Fewer, Better Pathways for All? Rural School Consolidation in China’s Minority Regions

Emily Hannum1 and Fan Wang2

1Department of Sociology, University of Pennsylvania, hannumem@sas.upenn.edu
2Department of Economics, University of Houston, fwang26@uh.edu

Abstract

• Primary school consolidation—the closure of small community schools or their mergers into larger, better-resourced schools—is emerging as a significant policy response to changing demographics in middle income countries with large rural populations. In China, large-scale consolidation took place in the early 21st century. Because officially-recognized minority populations disproportionately reside in rural and remote areas, minority students were among those at elevated risk of experiencing school consolidation. We analyze heterogeneous effects of consolidation on educational attainment and reported national language ability in China by exploring variations in closure timing across villages and cohorts captured in a 2011 survey of provinces and autonomous regions with substantial minority populations. We consider heterogeneous treatment effects across groups defined at the intersections of minority status, gender, and community ethnic composition and socioeconomic status.

• Compared to villages with schools, villages whose schools had closed reported that the schools students now attended were better resourced, less likely to offer minority language of instruction, more likely to have Han teachers, farther away, and more likely to require boarding. More than Han youth, ethnic minority youth were negatively affected by closure, in terms of its impact on both educational attainment and reported written Mandarin facility. However, for both outcomes, significant penalties accruing to minority youth occurred only in the poorest villages. Penalties were generally heavier for girls, but in the most ethnically segregated minority villages, boys from minority families were highly vulnerable to closure effects on educational attainment and written Mandarin facility. Results show that intersections of minority status, gender, and community characteristics can delineate significant heterogeneities in policy impacts.

Data and method

1. We analyze the rural household and village questionnaires from the China Household Ethnic Survey (CHS 2011), which covers households and villages from 728 villages in 81 counties of 7 provinces with substantial minority populations in China.

2. We analyze heterogeneous effects of consolidation on educational outcomes (attainment, reported national language ability) across groups defined at the intersections of minority status, gender, and community characteristics (poverty status, ethnic composition). We apply a difference-in-differences approach:

\[ E_{\text{priv}} = \alpha + \beta_1p + \beta_2d + \beta_3C + \sum (\beta_i'(1-M_i) + \beta_i'M_i) + 1 \{t_1 \leq t \leq t_2\} C_1 \]

- Without school closure, educational attainment \( E^p_{\text{child}} \) from village \( v \) in province \( p \) at age \( a \) in 2011 could be decomposed into: a constant \( \alpha \), a village fixed effect \( \beta_2 \), a province-specific age fixed effect \( \beta_2^p \), a minority status-specific age fixed effect \( \delta_{p,a} \) and idiosyncratic terms (observed characteristics \( X_{i} \) and unobserved error term \( \epsilon_i \)).

- With school closure, the policy’s effect is assumed to be additive and captured by \( \beta_2^d \) for Han individuals and \( \beta_2^m \) for minority individuals; the effect is constant within age group \( z \) defined by age-at-closure \( t \) (with lower and upper bounds for each group \( z_i \) and \( z_j \)). Here, \( C_i \) is a binary variable indicating if individual \( i \) is from a village \( v \) with school consolidation (i.e., a treatment village).

Sample analysis and full results summary

- Table interpretation:
  - By 2011, minority youth ages 10 to 13 at time of closure in a village closure occurred around a 0.6-year decrement in years of schooling. For those 6 to 9 years old at closure, the decrement is around a half-year. Results are similar by community ethnic composition.
  - Full results summary (details available via link to the full paper):
    - There is clear evidence of an average negative effect of closure on two of the three outcomes studied, educational attainment and reported written Mandarin ability, for minority youth, compared to Han youth.
    - Additional analyses indicated that average decrements experienced by minority youth masked significant heterogeneities at the intersections of youth statuses.
    - For example, for both educational attainment and written language facility, penalties accruing to minority youth occurred only in poorer villages and not to minority youth in wealthier villages.
    - Penalties were generally heavier for minority girls. However, in the most ethnically segregated minority villages, boys from minority families were highly vulnerable to closure effects on educational attainment and written Mandarin facility.

Descriptive findings

- Villages that experienced closures reported using better resourced and farther away schools, which offered less minority language instruction and had more Han teachers.

- For both educational attainment and written language facility, penalties accruing to minority youth occurred only in poorer villages and not to minority youth in wealthier villages.

- Penalties were generally heavier for minority girls. However, in the most ethnically segregated minority villages, boys from minority families were highly vulnerable to closure effects on educational attainment and written Mandarin facility.

Implications

- While the nature and specific impacts of school consolidation policies likely vary across countries, rationales across the world are strikingly similar, as are the concerns about potential implications for children in socially and economically marginalized communities.

- Findings illustrate the importance of considering heterogeneous policy impacts along intersecting dimensions of stratification.

Background

Sparse school-age populations are an emerging challenge in rural, as well as urban, settings in many countries, and consolidation is a common policy response. Marginalized populations might be particularly vulnerable to institutional loss.

China experienced a school-aged population drop and consolidated rural schools on a massive scale in the early 21st Century.

Sample analysis and full results summary

Table: Outcome: grades completed by year 2011

<table>
<thead>
<tr>
<th>Outcome</th>
<th>All villages</th>
<th>Han %</th>
<th>Han %</th>
<th>Han %</th>
<th>Han %</th>
<th>Han %</th>
<th>Han %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village</td>
<td>Han fraction</td>
<td>90%</td>
<td>70%</td>
<td>50%</td>
<td>30%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>Closure</td>
<td>age at closure 6-9</td>
<td>0.50</td>
<td>0.35</td>
<td>0.25</td>
<td>0.10</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Closure</td>
<td>age at closure 10-13</td>
<td>0.60</td>
<td>0.45</td>
<td>0.30</td>
<td>0.15</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Closure</td>
<td>age at closure 22-29</td>
<td>0.70</td>
<td>0.55</td>
<td>0.40</td>
<td>0.20</td>
<td>0.10</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Observations: 11637 1917 8571 7681 5906 2451

Sample analysis: China experienced a school-aged population drop and consolidated rural schools on a massive scale in the early 21st Century.

Youth population decline, China


Population in millions

China Household Ethnic Survey (CHS 2011), which covers households and villages from 728 villages in 81 counties of 7 provinces with substantial minority populations in China.