Enrollment Size, Fiscal Structure, and Accountability Performance in Ohio's Public School Districts

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Abstract

Ohio's 607 traditional public school districts range from 73 to 46,054 students, a distribution so heavily right-skewed that the mean (2,414) sits far above the median (1,449), and the standard statistical test for outliers identifies zero small districts as anomalous — the skew is produced entirely by a handful of very large districts, not by a distinct cluster of small ones. This paper uses that finding to argue for a percentile-based definition of “low enrollment,” rather than an absolute headcount imported from other states' research literature, and applies it (the bottom quartile, ≤879 students, n = 152) to profile where these districts are located, how they finance operations, and how they perform on the state's own accountability measures, drawing on FY2025 Ohio Department of Education and Workforce enrollment, finance, and Report Card data joined to a statewide district boundary file. Low-enrollment districts are found to concentrate in three geographically and economically distinct areas — agricultural northwest/west-central Ohio, Appalachian southeast/south-central Ohio, and the post-industrial Mahoning Valley — rather than in a single “rural Ohio” pattern. Fiscally, these districts lean more heavily on state aid and exert greater local tax effort than the rest of the state simultaneously, and show the administrative-overhead signature predicted by the school-consolidation cost literature, partly offset by lower average salaries. On the state's own accountability measures, low-enrollment districts perform at or above parity with the rest of the state on most indicators, with two exceptions (Gap Closing and Value-Added growth) that warrant district-level rather than aggregate interpretation. The paper closes by situating these findings within current (2025–2026) Ohio policy developments in school finance and consolidation. This analysis is descriptive; it does not argue for or against district consolidation.

Keywords: school district consolidation, low enrollment, Ohio, education finance, rural education, school funding

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The number of Ohio public school districts — 607 — is frequently invoked in state policy discussions as self-evidently too many, most recently in connection with proposals to consolidate districts along county lines as a mechanism for property tax relief. Underlying these discussions is an assumption that a meaningful share of Ohio's districts are "too small" to operate efficiently, and that consolidating them would produce material fiscal savings without materially harming educational outcomes. Both halves of that assumption are contested in the school-finance research literature, and neither has, to this author's knowledge, been tested systematically against Ohio's own current district-level data. This paper does that: it defines "low enrollment" empirically from Ohio's own enrollment distribution rather than from an externally imported threshold, identifies the resulting set of districts, and profiles them geographically, fiscally, and on the state's own accountability measures. It then situates the findings within the specific school-finance and consolidation proposals active in Ohio as of early 2026.

This paper takes no position on whether any of Ohio's districts should merge. It is a descriptive analysis intended to inform that conversation with current, Ohio-specific data, not to resolve it.

Literature Review

Foundational Cost-Function Literature

The standard reference for school district economies of size is Andrews, Duncombe, and Yinger's (2002) synthesis of decades of prior cost-function research, which describes a U-shaped relationship between district size and per-pupil cost: real diseconomies below roughly 2,000 pupils, a broad efficient range around 2,000–4,000 pupils, and diseconomies re-emerging at very

large enrollments. Schiltz (2017) revisits this question with more flexible cost-function methods and reaches similar conclusions about the shape, if not the precise location, of the efficient range.

Actual Versus Projected Consolidation Savings

Duncombe and Yinger (2007), using realized outcomes from rural New York district mergers rather than simulated projections, find that consolidation savings are genuine but strongly size-dependent: substantial when very small districts (roughly 300 pupils) merge, and reduced to low single digits by the time both merging districts already exceed roughly 1,500 pupils. They also document a multi-year transition-cost bump that precedes any net savings, which helps explain why savings promised to voters at the time of a merger vote often disappoint in the merger's first several years. A related methodological literature (Karakaplan & Kutlu, 2019) shows that cost models failing to correct for the fact that districts which merge are not a random sample of all districts tend to produce systematically inflated savings estimates — a partial explanation for why projected and realized savings diverge.

