A PERFECT STORM:
A CASE STUDY OF WISCONSIN’S RURAL SCHOOLS

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Presented by:
Sarah Kemp, Researcher
University of Wisconsin-Madison
Applied Population Laboratory
Applied Population Laboratory

• Research and outreach professionals at University of Wisconsin-Madison since the 1960s.

• Custom projects examining populations with expertise in geographic information systems, community studies, and demographic methods.

• Data providers:
  - State Data Center for U.S. Census Bureau
  - University of Wisconsin-Extension

• Small area population estimates and projections including school district enrollment projections.

Visit APL on the web at: www.apl.wisc.edu
50% of the world’s population lives in just 1% of the land.

Source: http://metrocosm.com/
United State’s population live in 5.4% of the land.

Source: http://metrocosm.com/
70% of the population is in cities and villages.
Defining Rural School Districts

Number of Districts

- Urban: 77.6%
- Suburban: 18.4%
- Town/Rural: 4.0%

Student Enrollment

- Urban: 41.0%
- Suburban: 31.6%
- Town/Rural: 27.4%

School Districts by Locale

Source: National Center for Education Statistics
“Rural public schools are the mainstay of a community and provide an enormous sense of pride over generations.”

“According to the Wisconsin State Journal, rural school districts from 2000 to 2010, suffered a 7.5 percent enrollment decline.”

“For rural areas, where jobs are fewer and wages are about 25 percent less than urban areas, this is devastating for kids.”

“While public school funding for rural schools declines, there are costs that continue to increase . . .”

“Wisconsin's rural public schools face dilemma”
Increase in Enrollment, Costs, & Poverty
Percent of Districts by Locale
2008/09 to 2013/14

Enrollment
Total Costs
Costs per pupil
Free & reduced lunch

URBAN
SUBURBAN
TOWN
RURAL

64.7%
58.8%
52.9%
52.6%
65.8%
59.0%
45.3%
61.1%
67.4%
98.7%
97.9%
77.7%
87.1%

0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Research Questions

- What trends (enrollment decline, poverty, and increasing costs) are affecting rural schools in Wisconsin?
- Is there a correlation between these different trends in rural school districts?
- How does enrollment predict expenses, poverty, assessment, & demographic characteristics?
Methodology

- Calculate percent change from 2008/09 to 2013/14 (Ex: 2,000 – 1,900 = 100/2,000 = - .05)
- Perform Pearson’s correlation coefficient and generate scatter plots
- Complete series of multi-regression models
Research Questions

- What trends (enrollment decline, poverty, and increasing costs) are affecting rural schools in Wisconsin?
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- How does enrollment predict expenses, poverty, assessment, & demographic characteristics?
Key Variables

Enrollment

Costs

Poverty
Age Structure
State of Wisconsin

Source: U.S. Census
School District Enrollment

- Statewide enrollment declined by 0.43% from 2008/09 to 2013/14.
- 35% of urban districts declined.
- 47% of suburban districts declined.
- 67% of town/rural districts declined.
- 29% of town/rural districts decreased by 10% or more.
Key Variables

Enrollment

Costs ↔ Poverty
Costs

Increased Spending
Percent of District by Locale
2008/09 to 2013/14

Urban: Total Costs 59%, Transportation Costs 82%
Suburban: Total Costs 59%, Transportation Costs 83%
Town: Total Costs 61%, Transportation Costs 74%
Rural: Total Costs 53%, Transportation Costs 71%

Legend:
- Total Costs
- Transportation Costs
- Instruction
Rural School Costs

Increased Spending
Percent of Districts
2008/09 to 2013/14

<table>
<thead>
<tr>
<th>Category</th>
<th>Town</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Facility</td>
<td>39%</td>
<td>41%</td>
</tr>
<tr>
<td>Food service</td>
<td>78%</td>
<td>68%</td>
</tr>
<tr>
<td>Transportation</td>
<td>74%</td>
<td>71%</td>
</tr>
<tr>
<td>Total Costs</td>
<td>61%</td>
<td>53%</td>
</tr>
</tbody>
</table>

Source: Dept of Public Instruction
Key Variables

Enrollment

Costs

Poverty
Nearly 1 in 5 children are now living in poverty.

