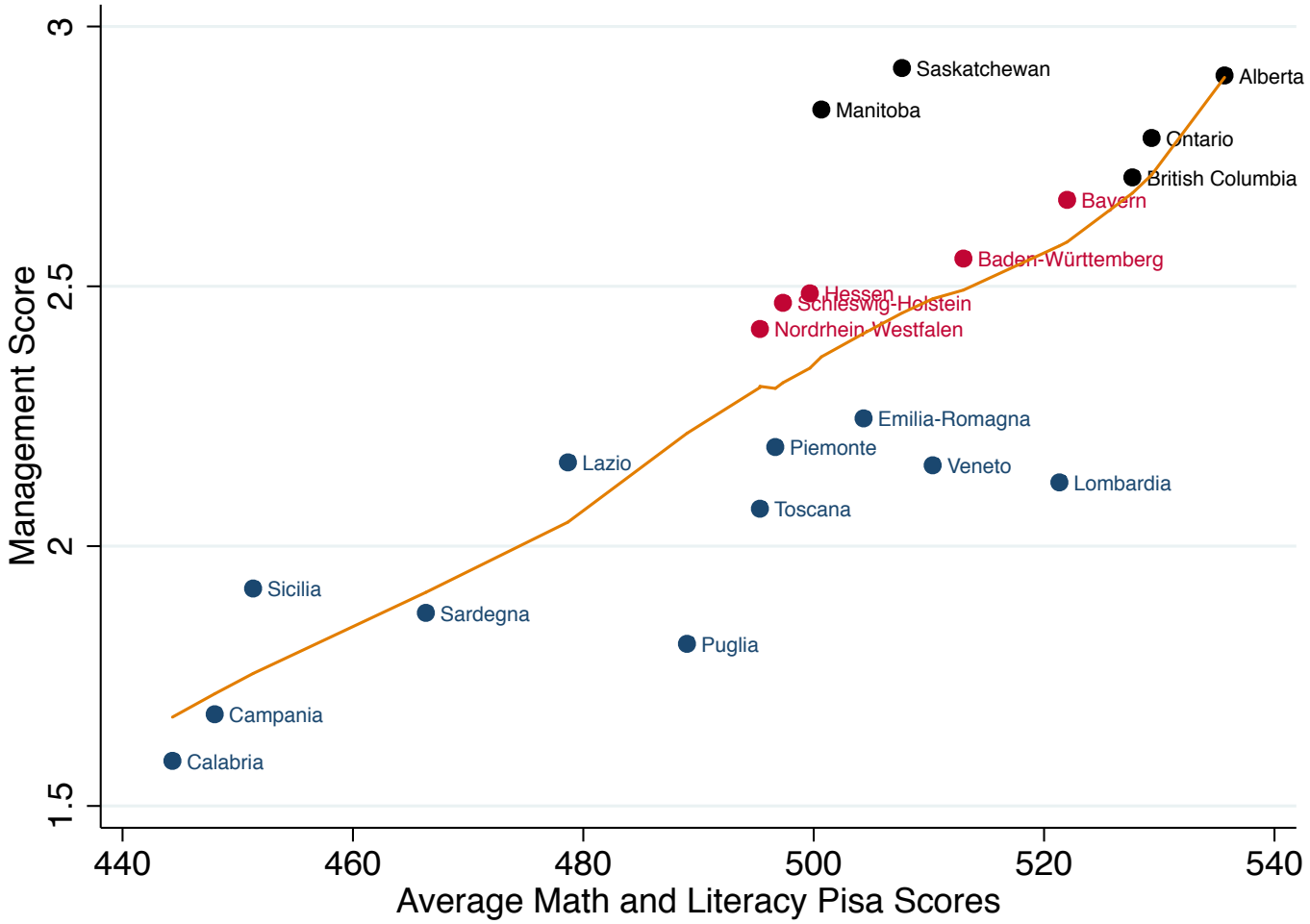
Notes: Graph based on 354 observations with available school performance information (Canada=77; UK=85; US=120; Sweden=72). Schools performance data are zscored within country.

The correlation between management and school performance is robust to the inclusion of a wide range of controls, and similar across subgroups of the management score

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable				School Performance			
Management	0.119**	0.185***					
	(0.054)	(0.060)					
Monitoring			0.071				
			(0.055)				
Targets				0.150**			
				(0.060)			
People					0.175***		
					(0.055)		
Evidence based instruction methods						0.093*	
						(0.055)	
Pseudo-Fryer Index							0.122**
							(0.061)
Observations	354	354	354	354	354	354	354
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	No	Yes	Yes	Yes	Yes	Yes	Yes
School controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Noise controls	No	Yes	Yes	Yes	Yes	Yes	Yes

