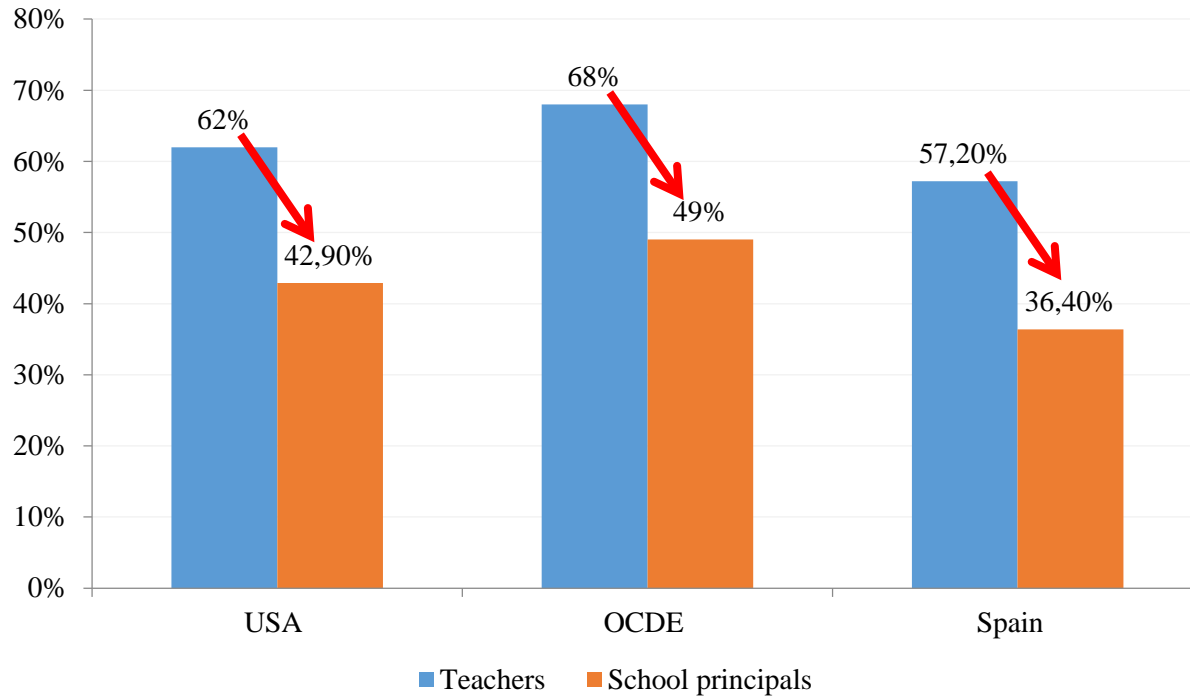# Managing Talent in Schools: When Women Make a Difference

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Introduction

Female distribution of teachers and school principals In High Schools


Fuentes: Ministerio de Educación, Cultura y Deporte (2017)
           OECD (2014)
           UNESCO (2014)

Objectives

- Analyze if the **gender of the principal affects** the **management quality** of the school.

- Study the possible **impact of school, principals, economic area and competition factors** on the relationship between the principal gender and the average management quality, people management, non-people management of the school.

Research questions:

