2025 North Carolina School District Typology

North Carolina State Board of Education

Waynesville, North Carolina
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Data for the People

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CAROLINA DEMOGRAPHY

About Carolina Demography

Who we are

Carolina Demography is the applied demography unit of the Carolina Population Center (CPC) at UNC-Chapel Hill. We are a non-partisan team of population scientists working for the people of North Carolina.

Our Mission

We help people understand a changing North Carolina to make informed decisions.

About Carolina Demography: What We Do

Find and Collect Data

We work with you to determine the data you need, and where and how to access that data.

Clean, Analyze, & Interpret Data

We use rigorous methods to translate the data and provide meaningful context.

Communicate data and engage stakeholders

We strengthen the capacity of your organization to communicate data-driven ideas.

Motivation

A consistent and comprehensive method of stratifying North Carolina school districts is necessary for purposes of research and evaluation. Making appropriate comparisons between school districts in North Carolina is challenging considering the substantial variation in local contexts across the states 115 Local Education Agencies.

Background

Historically, in North Carolina, school districts have been compared using county population density

This approach does not:

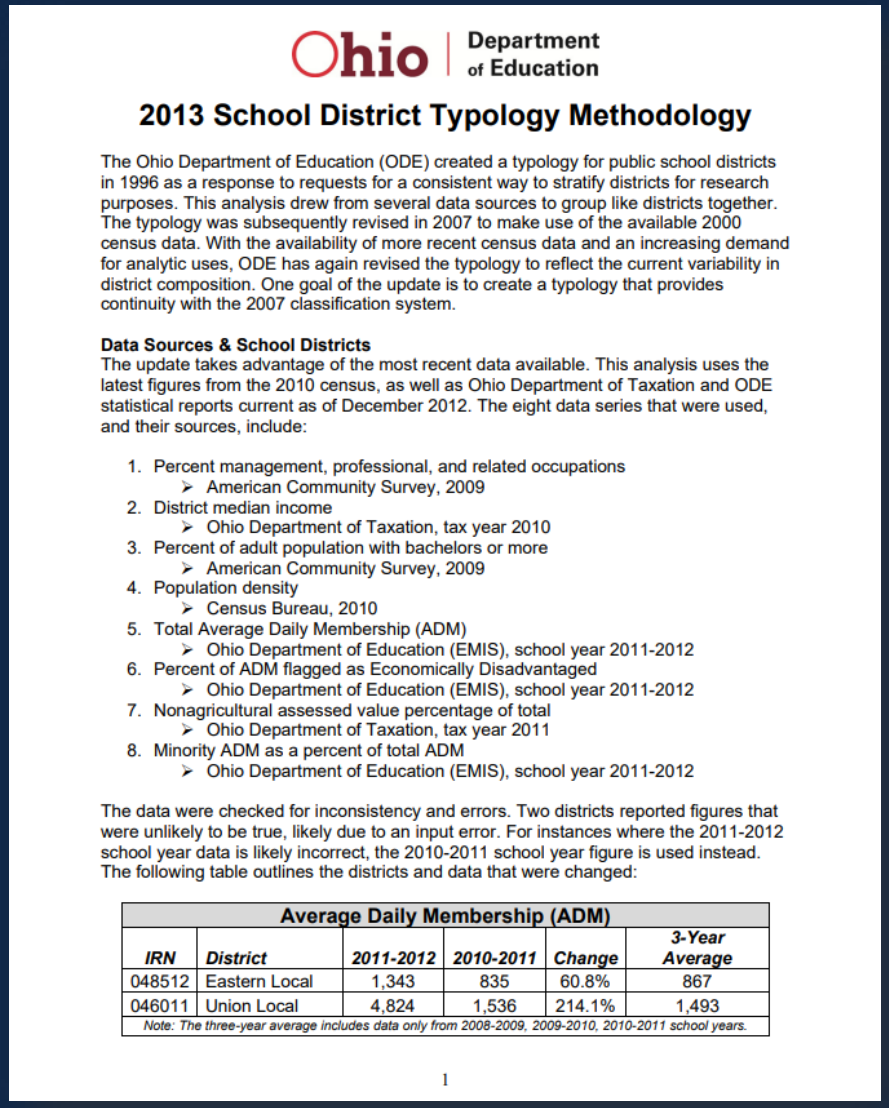
- Consider variation in population density between districts in the 11 counties that have more than 1 school district.
- Account for the variation in social, demographic, and economic contexts between districts in counties with have similar population densities

Objective is to develop a typology that meets these three criteria:

1. Maintains variability across clusters (clusters are distinguishable from one another)
2. Minimizes within-cluster variation (i.e. districts within clusters are statistically similar)
3. Produces results that are intuitive and make practical sense

Model

- The Ohio Department of Education made a district typology that is widely used for research purposes
- This methodology was used as a launching pad for the creation of the 2025 NC School District Typology



Ohio | Department of Education

2013 School District Typology Methodology

The Ohio Department of Education (ODE) created a typology for public school districts in 1996 as a response to requests for a consistent way to stratify districts for research purposes. This analysis drew from several data sources to group like districts together. The typology was subsequently revised in 2007 to make use of the available 2000 census data. With the availability of more recent census data and an increasing demand for analytic uses, ODE has again revised the typology to reflect the current variability in district composition. One goal of the update is to create a typology that provides continuity with the 2007 classification system.