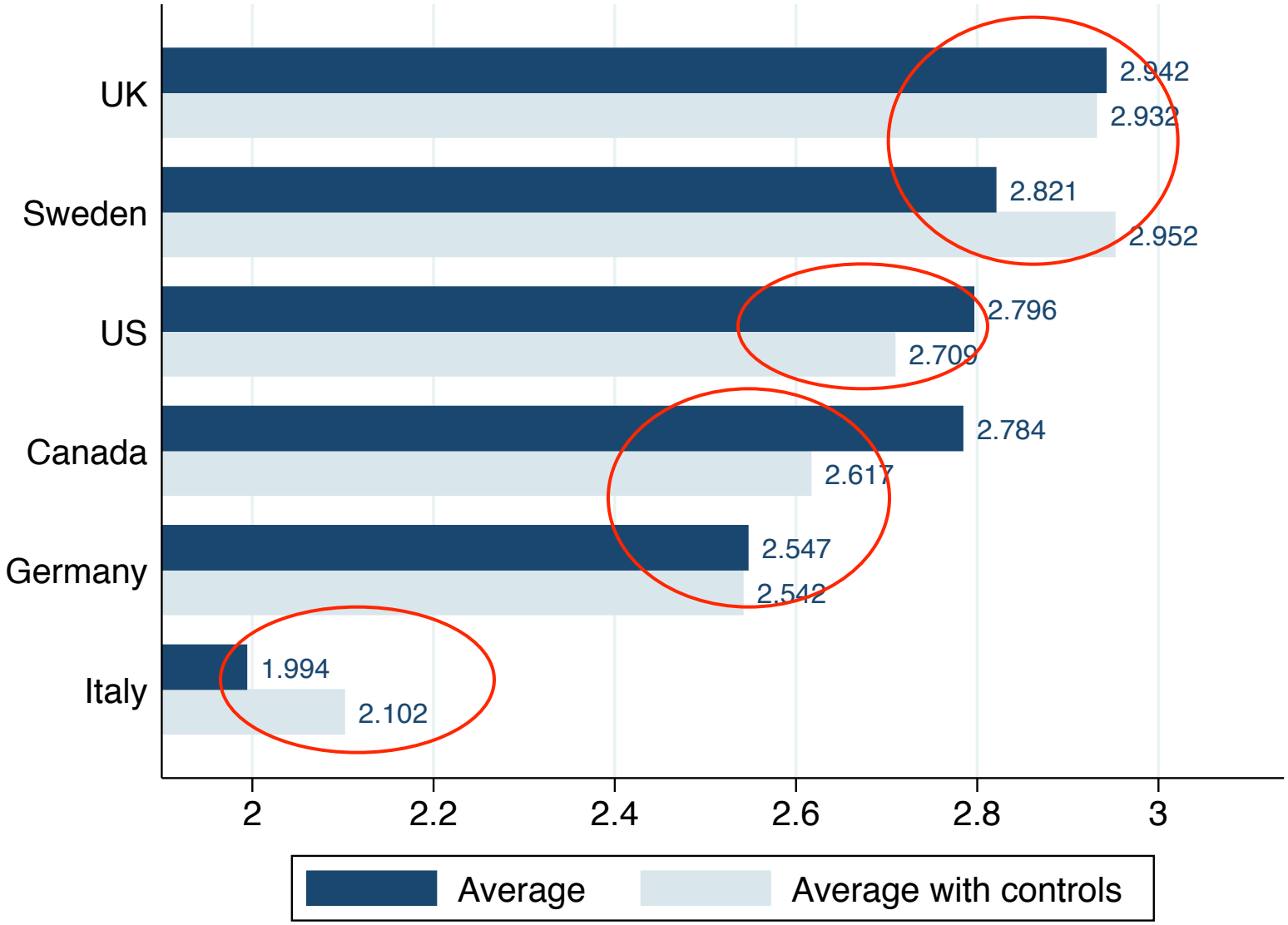
Notes: Graph based on 354 observations with available school performance information (Canada=77; UK=85; US=120; Sweden=72). Schools performance data are zscored within country. School controls include: number of pupils, pupil-teacher ratio, age, ownership, type. Noise controls include: interviewee tenure in post, gender, seniority; interview duration, reliability time, day of the week; analyst dummies. Robust standard errors in parentheses under coefficients.

Management scores by region are correlated with PISA rankings



Notes: Graph based on 512 observations: countries with available regional PISA data, and regions with at least 10 management interviews. (Canada=120 obs, PISA 2009; Germany=106 obs, PISA 2006; Italy=286 obs, PISA 2009).

