Keeping up with the Joneses: District Adoption of the Four-day School Week in Rural Missouri

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AEFP Research Conference
March 2020

Over 1,600 schools in 26 states follow a 4DSW, over double the amount 10 years ago (Thompson et al., 2020; Heyward, 2018).

Primary rationales: cost savings, attendance, rural labor pressures (Thompson et al., 2020).

Research has observed:
- Mixed achievement results (positive in CO / negative in OR) (Anderson & Walker, 2015; Thompson, 2019a)
- Increased juvenile property crime (CO) (Fischer & Argyle, 2018)
- Savings of 0.4% - 2.5% (Thompson, 2019b)
- Negative employment effects for mothers in two-parent homes; no negative effects for single mothers or fathers (Ward, 2019)

In a survival analysis framework, we assess the district, student, and teacher characteristics associated with 4DSW adoption. We employ a Cox Proportional Hazards Model:

$$ h(t) = h_0(t) \exp(\beta_1 x_{1i} + \beta_2 x_{2i}(t) + \ldots + \beta_k x_{ki}) $$

We find that district proximity to other 4DSW districts is the strongest predictor of policy adoption, particularly districts within MO’s mean commuting time (23.6 minutes). In many specifications, it is the only statistically significant predictor. Amid challenging rural labor markets, districts may adopt the 4DSW to alleviate a perceived competitive disadvantage in retaining and recruiting human capital relative to nearby 4DSW districts.

95% of 4-day MO districts are rural.

<table>
<thead>
<tr>
<th>Rural Districts, 2019</th>
<th>4DSW w/i mean commute</th>
<th>4DSW district count w/i mean commute</th>
<th>4DSW w/i 2*mean commute</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Spatial Measure</td>
<td>2.335** (0.919)</td>
<td>1.830*** (0.400)</td>
<td>1.159*** (0.058)</td>
<td>1.209*** (0.067)</td>
</tr>
<tr>
<td>Local Revenue (1000s)</td>
<td>1.126 (0.142)</td>
<td>1.121 (0.144)</td>
<td>1.104 (0.138)</td>
<td>1.109 (0.135)</td>
</tr>
<tr>
<td>Property Value (1000s)</td>
<td>0.994 (0.005)</td>
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<tr>
<td>Dropout Rate</td>
<td>1.180 (0.135)</td>
<td>1.128 (0.128)</td>
<td>1.192* (0.122)</td>
<td>1.224** (0.125)</td>
</tr>
<tr>
<td>Teacher salary (1000s)</td>
<td>0.925 (0.046)</td>
<td>0.934 (0.046)</td>
<td>0.931 (0.047)</td>
<td>0.935 (0.047)</td>
</tr>
<tr>
<td>New Teachers</td>
<td>1.023 (0.028)</td>
<td>1.027 (0.021)</td>
<td>1.017* (0.019)</td>
<td>1.024 (0.021)</td>
</tr>
<tr>
<td>District Count</td>
<td>49</td>
<td>49</td>
<td>49</td>
<td>49</td>
</tr>
</tbody>
</table>

Each column represents a separate regression including a different 1-year lagged spatial measure. Additional variables include: % minority and ELL students, math achievement, dropout rate, teacher experience, and admin salary.