- Over 2010-2014, nearly one in five Wisconsin children were living in poverty.
- 239,000 children living in poverty, or 18.5%.
- Additional 50,000 children at risk for food & housing insecurity and poor educational outcomes.
- Wisconsin ranks 20th on the prevention of child poverty.
- 10 states had faster rates of increase in child poverty than Wisconsin.

Source: ACS, 2010-2014
Poverty in Wisconsin

Free or Reduced-Price School Meal Eligibility

2012-2013

Legend
- Not participating
- 20 percent or less
- 21 to 40 percent
- 41 to 50 percent
- 51 to 70 percent
- More than 70 percent

Data Source: National School Lunch Program reimbursement claims submitted by school districts to the DPI. (Certified October count.)
Increased Poverty
Percent of Districts
2008/09 to 2013/14

<table>
<thead>
<tr>
<th>Poverty (&lt; 18)</th>
<th>Rural</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>69%</td>
<td>72%</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Homelessness</th>
<th>Rural</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>76%</td>
<td>91%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Free/Reduced Lunch</th>
<th>Rural</th>
<th>Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>87%</td>
<td>98%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Dept. of Public Instruction & American Community Survey
Research Question

Is there a correlation between these different trends in rural school districts?
Correlation

- Correlation between enrollment & costs (total costs & costs per pupil).
- Correlation between enrollment & free/reduced lunch.
- Weaker correlation between free/reduced lunch & costs.
- Staff FTE collates with all three.
- Other correlations: poverty rate & graduation rates, poverty rate & staff FTE, and WKCE math & WKCE reading.
Correlation

PERCENT CHANGE IN . . .

Enrollment

- Staff FTE (+ .46)
- Median age (- .15)

Total costs (+.51)
Costs per pupil (-.45)

Costs

- Staff FTE (+ .57)
- Costs per pupil (+.49)
- Median age (-.19)

Free & Reduced Lunch

- Staff FTE (+ .23)
- Poverty rate (+ .19)
Staff FTE & Free/Reduced Lunch

Positive correlation between Enrollment and Staff FTE.

Positive correlation between Enrollment and F/R Lunch.
Median Age & Costs

Negative correlation between Enrollment and Median age.

Negative correlation between Enrollment and Costs per pupil.

Strong positive correlation between Enrollment and Total Costs.
Research Questions

- What trends (enrollment decline, poverty, and increasing costs) are affecting rural schools in Wisconsin?
- Is there a correlation between these different trends in rural school districts?
- How does enrollment predict school expenses, poverty, assessments, & demographic characteristics?
Key Variable - Enrollment

**Assessment Variables**
- Graduation rates
- ACT scores (11th)
- WKCE scores (8th)

**Expense Variables**
- Staff FTE
- Total costs
- Costs per pupil

**Demographic Variables**
- Median age
- Population under 18
- Hispanic population

**Socioeconomic Variables**
- Free/reduced lunch
- Equalized value
- Poverty rate

*Examining percent change in . . . .
Future Research

- Continue to monitor these trends and determine if enrollment is a predictor.
- Determine if the location of a district matters. What does it mean for districts further from urban centers?
- Analyze the influence of private schools and voucher program on rural public schools.
Rural Poverty

American Community Survey, 2009
School Expenses

United States Expenditures on Education

[In constant 2013–14 dollars]

Total expenditures per student

- Current expenditures
  - 2000–01: $9,904
  - 2005–06: $10,798
  - 2010–11: $11,332
  - 2011–12: $11,014

- Capital outlay
  - 2000–01: $1,310
  - 2005–06: $1,377
  - 2010–11: $1,094
  - 2011–12: $1,018

- Interest on school debt
  - 2000–01: $289
  - 2005–06: $345
  - 2010–11: $385
  - 2011–12: $370

Source: Center for National Education Statistics
Enrollment Decline

Town & Rural School Districts
4K-12 Enrollment History and Projections

Town School Districts
Rural School Districts
State Budget Cuts to Education

- Student-teacher ratio increased from 14.8 in 2009 to 15.1 in 2013.
- Wisconsin schools have lost nearly 3,000 teaching jobs over the last decade.
- Share of districts with average teacher experience of 15 years or more has fallen.
- 2016-17 budget year calls for a freeze on the revenue limit and a $100 increase in per-pupil spending.

Source: Wisconsin Budget Project
Initiative by Wisconsin Council on Children and Families
THANK YOU!

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Sarah L. Kemp
University of Wisconsin-Madison
Applied Population Laboratory
608-256-6781
kemp@wisc.edu