School management practices vary across countries

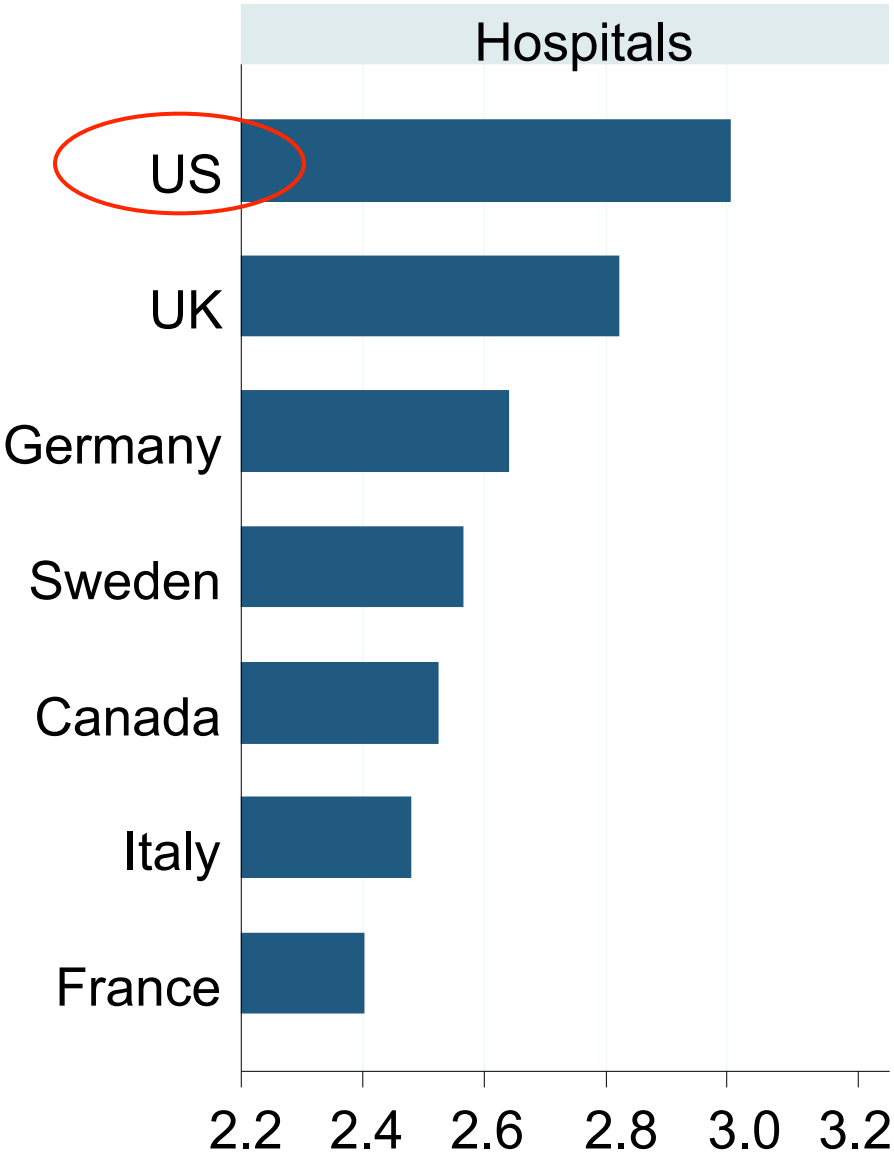


Note: Averages taken across all schools within each country. 988 schools. . School controls include: number of pupils, pupil-teacher ratio, age, ownership, type. Noise controls include: interviewee tenure in post, gender, seniority; interview duration, reliability time, day of the week; analyst dummies