gender ⟶ management quality / people / non-people

school characteristics

principal characteristics

economic area

competition
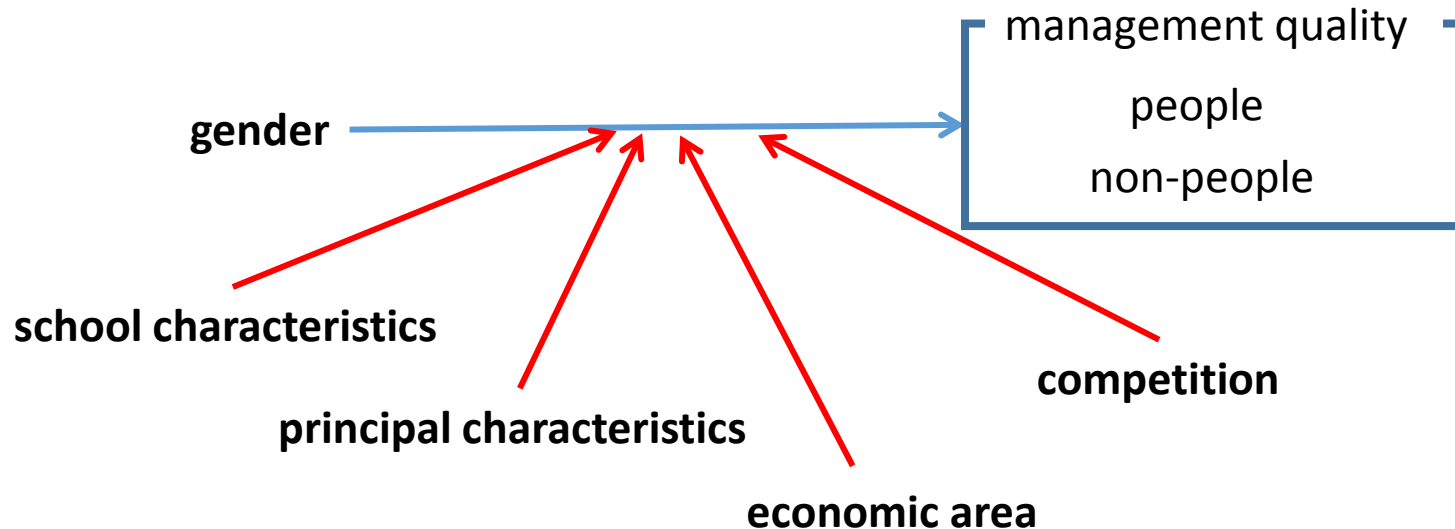
Theoretical background

Social Role Theory: gender-typical roles ascribed to men and women shape both expectations about the appropriate behavior of men vs. women and the beliefs they have about their own talents and skills (Eagly, 1987).

There are differences between the qualities that perceivers associate with women and men (Eagly & Johannesen-Schmidt, 2001):

- **Agentic qualities** (associated to men):
  - speaking assertively,
  - competing for attention,
  - influencing others,
  - initiating activity directed to assigned tasks,
  - making problem-focused suggestions .
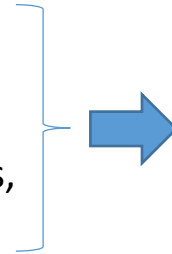
  Typical qualities to succeed as a leader

- **Communal qualities** (associated to women) :
  - speaking tentatively,
  - not drawing attention to oneself,
  - accepting other's direction,
  - supporting and soothing others,
  - contributing to the solution of relational and interpersonal problems.

Misfit between the female gender role and the **leadership role**.

Theoretical background

Gender differences in leadership styles (Bass, 1985):

- **Transactional leaders:** obtain cooperation of follower by establishing economic exchanges process.

- **Transformational leaders:** motivate followers to performance beyond expectations and activate their higher order needs $\Rightarrow$ *Feminine leadership style*.

In organizational literature, transformational leadership tend to be associated to positive outcomes.

There seems to be a **reluctance to allow women ascending** in organizational hierarchies $\Rightarrow$ **skepticism about innovative styles** (such as the transformational leaderhsip) often **linked to women** (Eagly, Johannesen-Schmidt & van Engen , 2003).

Theoretical background

Glass ceiling: there are barriers that prevent women promotion and progression up the corporate hierarchy (Powell and Butterfield, 1994)

There are several types of barriers:
- Taste-based discrimination (Becker, 1957).
- Statistical discrimination (Phelps, 1972)
- Implicit discrimination (Bertrand et al., 2005)
- Mistake-based discrimination (Wolfers, 2006)

Biased evaluations in the context of negligible or no performance

- Double standards of competence (Foschi, 2000): bias affect the assessment of ability that is inferred from performance

The existence of **bias** and **double standards for the evaluation** of men and women produces more highly skilled female than male leaders, because they have to compensate the obstacles they face to arrive to the top position.

Theoretical background:

First objective:

We study if female principals who are typically associated to transformational leadership styles and may face higher obstacles and barriers than their males counterparts, are more likely to produce higher management quality.

Theoretical background

- The essence of **Contingency Theory** is that organizational effectiveness results from fitting characteristics of the organization (i.e., its structure) to three contingency variables: environmental factors, organizational size and organizational strategy (Donalson, 2001).