Synthesis and Policy Literature

The National Education Policy Center's widely cited synthesis (Howley et al., 2011) is more skeptical still, concluding that consolidation does not, on average, reduce spending; that whatever efficiency gains exist are concentrated in the very smallest districts and are “inevitably small” in aggregate fiscal terms; and that diseconomies of scale re-emerge above roughly 15,000 students, meaning some U.S. districts have already been consolidated past the efficient range in the other direction. The same synthesis documents an equity cost to large-scale consolidation: larger schools are associated with larger achievement gaps by poverty, race, and gender, and with lower achievement specifically for low-income students.

Defining “Low Enrollment”

There is no consensus definition of a “low-enrollment” or “small” district across state or federal policy. The Urban Institute's (2023) review of rural school district definitions found 25 states using absolute enrollment thresholds ranging from 244 students (Wyoming) to 24,000 (Florida), averaging roughly 58% of each state's own mean district enrollment — evidence that any single absolute threshold is poorly suited to cross-state comparison, and arguably to within-state application as well, given how much district-size distributions vary by state. This paper adopts a state-relative, percentile-based definition for that reason, described in the Method section.

Method

Five district-level datasets covering all 607 Ohio traditional public school districts for FY2025 (school year 2024–25) were joined on district IRN (Information Retrieval Number, Ohio's unique district identifier): (a) the Ohio Report Card district overview file (enrollment headcount, county, Ohio Department of Education and Workforce State Support Team region, and Overall/Achievement/Gap Closing/Progress/Graduation/Early Literacy/CCWMR star ratings and percentages); (b) the Ohio Department of Education and Workforce District Profile (“Cupp”) Report (62 fiscal, demographic, and staffing variables per district, including revenue and expenditure by source and category, property valuation, millage, and staffing ratios); (c) a district per-pupil-expenditure file; (d) an economically disadvantaged subgroup achievement file; and (e) a district-details file providing attendance, mobility, and chronic absenteeism rates by student subgroup, from which the “All Students” row was used for district-level rates. A statewide school district boundary shapefile (612 polygon features, EPSG:3857 Web Mercator projection) was joined to the same IRN field for geographic analysis and mapping; five shapefile features

(three Lake Erie island districts, one border district, and one non-district placeholder) had no corresponding enrollment record and were excluded from the enrollment-based analysis, though retained as a neutral category on the map.

Enrollment (headcount, not average daily membership) was used as the primary size measure. Descriptive statistics (mean, median, standard deviation, skewness) and a full percentile/decile breakdown were computed on the resulting 607-district distribution. A Tukey interquartile-range outlier test (lower fence = Q1 − 1.5 × IQR) was applied to test whether small Ohio districts constitute statistical outliers; it does not identify any district as a low-end outlier, including the 73-student minimum, because the distribution's skew is produced entirely by the large-district tail. On that basis, this paper defines “low enrollment” as the bottom quartile of the statewide distribution (enrollment ≤879 students, n = 152), rather than an outlier-based or externally imported absolute threshold, and compares this group against the remaining 455 districts and the statewide average across geography, finance, and accountability measures. Geometries for the map were simplified (Douglas-Peucker algorithm, 150-meter tolerance) for web rendering; this simplification is cosmetic and does not affect any of the tabular findings, which were computed from the unsimplified attribute data.

Results

Statewide Enrollment Distribution

Across all 607 districts, statewide enrollment totals 1,465,176 students. Mean enrollment is 2,414 and median enrollment is 1,449 (skewness = 6.40), with a minimum of 73 (Put-in-Bay Local, Ottawa County, a Lake Erie island district) and a maximum of 46,054 (Columbus City Schools). Table 1 reports the full percentile distribution.