School management rankings differ from other sectors: Manufacturing

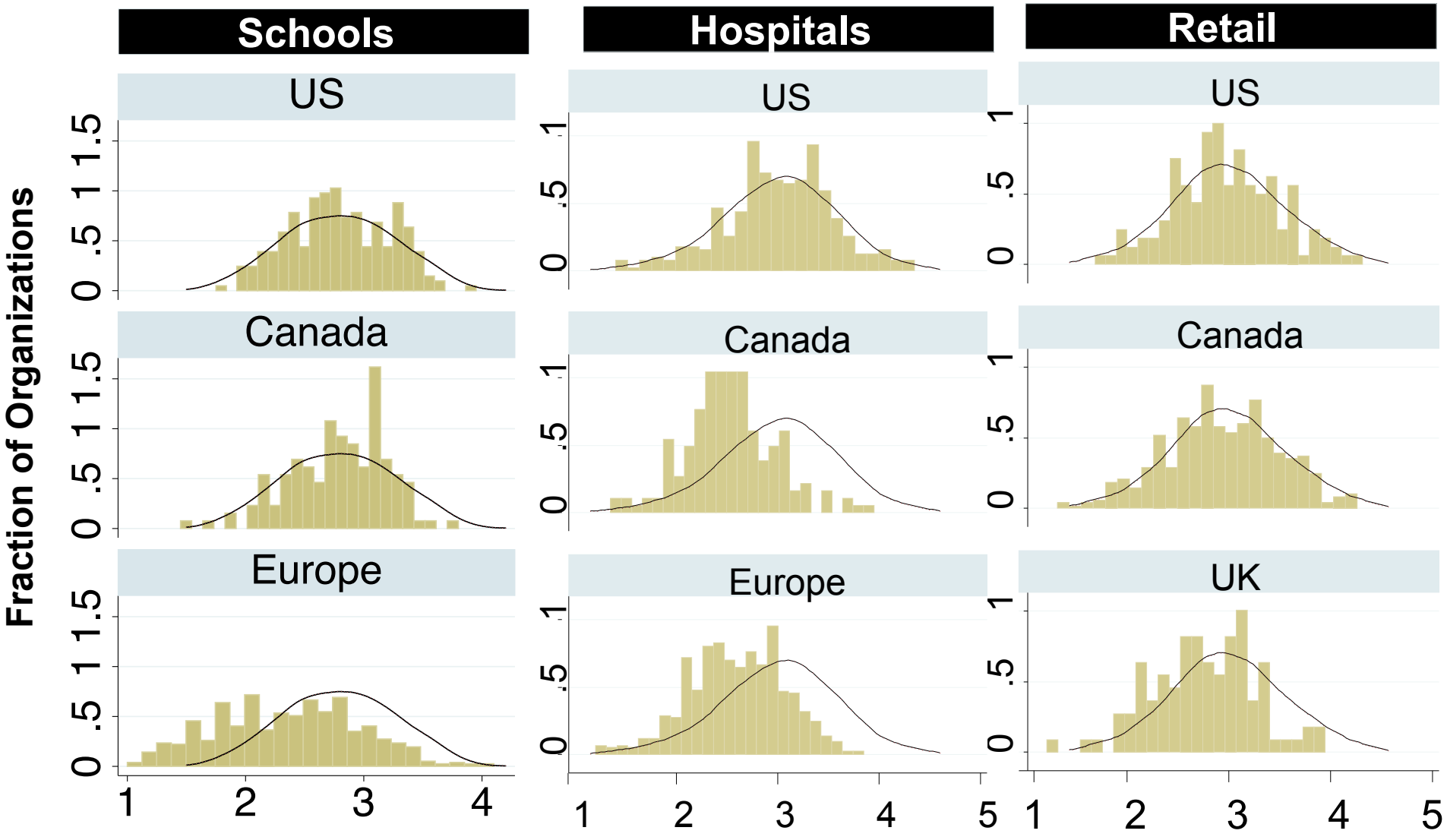
Note: Averages taken across all firms within each country. 9,079 observations in total. Firms per country in the right column

School management rankings differ from other sectors: Healthcare and Retail



Note: Averages taken across all organizations within each country. 1,183 hospitals, 661 retail sites

School management practices show a large spread



Note: Bars are the histogram of the actual density. The line is the smoothed (kernel) of the US density for comparison.