- Widely used in the study of effectiveness of corporate governance (Aguilera *et al.*, 2008) since 1960's; there are contingency theories of many different organizational characteristics:
  - leadership (Fiedler, 1967)
  - human resource management (Derely and Doty, 1996)
  - strategic decision-making processes (Frederickson, 1984).

Far from universalistic theories of organization, Contingency Theory asserts that there is no "one best way" to organize, meaning that the same leadership style or behaviour can be efective in one situation and ineffective in another.

Theoretical background:

Second objective:

We test if the impact of female principals on the management quality, depends on:

- – school characteristics (size and type of school, pupil/ teacher ratio)
- – principal characteristics (tenure and background)
- – economic area (OECD *vs.* non-OECD countries)
- – Number of competitors.

Methodology: World Management Survey

The World Management Survey is the first cross-country, cross-industry dataset built to measure the quality of management practices in establishments.

- **Industries**:
    - Manufacturing & General
    - Healthcare
    - **Education**
    - Retail
- **Proyect partners**:
    - World Bank & CEP-LSE (R. Lemos)
    - University of Oxford (D. Scur)
    - Stanford University (N. Bloom)
    - Harvard Business School (R. Sadun)
    - MIT (J. van Reenen)
- **Funders**:
    - Advanced Institute of Management Research (UK)
    - The Stanford Institute for Economic and Policy Research
    - Economic and Social Research Council (UK)
    - National Science Foundation (US)
    - World Bank,...

Methodology: World Management Survey

Some academic papers that use WMS data:

- Bloom, N., Lemos, R., Sadun, R., Scur, D., & Van Reenen, J. (2016). Private Data International Data on Measuring Management Practices. *The American Economic Review*, 106(5), 152-156.
- Bloom, N., Lemos, R., Sadun, R., & Van Reenen, J. (2015). Does management matter in schools?. *The Economic Journal*, *125*(584), 647-674.
- Bloom, N., Sadun, R., & Van Reenen, J. (2015). Do Private Equity Owned Firms Have Better Management Practices?. *The American Economic Review*, 105(5), 442-446.
- Bloom, N., Genakos, C., Sadun, R., & Van Reenen, J. (2012). Management practices across firms and countries. *The Academy of Management Perspectives*, *26*(1), 12-33.
- Bloom, N., Sadun, R., & Van Reenen, J. (2012). The organization of firms across countries. *The quarterly journal of economics*, 127(4), 1663-1705.
- Bloom, N., Kretschmer, T., & Van Reenen, J. (2011). Are family-friendly workplace practices a valuable firm resource?. *Strategic Management Journal*, 32(4), 343-367.

Methodology: Sample and data

Data from the World Management Survey Sample consist of:

- Data from over 1.800 high schools (with at least 50 pupils, >15 years old)

- In 8 countries: UK, USA, Sweden, Canada, Germany, Italy, Brazil and India.

- 3 types of schools:
    - regular government schools
    - autonomous government schools
    - private schools
- Response rate 41% on average.

- Telephone inteviews with school principals:
    - Interviewers were rigorously trained.
    - "Double blind" interview technique.
    - 69% interviews "doubled scored".

Final Sample: over 1,800 schools

Methodology: Sample and data

- Survey sections:

    1. Management:
        - Operations: measures teaching methods.
        - Monitoring: measures how school performance is tracked.
        - Target setting: measures how goals are set and if they are appropriate.
        - People management: measures how school deals with employees.
    2. Leadership
    3. Organization
    4. Ownership
    5. Human resources

- Open ended questions in a scoring grid from 1 to 5.