Table 1

Selected Percentiles of District Enrollment, FY2025 (N = 607)

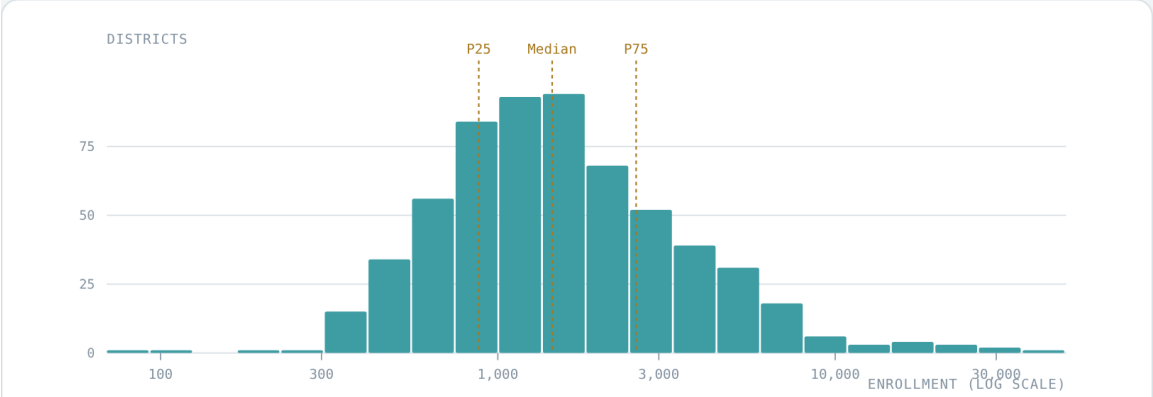
Percentile	Enrollment at/below	Districts at/below	Marker
P1	361	7	
P5	482	31	
P10	582	61	Decile 1
P25	879	152	Q1 (adopted threshold)
P50	1,449	304	Median
P75	2,569	455	Q3
P90	4,847	546	Decile 9
P95	6,683	576	
P99	19,562	600	

Note. Full 15-point percentile table available on request.

The bottom quartile of districts by count (152 of 607, 25%) enroll only 6.5% of statewide students; the bottom decile (61 districts) enroll under 2%. By contrast, the ten largest districts alone (1.6% of all districts) enroll 17% of statewide students — a reminder that district count and student count are very different bases for evaluating the scale of any policy response.

Figure 1

Distribution of Enrollment Across All 607 Ohio Districts



Note. Log-scaled enrollment bins, 607 districts. Dashed lines mark the 25th percentile (878), median (1,449), and 75th percentile (2,568).

Geographic Distribution

Low-enrollment districts concentrate in three geographically and economically distinct areas rather than a single rural pattern, summarized in Table 2 by Ohio Department of Education and Workforce State Support Team region.

Table 2

Low-Enrollment District Concentration by State Support Team Region

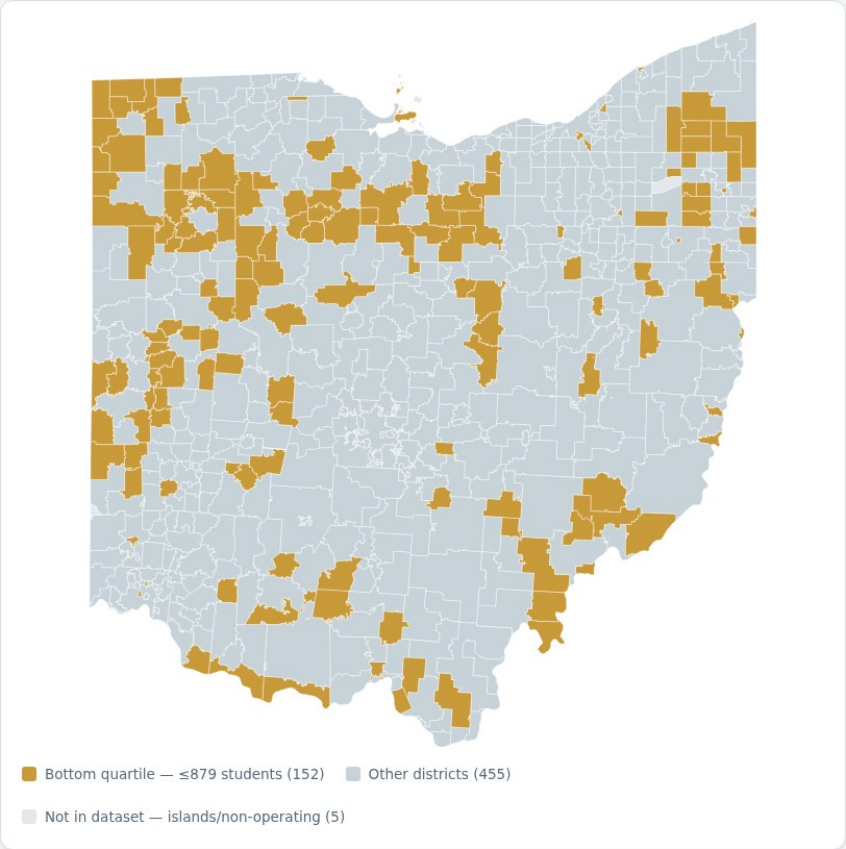
Region	Low-enrollment	All districts	Share
1 — Northwest Ohio	34	74	45.9%
6 — West Central Ohio	18	44	40.9%
16 — Southeast Ohio (Appalachian)	9	24	37.5%
7 — North Central Ohio	16	43	37.2%
5 — Mahoning Valley	19	52	36.5%
15 — Scioto Valley	8	28	28.6%
14 — South Central Ohio	5	18	27.8%
10 — Dayton Area	14	51	27.5%
2 — Erie/Huron/Lorain	5	26	19.2%
12 — Eastern Ohio Valley	8	42	19.0%
4 — Geauga County	2	14	14.3%
9 — Stark/Wayne/Holmes	3	28	10.7%
8 — Akron Area	3	34	8.8%
13 — Cincinnati Metro	4	49	8.2%
3 — Cleveland Metro	2	31	6.5%
11 — Columbus Metro	2	49	4.1%