Data Sources & School Districts
The update takes advantage of the most recent data available. This analysis uses the latest figures from the 2010 census, as well as Ohio Department of Taxation and ODE statistical reports current as of December 2012. The eight data series that were used, and their sources, include:

1. Percent management, professional, and related occupations
   - American Community Survey, 2009
2. District median income
   - Ohio Department of Taxation, tax year 2010
3. Percent of adult population with bachelors or more
   - American Community Survey, 2009
4. Population density
   - Census Bureau, 2010
5. Total Average Daily Membership (ADM)
   - Ohio Department of Education (EMIS), school year 2011-2012
6. Percent of ADM flagged as Economically Disadvantaged
   - Ohio Department of Education (EMIS), school year 2011-2012
7. Nonagricultural assessed value percentage of total
   - Ohio Department of Taxation, tax year 2011
8. Minority ADM as a percent of total ADM
   - Ohio Department of Education (EMIS), school year 2011-2012

The data were checked for inconsistency and errors. Two districts reported figures that were unlikely to be true, likely due to an input error. For instances where the 2011-2012 school year data is likely incorrect, the 2010-2011 school year figure is used instead. The following table outlines the districts and data that were changed:

Average Daily Membership (ADM)					
IRN	*District*	*2011-2012*	*2010-2011*	*Change*	*3-Year Average*
048512	Eastern Local	1,343	835	60.8%	867
046011	Union Local	4,824	1,536	214.1%	1,493
Note: The three-year average includes data only from 2008-2009, 2009-2010, 2010-2011 school years.					

1

Roadmap for Typology

1. Compiling necessary data assets
2. Replication Ohio Methodology (K-Means Analysis)
3. Adjustment to the Methodology (Ward's Linkage)
4. Determination of Final Groupings

Variables (Factors included in the index)

School district level

- Median Household Income
- % of Adult Pop. (25+) with a Bachelor's degree or more
- Population density (of district)
- % Economically Disadvantaged Students (EDS)
- % Minority Students
- % Inexperienced Principals
- % Beginner Teachers
- % English Learner (EL) Students
- Local Per Pupil Expenditure (PPE), Child Nutrition Excluded
- Total Average Daily Membership (ADM)

2023 5-year American Community Survey & NC DPI

Variables (Factors we added)

School district level

- Median Household Income
- % of Adult Pop. (25+) with a Bachelor's degree or more
- Population density
- % Economically Disadvantaged Students (EDS)
- % Minority
- % Inexperienced Principals
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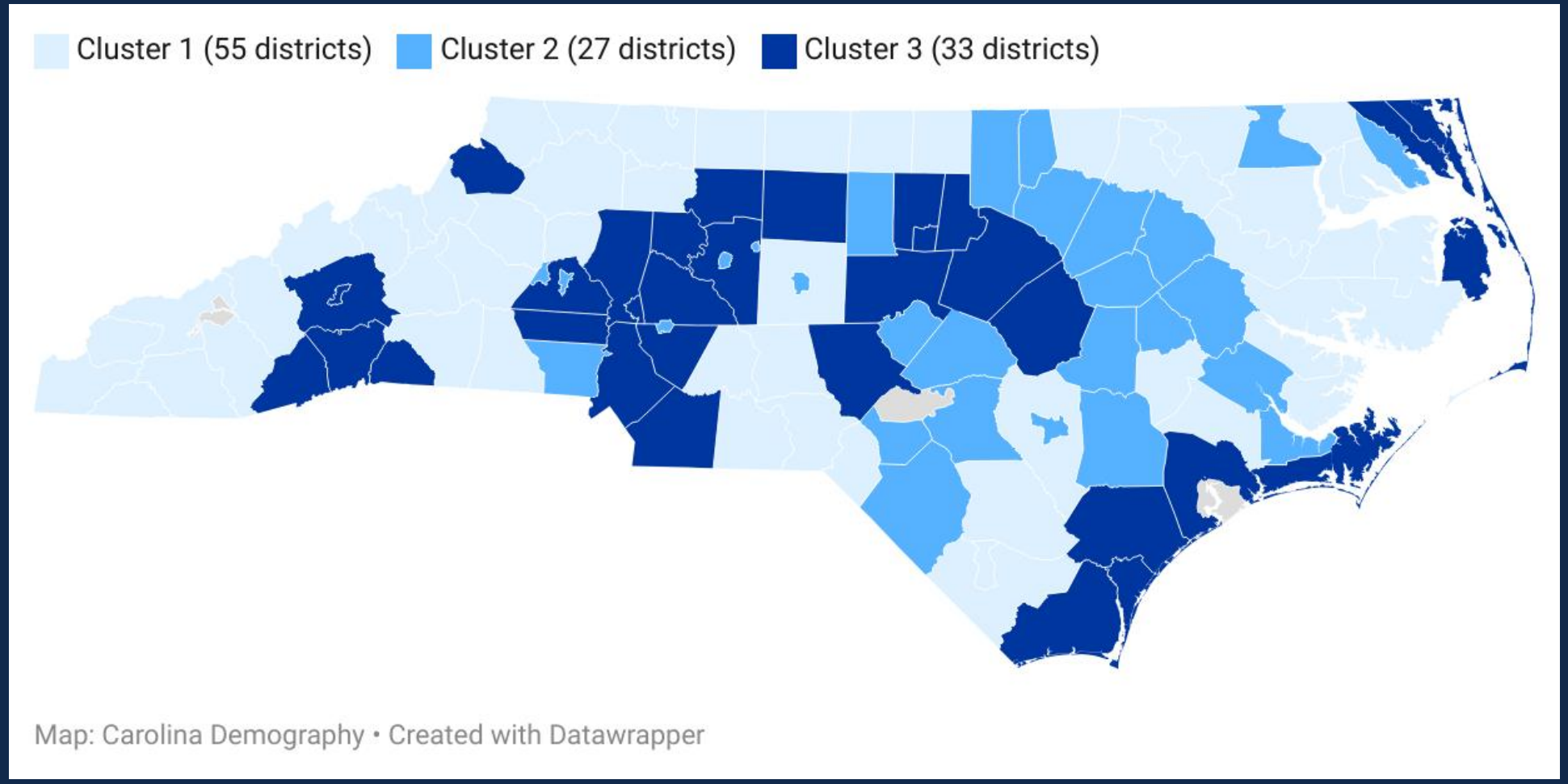
2023 5-year American Community Survey & NC DPI