Methodology: Descriptive analysis

	FEMALE PRINCIPAL					MALE PRINCIPAL				
	N	Mínimo	Máximo	Media	Desviación estándar	N	Mínimo	Máximo	Media	Desviación estándar
MANAGEMENT: Average Management Score	762	1,00	4,15	2,23	0,59	974,00	1,00	3,95	2,29	0,63
SCHOOL: Log of number of students	762	2,30	8,51	6,40	0,87	974,00	3,37	8,58	6,29	0,88
SCHOOL: Pupil/Teacher Ratio	762	0,84	5,24	2,65	0,54	974,00	0,01	5,18	2,64	0,56
SCHOOL: Share of private schools	762	0,00	1,00	0,29	0,45	974,00	0,00	1,00	0,24	0,42
SCHOOL: Share of autonomous government schools	762	0,00	1,00	0,07	0,25	974,00	0,00	1,00	0,07	0,26
SCHOOL: Share of regular government schools	762	0,00	1,00	0,64	0,48	974,00	0,00	1,00	0,69	0,46
SCHOOL: Share of schools with student selection based on academics	635	0	1	0,23	0,419	687	0	1	0,24	0,429
PRINCIPAL: Number of years in post(tenure)	761	1,00	46,00	6,64	6,34	974,00	1,00	52,00	6,52	6,17
PRINCIPAL: =1 if Principal confirmed to have a STEMB Degree	762	0,00	1,00	0,22	0,41	974,00	0,00	1,00	0,35	0,48
Number of competitors	758	0	300	7,54	15,621	971	0	1000	11,29	36,096
GEOGRAPHIC: Total population density (people/km2)	739	0,00	56348,08	809,36	3715,31	915,00	0,00	26626,76	602,75	2021,91
OECD	762	0,00	1,00	0,42	0,49	974,00	0,00	1,00	0,66	0,48
N válido (por lista)	762					974,00				

Methodology: Factor Analysis

➢ **Exploratory Factor Analysis** (EFA): was conducted on the 20basic management practice measures of the WMS to break them into its management subcomponents (factors).

	Component 1	Component 2
Review of Performance	.779	.208
Performance Tracking	.773	.193
Performance Dialogue	.760	.263
Type of Targets	.739	.235
Time Horizon	.705	.320
Continuous Improvement	.705	.298
Interconnection of Goals	.701	.321
Data driven planning and student transition	.693	.301
Goals are Stretching	.685	.348
Adopting educational best practices	.673	.316
Standardization of instructional processes	.617	.182
Personalization of instruction and learning	.616	.407
Consequence Management	.610	.396
Clarity of Goals	.562	.465
Instilling a talent mindset	.265	.729
Retaining Talent	.092	.715
Developing Talent	.308	.685
Making room for Talent	.280	.658
Distinctive Employee Value	.504	.592
Incentives and Appraisals	.308	.549

The questions that cluster on component 1 measure the *Management factor:*

operations, monitoring and target setting

The questions that cluster on component 2 measure the *Talent factor:*

hiring, firing, pay and promotions

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Measures

Dependent variables:

- Average management score
- Management factor
- Talent factor

Explanatory variables:

- Principal gender (Female)
- Principal tenure (years)
- Principal has STEM background
- Private school
- Competition
- Log (pupils)
- Log (pupils/teachers)
- OECD countries
- Interactions: Female x Explanatory variable

Control variables:

- Student selection based on academic merit
- Population density (people/km2)
- Country
- Noise: interviewer