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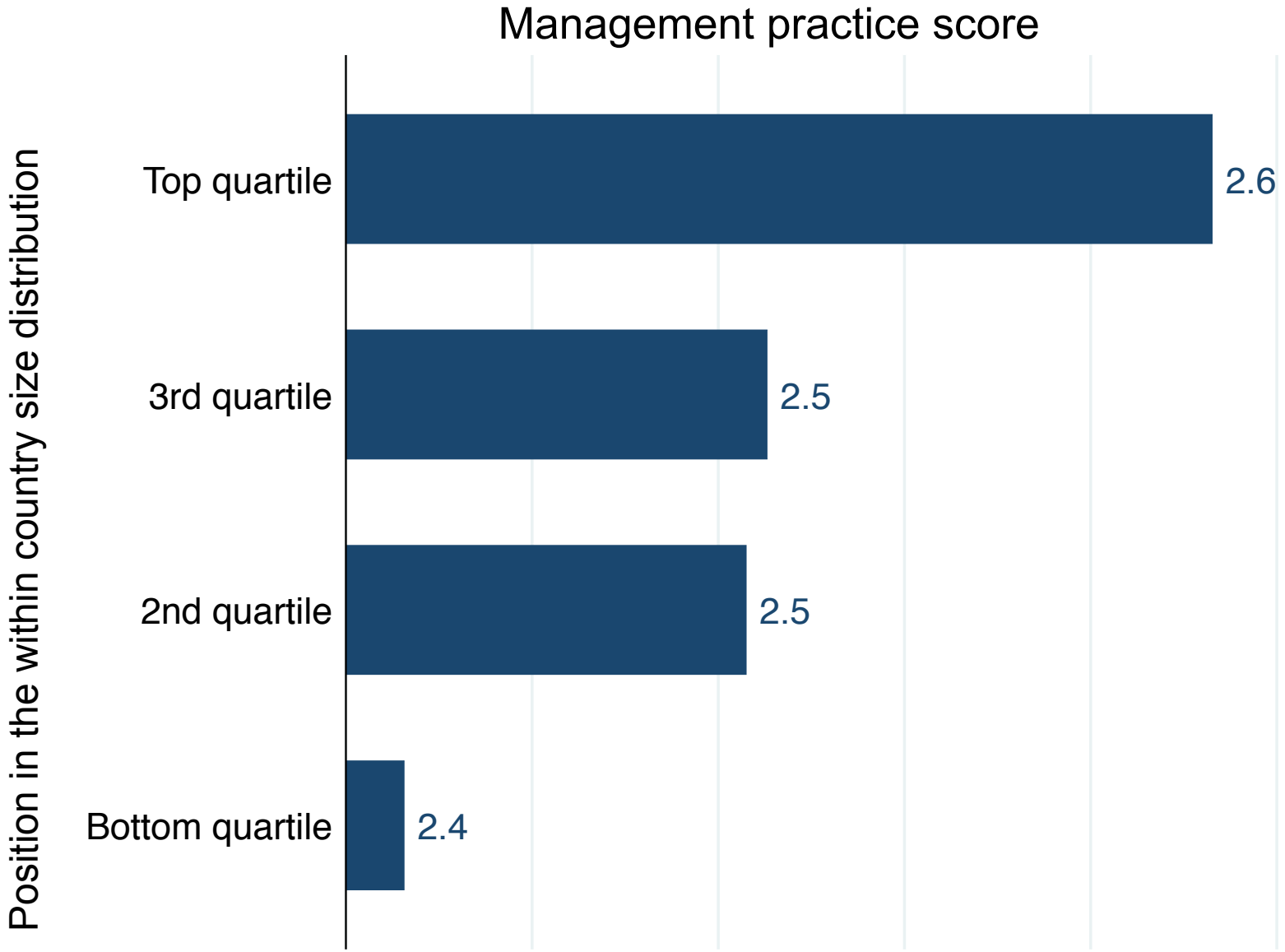
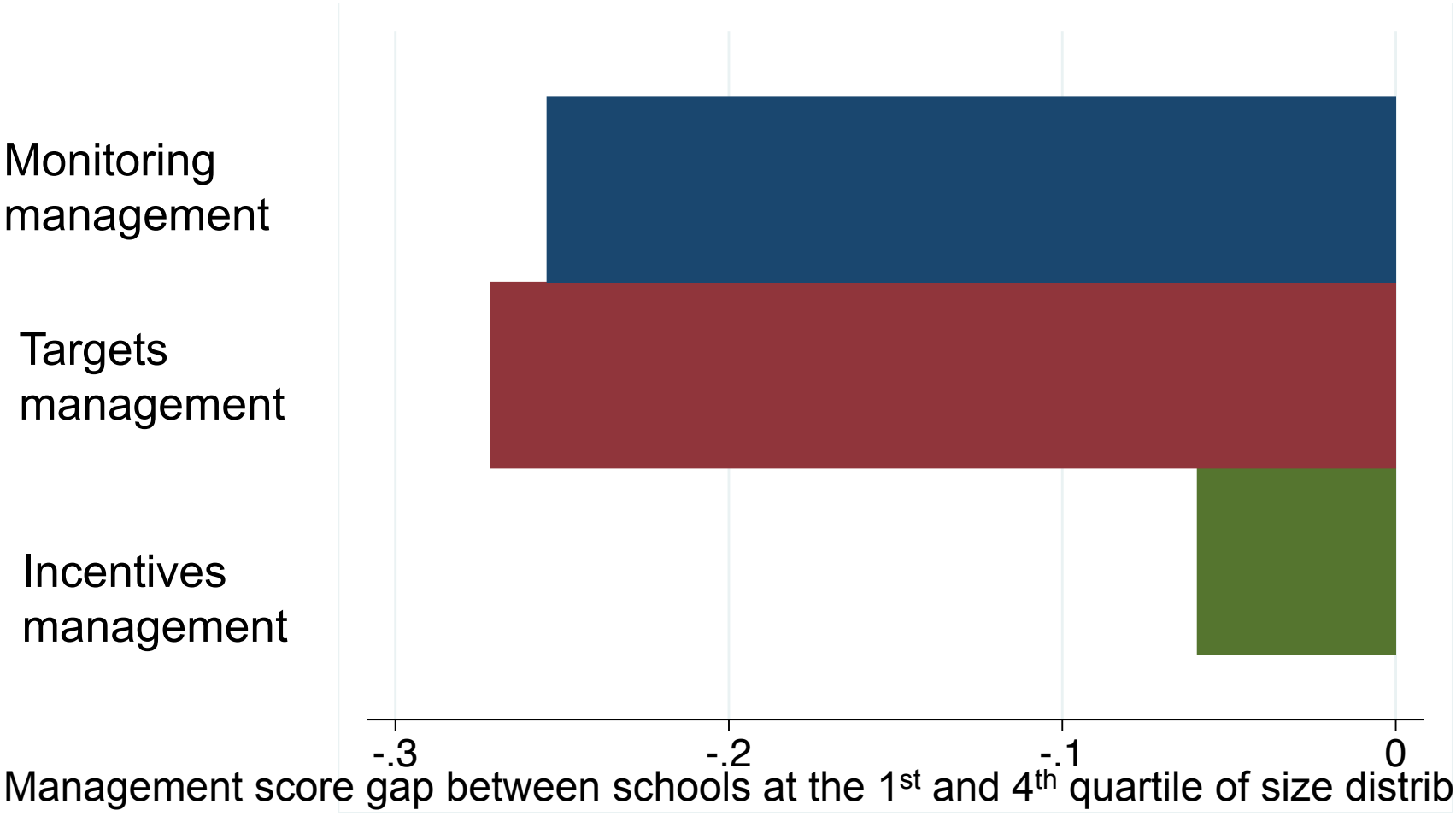
Size: There is a strong relationship between school size and management practice