Step 2: Replication of the Ohio Methodology



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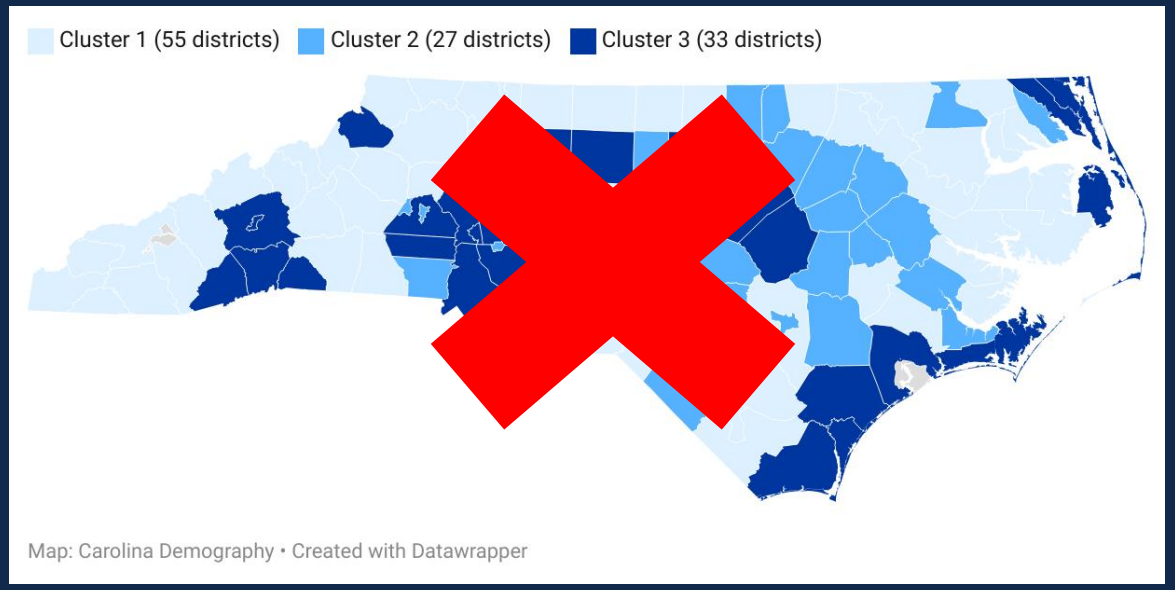
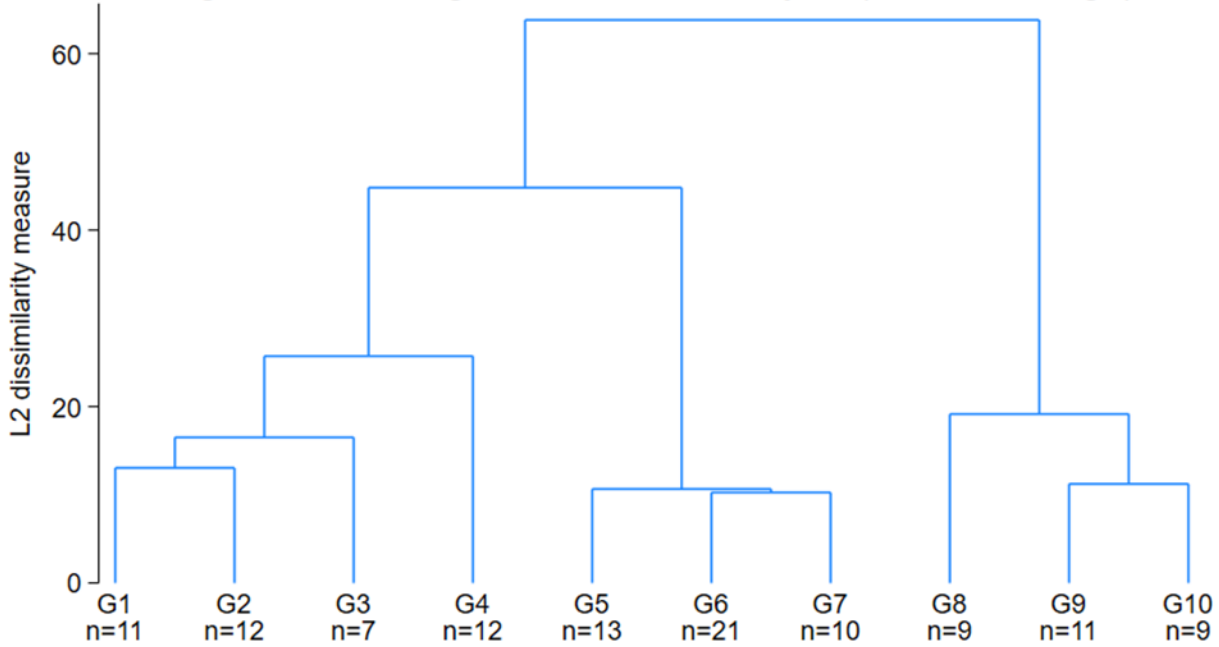