Results on Average Management

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.078***	0.052*	0.074***	0.130***	0.092***	0.355**	0.178	0.043
	[0.023]	[0.029]	[0.023]	[0.045]	[0.027]	[0.166]	[0.110]	[0.034]
PRINCIPAL tenure	-0.002	-0.004*	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]	[0.002]
PRINCIPAL STEMB Degree	0.043*	0.044*	0.044*	0.044*	0.062**	0.042*	0.043*	0.040*
	[0.023]	[0.023]	[0.023]	[0.023]	[0.029]	[0.023]	[0.023]	[0.023]
School with student selection based on academics	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Log of number of students in school	0.117***	0.117***	0.117***	0.117***	0.117***	0.138***	0.118***	0.118***
	[0.018]	[0.018]	[0.018]	[0.018]	[0.018]	[0.022]	[0.018]	[0.018]
Pupil/Teacher Ratio	-0.114***	-0.113***	-0.114***	-0.115***	-0.114***	-0.116***	-0.098***	-0.118***
	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]	[0.034]	[0.038]	[0.034]
COMPETITORS (ln)	0.017	0.018	0.017	0.030*	0.018	0.018	0.018	0.018
	[0.012]	[0.012]	[0.012]	[0.015]	[0.012]	[0.012]	[0.012]	[0.012]
Private school	0.180***	0.179***	0.142	0.183***	0.179***	0.177***	0.178***	0.178***
	[0.055]	[0.055]	[0.096]	[0.055]	[0.055]	[0.055]	[0.055]	[0.055]
Autonomous government school	0.164***	0.165***	0.164***	0.164***	0.164***	0.165***	0.165***	0.164***
	[0.033]	[0.033]	[0.033]	[0.033]	[0.033]	[0.033]	[0.033]	[0.033]
Log of total population density (people/km2)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
female_tenure		0.004						
		[0.003]						
female_private			0.060					
			[0.111]					
female_competition				-0.030				
				[0.022]				
female_stemb					-0.048			
					[0.049]			
female_size						-0.044*		
						[0.026]		
female_pupteach							-0.038	
							[0.039]	
female_ocde								0.065
								[0.046]
Constant	1.531***	1.540***	1.534***	1.517***	1.537***	1.385***	1.482***	1.522***
	[0.332]	[0.334]	[0.333]	[0.324]	[0.334]	[0.337]	[0.329]	[0.327]
Observations	1,729	1,729	1,729	1,729	1,729	1,729	1,729	1,729
R-squared	0.610	0.610	0.610	0.610	0.610	0.611	0.610	0.610
Interviewer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Female principals are associated with higher management scores.

This effect does not depend on school, principal, geographic factors or competition

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Results on Management factor

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.132***	0.132**	0.141***	0.160*	0.126**	0.349	0.232	0.072
	[0.044]	[0.055]	[0.045]	[0.087]	[0.053]	[0.309]	[0.200]	[0.064
PRINCIPAL tenure	-0.007**	-0.007	-0.007**	-0.007**	-0.007**	-0.007**	-0.007**	-0.007
	[0.003]	[0.004]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003]	[0.003
PRINCIPAL STEMB Degree	0.082*	0.082*	0.081*	0.082*	0.074	0.081*	0.081*	0.075
	[0.044]	[0.044]	[0.044]	[0.044]	[0.054]	[0.044]	[0.044]	[0.044
School with student selection based on academics	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001
Log of number of students in school	0.162***	0.162***	0.163***	0.162***	0.162***	0.179***	0.163***	0.164*
	[0.033]	[0.033]	[0.033]	[0.033]	[0.033]	[0.039]	[0.033]	[0.033
SCHOOL: Pupil/Teacher Ratio	-0.089	-0.089	-0.089	-0.090	-0.089	-0.091	-0.074	-0.096
	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]	[0.072]	[0.065
COMPETITORS (ln)	0.031	0.031	0.031	0.038	0.031	0.031	0.031	0.032
	[0.024]	[0.025]	[0.024]	[0.029]	[0.025]	[0.024]	[0.024]	[0.024
Private school	-0.417***	-0.417***	-0.339**	-0.414***	-0.416***	-0.418***	-0.418***	-0.418*
	[0.094]	[0.094]	[0.149]	[0.094]	[0.094]	[0.095]	[0.094]	[0.094
Autonomous government school	-0.156***	-0.156***	-0.154***	-0.156***	-0.155***	-0.155***	-0.155***	-0.155*
	[0.059]	[0.059]	[0.059]	[0.059]	[0.059]	[0.059]	[0.059]	[0.059
Log of total population density (people/km2)	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001
female_tenure		-0.000						
		[0.006]						
female_private			-0.124					
			[0.174]					
female_competition				-0.016				
				[0.043]				
female_stemb					0.022			
					[0.094]			
female_size						-0.034		
						[0.048]		
female_pupteach							-0.038	
							[0.072]	
female_ocde								0.112
								[0.087]
Constant	-1.473	-1.473	-1.481	-1.480	-1.476	-1.587	-1.522	-1.488
	[0.402]	[0.403]	[0.401]	[0.398]	[0.401]	[0.421]	[0.403]	[0.394
Observations	1,724	1,724	1,724	1,724	1,724	1,724	1,724	1,724
R-squared	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470
Interviewer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Female principals are associated with higher scores on operations, monitoring and target setting.

