



SPEARS

SCHOOL OF BUSINESS

Do Salaries Affect Retention of Teachers in Public Schools

by

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Public Concerns

- Long-standing public concerns about low teacher pay and student performance
- Great Recession in the U.S. aggravated the problem of educational funding in many states
 - In at least 35 states inflation-adjusted funding per student was below pre-recession levels in 2013-2014 school year
- Concerns of low teacher pay were heightened by the spending declines

Oklahoma's Status

- 2007- 2013, the sixth largest growth in personal income in the nation
- 2008- 2014 school year, the largest decline in inflation-adjusted funding per student at nearly 23%
- 2012- 2013 school year, teacher pay ranked 49th in the country and lowest in the seven state region (National Center for Education and Statistics)
- Widespread teacher shortages

Explanations of teacher salary differences

- A number of studies confirm the concerns with low teacher pay, teacher quality and student outcomes
- Explanations of teacher salary differences:
 - Differences in teacher characteristics
 - Having a lower cost of living
 - Wages in general are lower in the state
 - Differences in area amenities

Public School Teacher Salary Rankings

- Construct an updated, improved state ranking of teacher salaries across 48 states (HI and AK are excluded)

Ranks	Teacher Inc Nominal (1)
1	NY
2	NJ
3	CA
4	CT
5	RI
44	MT
45	MS
46	ND
47	OK
48	SD

Teachers:

College educated elementary and secondary school teachers employed by state and local governments.

Data:

American Community Survey from 2009-2011, using the question on teachers' wage income.

Public School Teacher Salary Rankings continued)

➤ Characteristic-adjusted baseline teacher salaries

Ranks	Teacher Inc.	Char. Adj.
	Nominal (1)	Nominal (2)
1	NY	NJ
2	NJ	CA
3	CA	RI
4	CT	NY
5	RI	MD
44	MT	WV
45	MS	MT
46	ND	MS
47	OK	OK
48	SD	SD
corr. col. (1)	1.000	0.982

Teacher Characteristics:

age, education level at least master's level, hours per week and weeks per year worked, race, marriage status, having a child, having a child below age of 5, speak English at home, low level of English proficiency and working as a secondary school teacher

Public School Teacher Salary Rankings continued)

➤ Cost-of-living adjusted teacher salaries

Ranks	Teacher Inc. Nominal (1)	Char. Adj. Nominal (2)	COL Adj. RPPs (3)
1	NY	NJ	RI
2	NJ	CA	MI
3	CA	RI	OH
4	CT	NY	NJ
5	RI	MD	CA
44	MT	WV	AZ
45	MS	MT	OK
46	ND	MS	SD
47	OK	OK	MT
48	SD	SD	VT
corr. col. (1)	1.000	0.982	0.832

Cost-of-living index:
Regional Price Parities
(RPPs) from U.S.
Bureau of Economic
Analysis at the state
level

Public School Teacher Salary Rankings continued)

➤ Amenity-adjusted teacher salaries

Differences in net after federal tax wages of teachers relative to non-teachers in the state

Ranks	Teacher Inc. Nominal (1)	Char. Adj. Nominal (2)	COL Adj. RPPs (3)	Amenity Adj. w. Ind. & Occ. (4)
1	NY	NJ	RI	WY
2	NJ	CA	MI	MI
3	CA	RI	OH	RI
4	CT	NY	NJ	PA
5	RI	MD	CA	DE
44	MT	WV	AZ	NC
45	MS	MT	OK	NM
46	ND	MS	SD	CO
47	OK	OK	MT	AZ
48	SD	SD	VT	VA
corr. col. (1)	1.000	0.982	0.832	0.405

Public School Teacher Salary Rankings continued)

➤ Ranks of Oklahoma and surrounding states

State	Teacher Inc. Nominal (1)	Char. Adj. Nominal (2)	COL Adj. RPPs (3)	Amenity Adj. w. Ind. & Occ. (4)
Oklahoma	47	47	45	40
Colorado	24	29	43	46
Missouri	39	40	30	39
New Mexico	34	37	40	45
Texas	25	20	21	43
Arkansas	36	35	26	25
Kansas	37	38	33	37

Public School Teacher Salary Rankings continued)

- The relative rankings of state teacher salaries have been highly persistent over time (at least three decades) in comparing our rankings with previous studies (correlations between 0.77 and 0.89)
- Sixty percent of teachers lived in state of birth at the time of the ACS survey
- So, we examine whether the fully-adjusted salaries affect the probability someone who graduated with a major in education was still teaching at the time of the survey

Salary Impacts on Teachers' Retention

- Examine the impact of relative teacher salaries on the probability of teaching for education majors by age range
 - Find that a higher teacher salary increases the probability of college graduates who majored in education and are between 30 to 59 years old to remain in teaching
 - It primarily occurs for the 40 to 49 and 50 to 59 year old age groups

Salary Impacts on Teachers' Retention continued)

- Examine the effects of relative teacher salaries on the probability of teaching for different education groups
 - Salary has a positive impact on general education major college graduates
 - Relative higher salaries have positive impacts on females who majored in elementary education
 - Higher salary positively affects males who majored in math, science and computer education and all other education fields to stay in teaching

Oklahoma's Salary Effect on Retention

- Relative to average across states, Oklahoma's lower teacher salary reduces the probability an education major stays in teaching by 4 percentage points
- For math, science and computer education majors, it reduces the probability by 14 percentage points

Conclusions

- Anyway you compare salaries across states, Oklahoma is near the bottom
- Has significant consequences for retention of teachers
- We did not address quality in our research; likely lower quality of teachers with lower pay in addition to reduced teacher numbers
- Reduces economic competitiveness of the state: lower educational outcomes and less of a magnet for educated workers

The End

Thank you !