- The results are not intuitive (large cluster size)
- High variation within clusters (districts within clusters are not similar)

Step 3: Ward's Linkage

- Hierarchical clustering method, which does not require selecting the number of clusters pre-analysis

Figure 2: Dendrogram of Cluster Analysis (Ward's Linkage)



Dendrogram

- Median Household Income
- % of Adult Pop. (25+) with a Bachelor's degree or more
- Population density
- % Economically Disadvantaged Students (EDS)
- % Minority
- % Inexperienced Principals
- % Beginner Teachers
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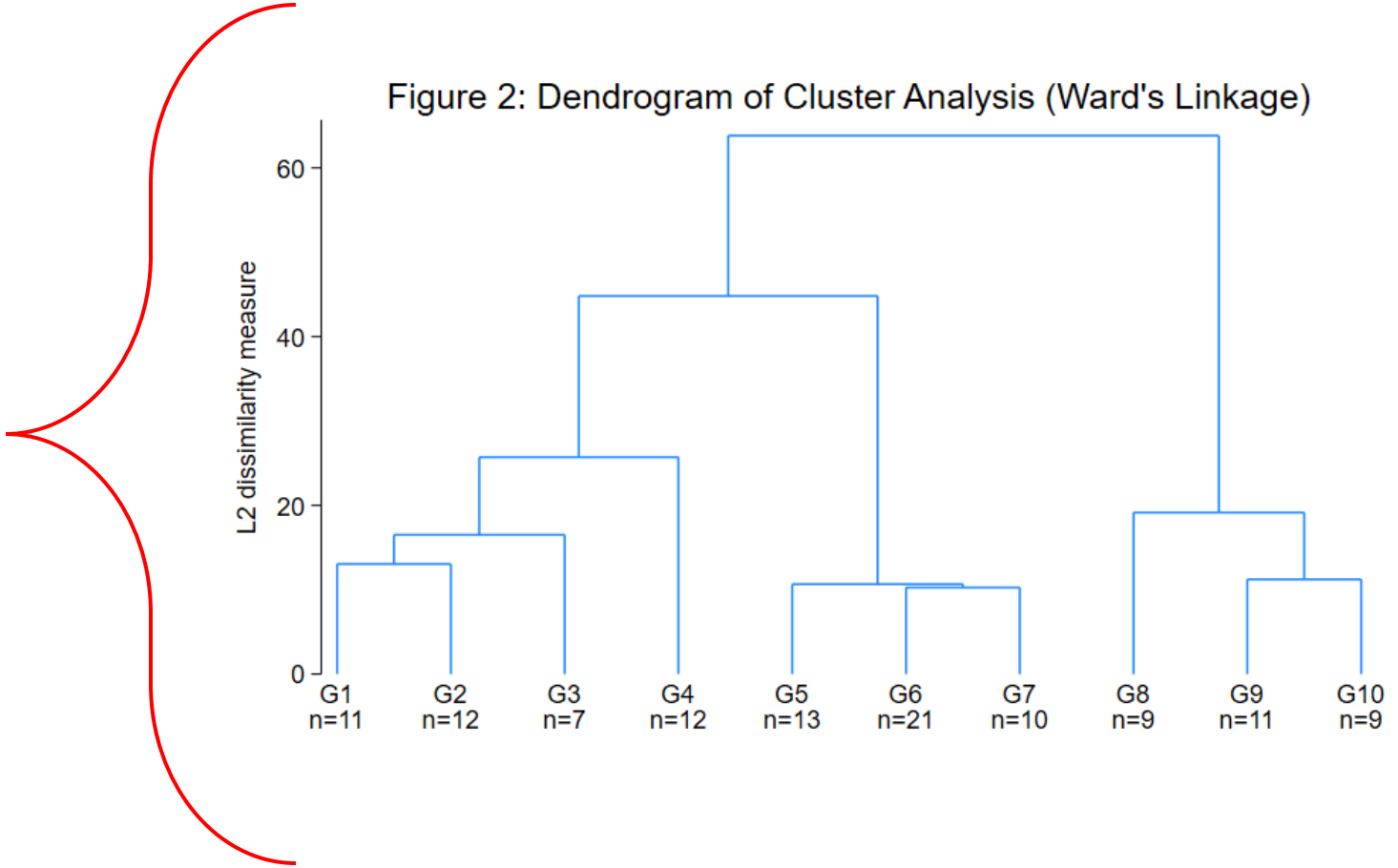
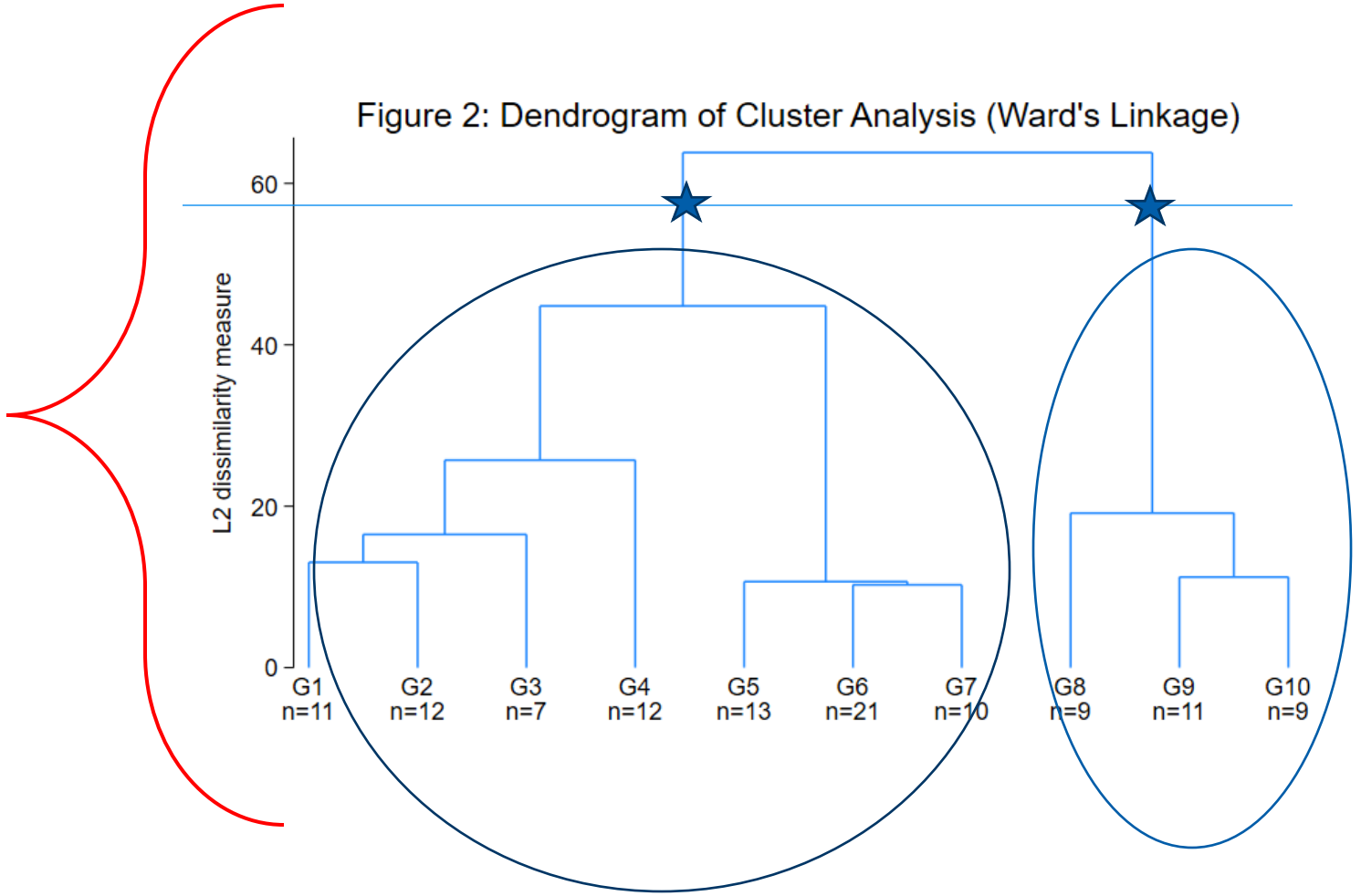