This effect does not depend on school, principal, geographic factors or competition

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Results on Talent factor

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.040	-0.032	0.016	0.149**	0.089*	0.550*	0.174	0.020
	[0.040]	[0.055]	[0.040]	[0.074]	[0.047]	[0.309]	[0.188]	[0.057]
PRINCIPAL tenure	0.004	-0.002	0.004	0.003	0.003	0.003	0.004	0.004
	[0.004]	[0.005]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]	[0.004]
PRINCIPAL STEMB Degree	0.003	0.005	0.006	0.004	0.067	0.000	0.002	0.000
	[0.041]	[0.041]	[0.041]	[0.041]	[0.053]	[0.041]	[0.041]	[0.041]
school with student selection based on academics	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Log of number of students	0.105***	0.106***	0.104***	0.106***	0.105***	0.145***	0.107***	0.106***
	[0.032]	[0.032]	[0.031]	[0.032]	[0.032]	[0.039]	[0.032]	[0.032]
Pupil/Teacher Ratio	-0.193***	-0.192***	-0.193***	-0.196***	-0.193***	-0.198***	-0.173**	-0.195***
	[0.062]	[0.062]	[0.061]	[0.062]	[0.062]	[0.062]	[0.070]	[0.062]
COMPETITORS (ln)	0.006	0.008	0.006	0.032	0.007	0.006	0.006	0.006
	[0.023]	[0.023]	[0.023]	[0.028]	[0.023]	[0.023]	[0.023]	[0.023]
Private school	1.089***	1.087***	0.881***	1.097***	1.087***	1.085***	1.087***	1.088***
	[0.103]	[0.103]	[0.159]	[0.103]	[0.103]	[0.103]	[0.103]	[0.103]
Autonomous government school	0.687***	0.689***	0.684***	0.686***	0.687***	0.689***	0.688***	0.687***
	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]	[0.065]
Log of total population density (people/km2)	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
female_tenure		0.011*						
		[0.006]						
female_private			0.332*					
			[0.190]					
female_competition				-0.063*				
				[0.037]				
female_stemb					-0.170*			
					[0.087]			
female_size						-0.080*		
						[0.048]		
female_pupteach							-0.051	
							[0.068]	
female_ocde								0.037
								[0.079]
Constant	-0.054	-0.029	-0.033	-0.083	-0.031	-0.323	-0.119	-0.059
	[0.434]	[0.438]	[0.438]	[0.423]	[0.441]	[0.458]	[0.440]	[0.432]
Observations	1,724	1,724	1,724	1,724	1,724	1,724	1,724	1,724
R-squared	0.534	0.535	0.535	0.534	0.535	0.535	0.534	0.534
Interviewer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Female principals are not directly associated with higher talent management scores.

There are positive effects for the interactions of female principal with:
- Experience
- Private schools
- Small schools
- Non STEMB
- Low competition

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Conclusions:

- Women principals are associated with higher mangament scores and this association does not dependen on principal, school, or geographic caracteristics.

- Women principals are not directly associated with higher talent mangament scores.

- Female principals make a difference on talent management when:
  - they have experience
  - they work in small schools
  - They run private schools
  - they have a liberal art background
  - The school has low competition

Discussion:

- Despite of being better managers women are still underrepresented in leadership positions on schools, this could be a reflection of:

  - reluctance to change managerial styles.

  - glass ceiling that hinder women's ascent in school hierarchies $\Rightarrow$ Ensuring that woman have equal access to leadership roles would produce not only better fairness but better managed schools.

- It appears that female principals are better managing talent under certain conditions that are more favorable (small, private schools, higher tenure) to manage people and to engage with the school team.

Limitations

- The sample availability (only 8 countries, anonymized data, impossibility to merge variables with other data bases, …).

- Cross sectional data: we can infer associations but not causality.

- We can not disentangling the ultimate cause that explain the female higher management quality:
  - glass-ceiling (double standard).
  - women's advantages in leadership style.

Future research directions

- Additional primary research is needed to clarify/ complement the study (in-depth interviews, focus groups)…
- To extend the study to others countries to test if it is a global phenomenon.
- Analyze the effect of gender principal on pupil performance.
- Getting longitudinal data in order to infer causality.

Managing Talent in Schools: When Women Make a Difference

Thank you for your attention!

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