County-level concentration is even more pronounced in specific cases: Putnam County (8 of 9 districts, 88.9%), Williams County (6 of 7, 85.7%), Hardin County (4 of 5, 80.0%), and Shelby County (6 of 8, 75.0%) are the most concentrated. Trumbull County, in the Mahoning

Valley, has the single highest absolute count of low-enrollment districts (9) of any Ohio county, reflecting sustained population decline rather than the agricultural land-use pattern that characterizes the northwest Ohio cluster. Ohio's four major metropolitan regions (Columbus, Cleveland, Cincinnati, and the Akron area) sit at 4.1–8.8% concentration, roughly a fifth to a tenth the rate of the highest-concentration rural regions.

Figure 2

Statewide Map of Low-Enrollment Districts



Note. All 607 Ohio districts (612 boundary features), with the 152 bottom-quartile low-enrollment districts shaded.

Fiscal Profile

Table 3 compares low-enrollment districts (n = 152) to the remaining districts (n = 455) and the statewide average across finance and staffing measures.

Table 3

Fiscal and Staffing Profile, Low-Enrollment Districts vs. Remainder of State

Measure	Low enrollment	Rest of state	Statewide
State revenue, % of total	48.8%	39.7%	41.9%
Local revenue, % of total	35.9%	44.8%	42.6%
Federal revenue, % of total	7.1%	7.8%	7.6%
Total revenue per pupil	$21,189	$17,955	$18,761
Total operating expenditure per pupil	$18,626	$16,811	$17,263
Instructional expenditure per pupil	$10,239	$9,635	$9,786
Administrator expenditure per pupil	$2,774	$2,238	$2,371
Pupils per administrator (FTE)	85.7	122.1	113.1
Avg. classroom teacher salary	$64,299	$72,672	$70,585
Avg. administrator salary	$82,776	$96,256	$92,914
Local tax effort index	1.23	0.97	1.04
Assessed property valuation per pupil	$291,277	$298,561	$296,746
Public utility tangible value, % of valuation	13.1%	9.4%	10.3%
Median household income (county, TY23)	$42,613	$46,738	$45,710

Low-enrollment districts draw a larger share of revenue from the state (48.8% vs. 39.7%) while simultaneously exerting greater local tax effort (index 1.23 vs. 0.97) than the rest of the state — they are not simply passive recipients of state equalization aid, but are drawing on both available revenue channels more heavily than their peers. This produces both higher total revenue and higher total operating expenditure per pupil, consistent with the administrative-overhead signature the cost-function literature predicts: administrator expenditure per pupil is 24% higher despite each administrator covering far fewer pupils (85.7 vs. 122.1). That overhead is partly, though not fully, offset by meaningfully lower average salaries for both teachers (−12%) and administrators (−14%), consistent with these districts' disproportionate location in

lower-cost-of-living rural counties. Notably, assessed property valuation per pupil is essentially at parity with the rest of the state on average (a difference of roughly 2%), suggesting that the property-tax base decoupling documented for specific districts in prior work on this topic is not a broad statewide pattern for this group as a whole, though public utility tangible property does represent a modestly larger share of valuation (13.1% vs. 9.4%).