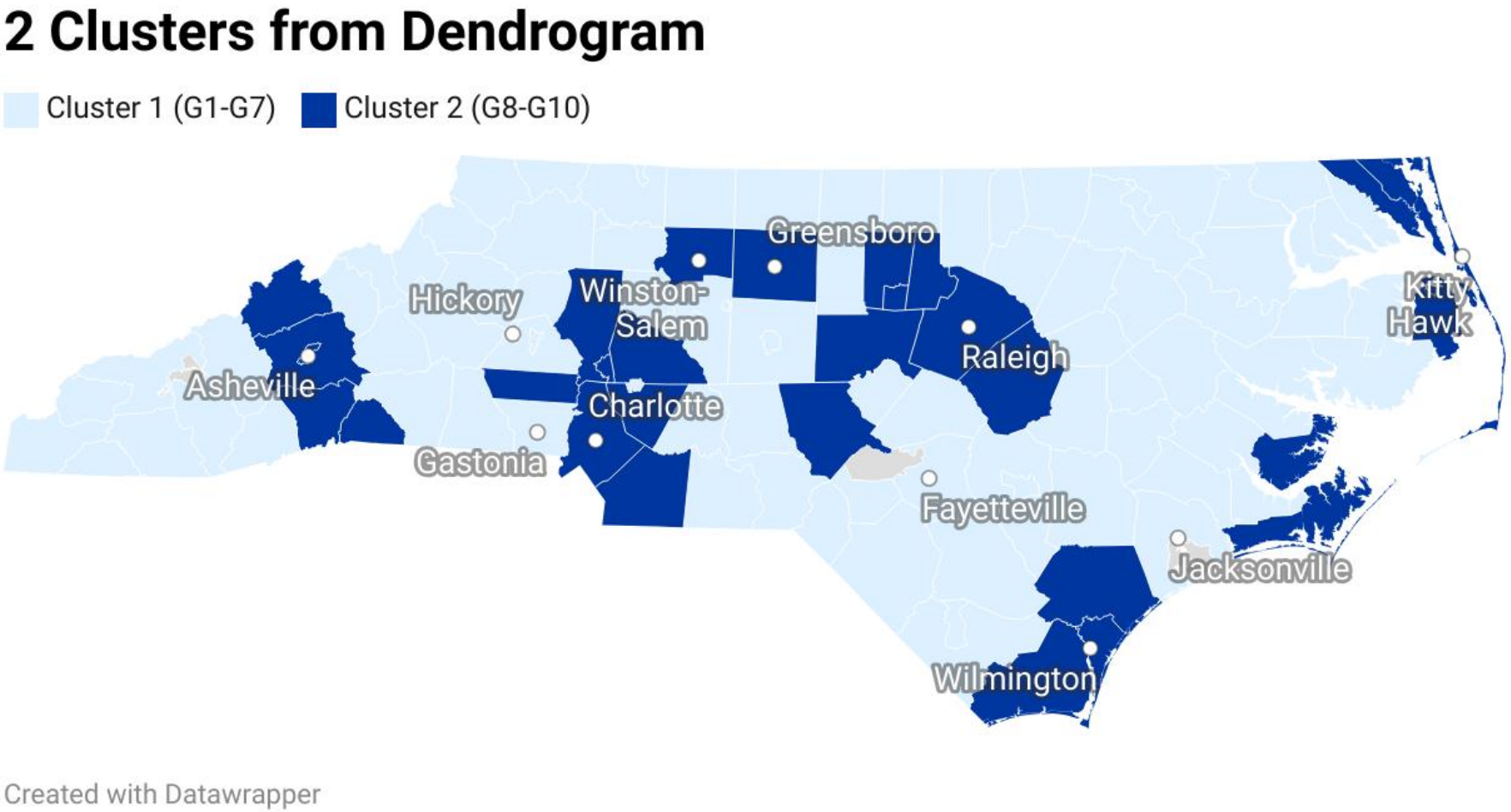
Dendrogram

- As we go up the Y-axis, district groupings become larger and more different

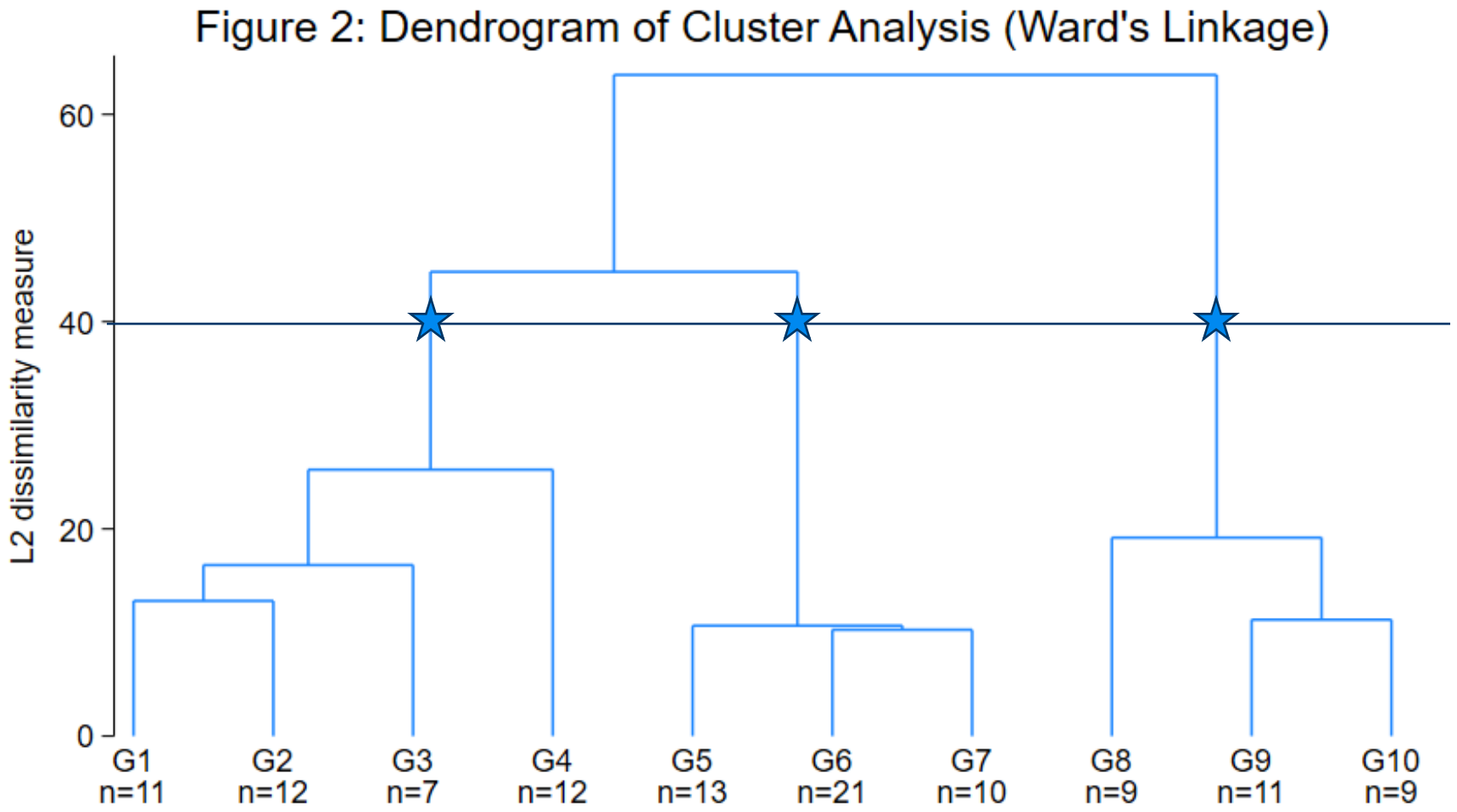
- Trade-off – more variation among districts in the groups