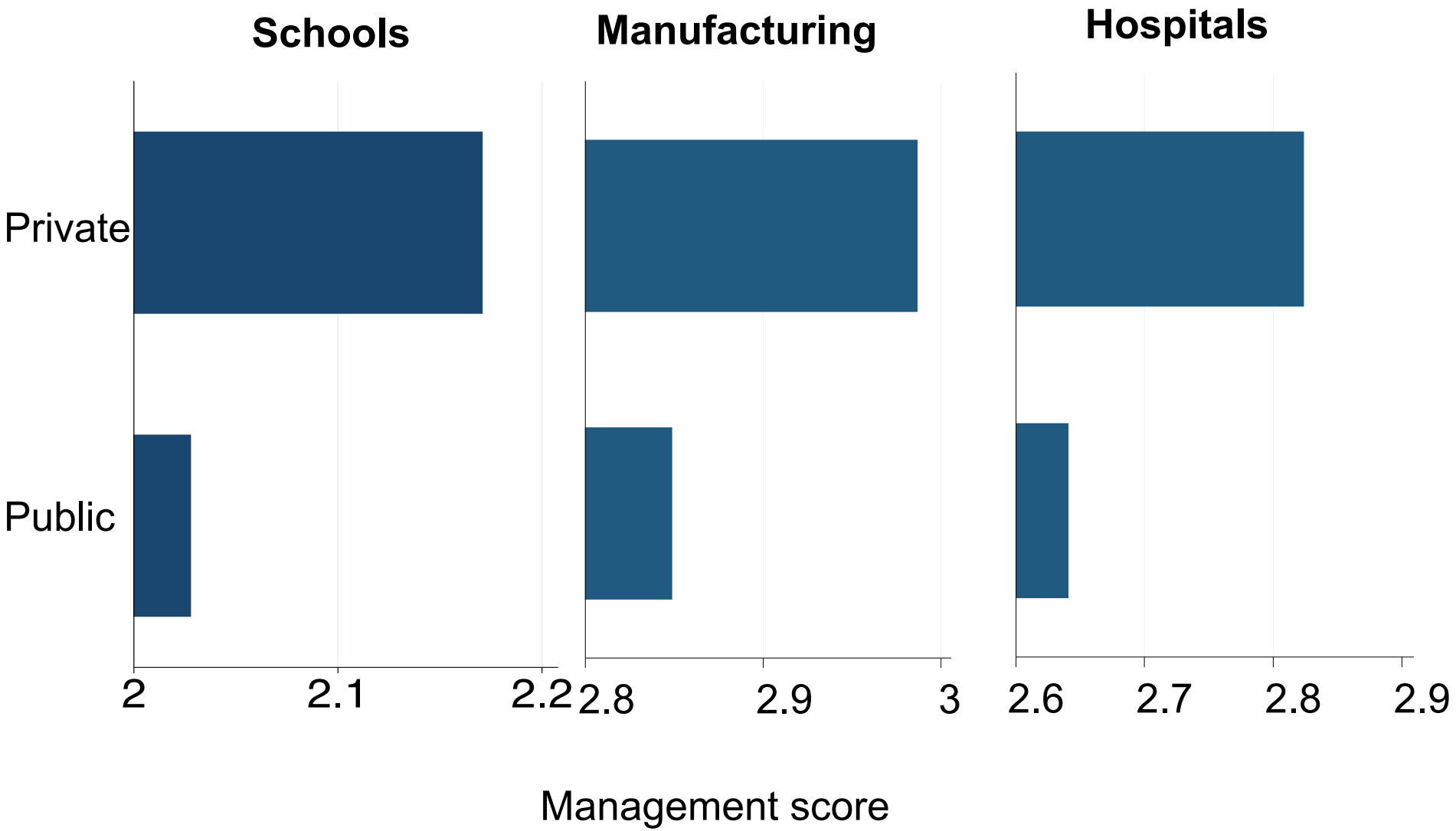
Small schools are characterized by particularly poor monitoring and target management (difference in incentives is insignificant)

Gap between schools in the 1st and the 4th size quartile by sub-components of management



Management scores after controlling for regional dummies. Monitoring is collecting and using data, targets are the setting and effectiveness of targets, and incentives is performance related hiring, promotions, bonus and exit. Data from 988 schools.