Performance on State Accountability Measures

Table 4

State Report Card and Attendance/Mobility Measures, Low-Enrollment Districts vs. Remainder of State

Measure	Low enrollment	Rest of state	Statewide
Overall star rating (of 5)	3.66	3.72	3.71
Performance Index	80.0%	79.8%	79.9%
Gap Closing	46.2%	52.2%	50.7%
4-year graduation rate	96.0%	94.9%	95.1%
College/Career/Workforce/Military Readiness	71.4%	68.0%	68.9%
Value-Added growth index	−1.26	+0.87	+0.33
Attendance rate	93.5%	92.7%	92.9%
Chronic absenteeism rate	17.4%	20.6%	19.8%
Mobility rate	6.9%	7.1%	7.1%
Economically disadvantaged, % of students	61.4%	58.5%	59.2%

Low-enrollment districts show no broad pattern of underperformance. Overall star rating is essentially at parity with the rest of the state (3.66 vs. 3.72), and low-enrollment districts run ahead on graduation rate, attendance, chronic absenteeism, and College/Career/Workforce/Military Readiness. Two measures run counter to this pattern: Gap Closing (which aggregates outcomes for historically underserved subgroups) and the Value-Added growth index are both lower for low-enrollment districts. Both measures are documented

in the value-added-modeling literature as being statistically noisier when the underlying cohort or subgroup is small, which is definitionally more common in low-enrollment districts; this paper treats these two results as warranting district-level rather than aggregate interpretation rather than as clear evidence of an achievement deficit. The overall star-rating distribution (not tabulated) shows low-enrollment districts somewhat more concentrated at the middle of the ratings scale (36% at 3.5 stars vs. 23% of other districts) and modestly under-represented at the top (18.5% at 4.5–5.0 stars vs. 25.1%) — a narrower distribution around a similar center, rather than a shifted one.

Discussion

This analysis intersects with three active threads in Ohio education policy as of early 2026. First, state and local school funding are moving in opposing directions for the districts profiled here. The FY2026–27 state budget funds Ohio's Fair School Funding Plan formula approximately $2.86 billion short of the amount the formula itself specifies, providing roughly 5.7% of the state funding increase the formula calls for, and moved per-pupil performance supplements outside the base foundation formula (Policy Matters Ohio, 2025). Concurrently, a package of property tax relief legislation caps future school levy revenue growth to inflation during county reappraisals, caps inside-millage growth similarly, and closes loopholes in the 20-mill floor calculation that are expected to shift approximately 237 districts off that floor over four years (Ohio House of Representatives, Republican Caucus, 2026). Because low-enrollment districts already draw more heavily on both state aid and local tax effort than the rest of the state (Table 3), they have comparatively less capacity to compensate if either revenue channel tightens further.

Second, an active legislative and public discussion proposes consolidating Ohio's 607 districts into approximately 88 countywide systems, explicitly framed as a property tax relief measure given that schools constitute the largest component of most Ohio property tax bills. The counties where such a model would consolidate the greatest number of districts — Putnam, Williams, Hardin, and Shelby — correspond closely to the counties identified in the Results section as having the highest concentration of low-enrollment districts. Education-finance practitioners quoted in contemporaneous reporting have expressed skepticism that the anticipated savings would materialize, citing Ohio's existing network of 51 Educational Service Centers (which already provide the interdistrict service-sharing consolidation is intended to unlock), the tendency for merged districts to require additional county-level administrative capacity, and the likelihood that rural transportation costs would increase rather than decrease under larger service areas — concerns that closely parallel the consolidation-economics literature reviewed above (Scotto, 2025).