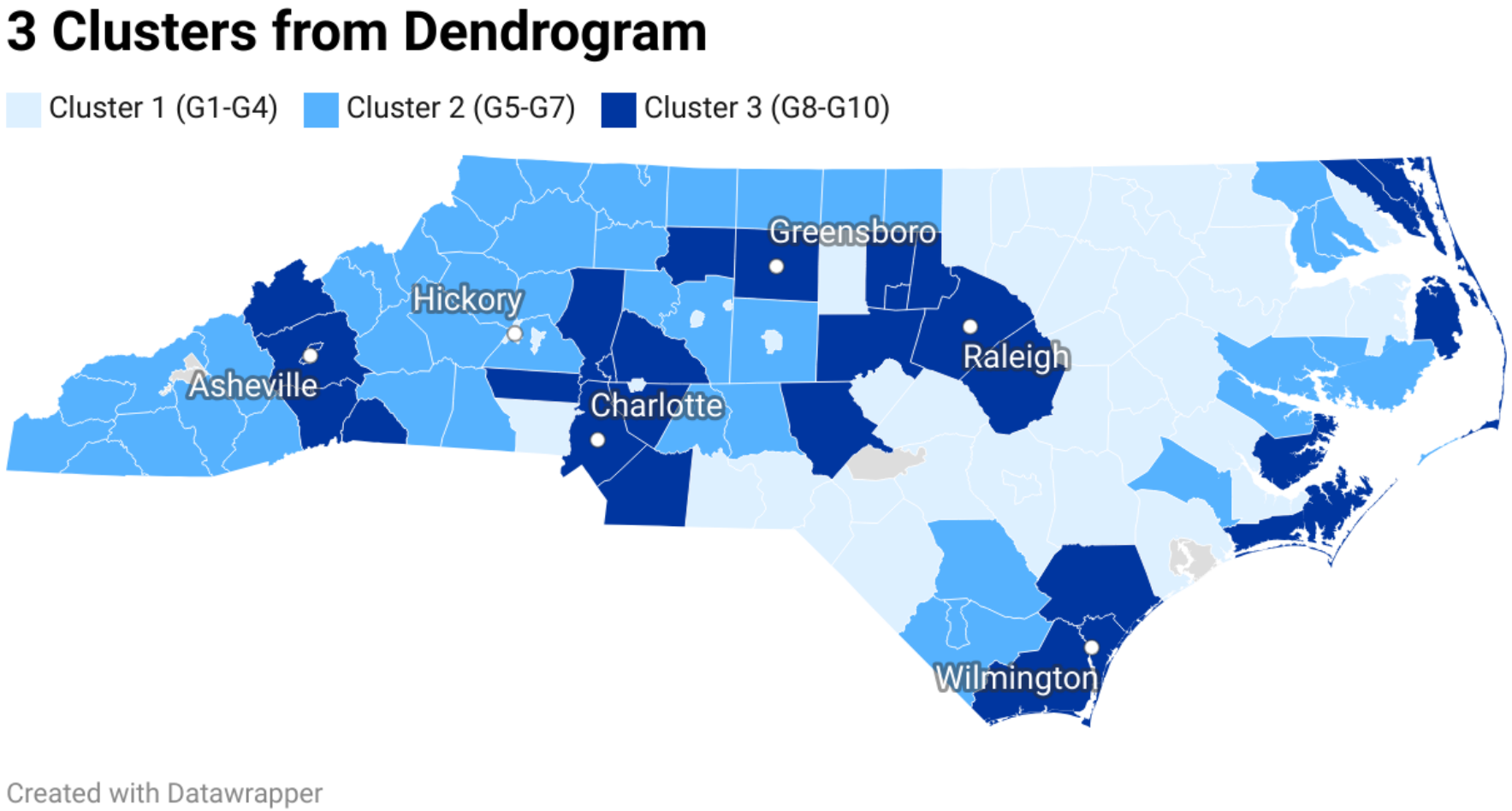
Not intuitive or useful.