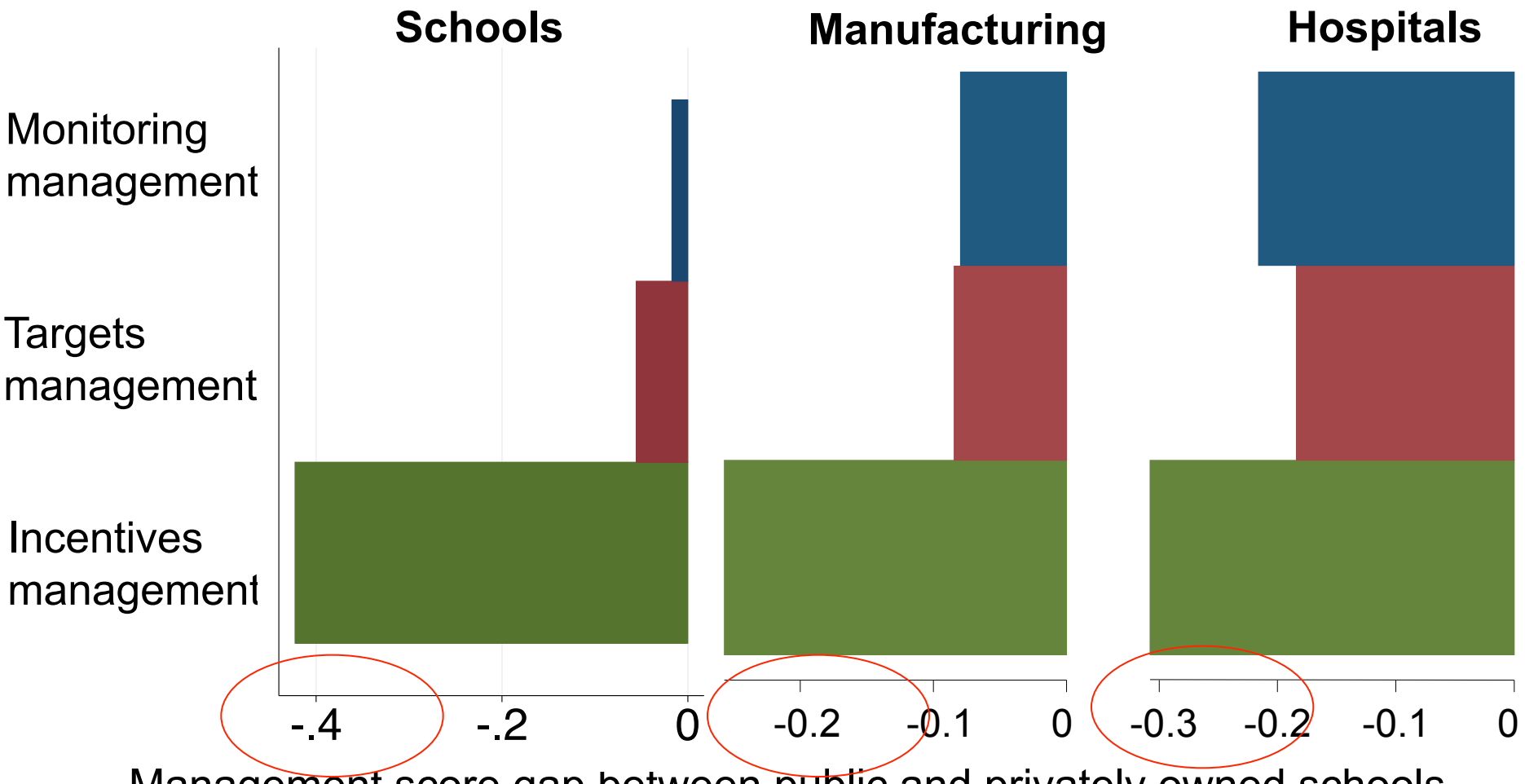
Ownership: government ownership is associated with worse management across every industry we studied



Management scores after controlling for size (number of employees, beds or students) and country. Data from 9079 manufacturing firms, 1,183 hospital and 988 schools. There were no publicly owned retail firms so the comparison is not possible within retail.