A separate proposal from the Fordham Institute would trigger district-level consolidation review using a trajectory-based rather than a size-based criterion: enrollment decline exceeding 30% combined with per-pupil spending growth exceeding 30% over a 15-year period, a test that identifies 49 of Ohio's 606 districts (Fordham Institute, 2025). This criterion is aimed primarily at districts with substantial enrollment collapse relative to their historical size — the Institute's illustrative example, East Cleveland City School District, has experienced a 68% enrollment decline alongside per-pupil spending of approximately $40,700, roughly 2.5 times the state average — rather than at the chronically small, geographically stable rural districts that constitute the majority of the low-enrollment group identified in this paper. The two criteria (static low enrollment versus enrollment-decline-with-cost-growth) identify substantially different, and

likely largely non-overlapping, sets of districts, a distinction this paper suggests is analytically important: “low enrollment” and “collapsing enrollment with unmanaged cost growth” are frequently discussed as a single phenomenon in Ohio policy conversations, but appear, on this evidence, to be different conditions calling for different diagnostic criteria and potentially different remedies.

Finally, this analysis offers one concrete, if limited, illustration of the relationship between enrollment and fiscal distress. As of the most recent state fiscal-status report, only two Ohio districts are under a formally declared fiscal emergency: Trimble Local School District (Athens County) and Mount Healthy City School District (Hamilton County) (Ohio Department of Education and Workforce, 2026). Trimble Local, at 672 students, falls within this paper's low-enrollment group and its Appalachian geographic cluster; however, its fiscal profile diverges sharply from the low-enrollment group average reported in Table 3. Trimble's assessed property valuation per pupil (approximately $101,800) is roughly one-third the statewide average; its local tax effort index (0.66) is below both the statewide average and the low-enrollment group average, indicating a local tax base too thin to generate substantial additional revenue even at high effort; its state revenue share (66.7%) is well above the low-enrollment group average; and its total operating expenditure per pupil ($25,610) and Overall rating (2.5 stars) diverge substantially from the group norm. Mount Healthy City, by contrast, is a mid-size suburban district, not a low-enrollment district by this paper's definition. Two districts do not constitute a statistical pattern, but Trimble's profile is consistent with, and offers a concrete current illustration of, the proposition that the thickness of a district's local property tax base — rather than its enrollment size per se — is the more proximate determinant of fiscal distress, a

distinction with direct relevance to how policymakers might target any future intervention, whether structural (consolidation) or fiscal (targeted aid).

Limitations

This analysis has several limitations that bound its conclusions. It is a single-year (FY2025) cross-sectional snapshot; it does not evaluate trends over time within districts, and a district's current classification as low-enrollment reveals nothing directly about its enrollment trajectory (see the discussion of the Fordham Institute's decline-based alternative criterion above). Enrollment is measured as headcount rather than average daily membership, which is the basis for some Ohio funding-formula calculations; the two measures are highly correlated but not identical. The Value-Added growth and Gap Closing comparisons are aggregate averages across districts of varying subgroup and cohort sizes and should not be read as claims about any individual district's underlying instructional quality. Geographic boundary simplification for mapping purposes was cosmetic and was not used in any tabular calculation. Finally, this is a descriptive, correlational analysis; it does not attempt to isolate the causal effect of enrollment size on any fiscal or performance outcome, and none of its findings should be read as evidence for or against any specific policy response, including consolidation.

Conclusion

Ohio's low-enrollment districts, defined here as the bottom quartile of the state's own enrollment distribution (≤879 students, n = 152), are not a statistical anomaly — they are, in a precise sense, the median condition of Ohio's district landscape, concentrated in three geographically and economically distinct regions rather than a single rural pattern, and sustained through a combination of above-average state aid reliance and above-average local tax effort rather than through any single mechanism. They perform on par with or ahead of the rest of the

state on most Report Card measures, with two specific exceptions warranting further district-level examination. As Ohio's legislature considers both school-finance changes and consolidation proposals that would disproportionately affect this group, this paper's intent is to make the underlying data — rather than the 607-district headline number alone — part of that conversation.

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