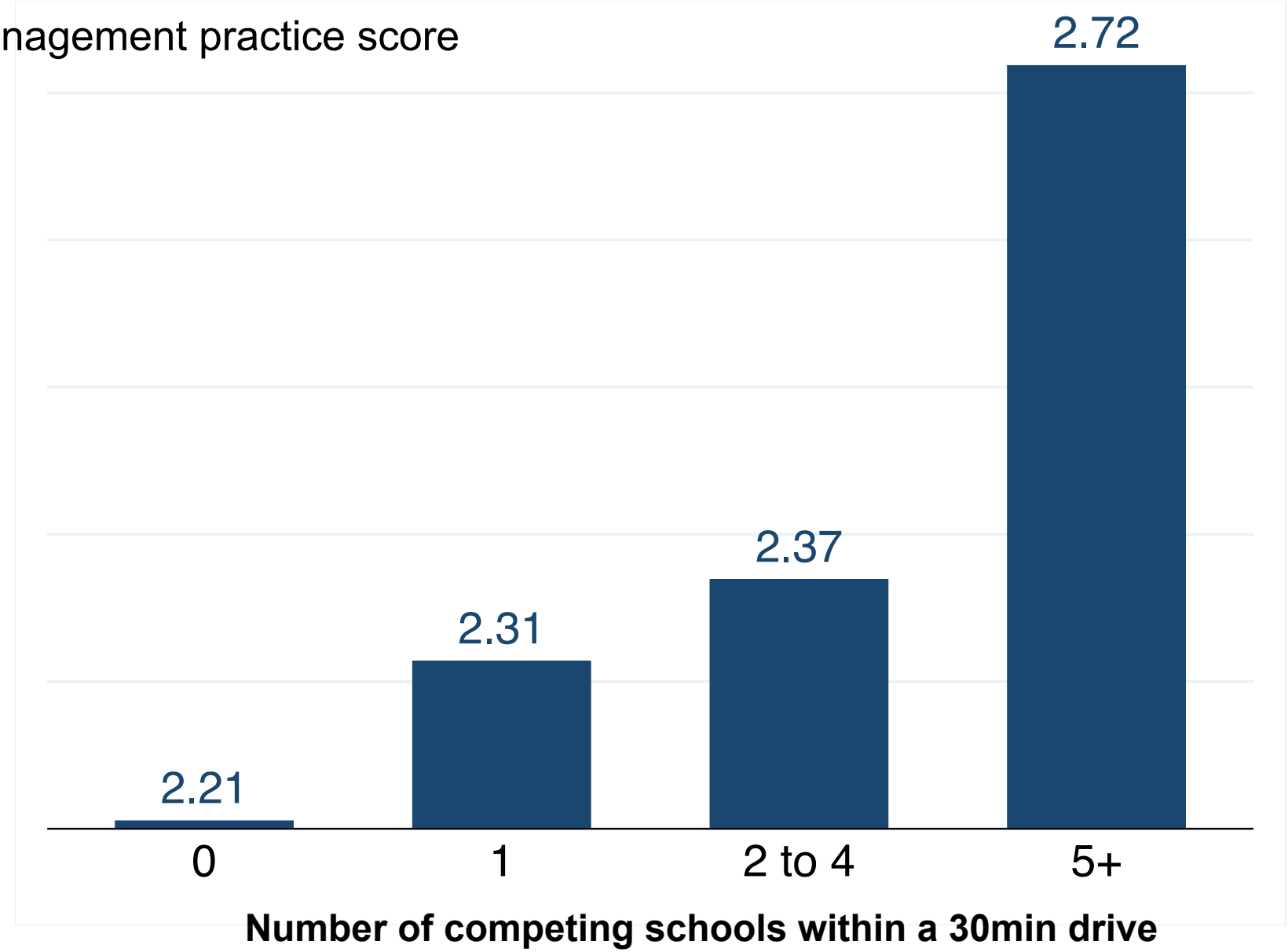
Government ownership is associated with particularly poor incentives management (hiring, firing, pay and promotions)

Gap between public and private ownership by sub-components of management



Management scores after controlling for size (number of employees, beds or students) and country. Monitoring is collecting and using data, targets are the setting and effectiveness of targets, and incentives is performance related hiring, promotions, bonus and exit. Data from 9079 manufacturers, 1,183 hospital and 988 schools.

Competition: this appears to be good for management



[1]As perceived by the Principal

We also looked at Principal characteristics

	Management Score	Monitoring	Targets	Incentives
Experience (tenure in school, tenure in post)	✗	✗	✗	✗
Background (Science vs. Humanities)	✗	✓	✗	✗
Gender (Female)	✓	✗	✓	✓

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Conclusion

- First descriptive evidence on international differences in management in schools

- Patterns remarkably similar to other industries
  - Wide heterogeneity – even within same institutional context
  - Association management-school performance
  - Size, ownership, competition, CEO characteristics correlated with higher management scores

- Next steps
  - Expand sample to developing countries (India, 2012)
  - Move beyond correlations