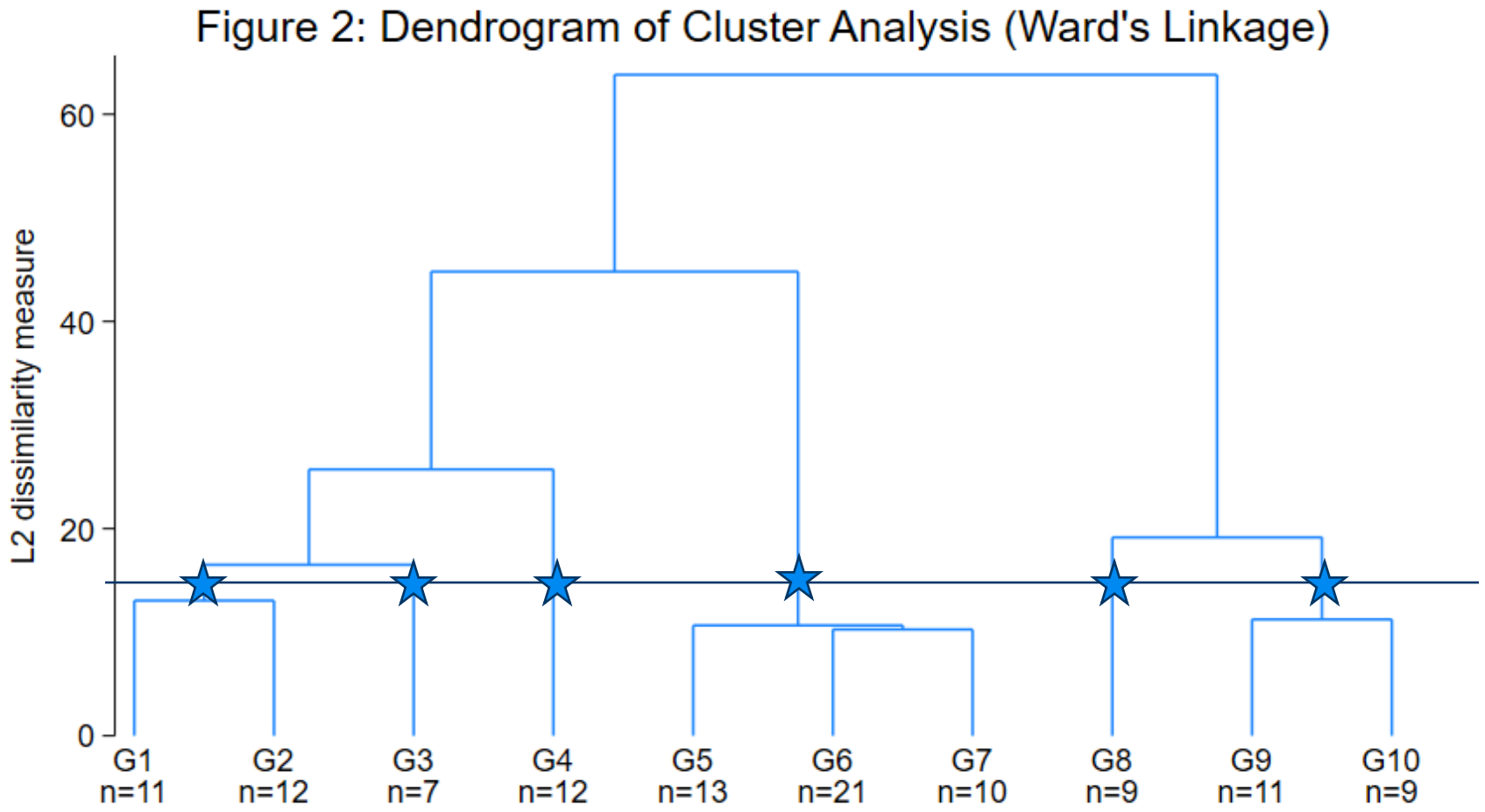
Ward's Linkage Dendrogram



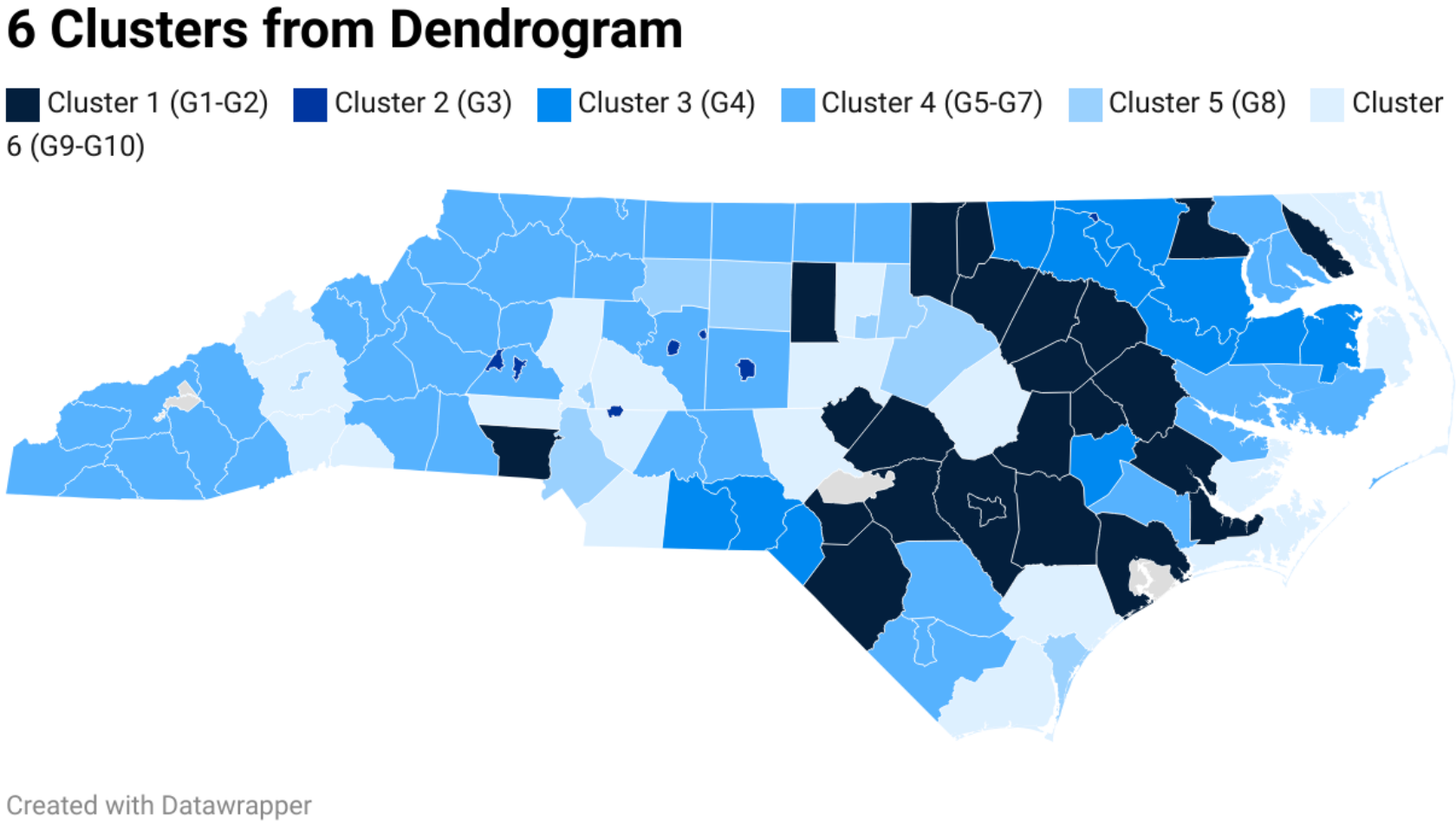
Better, but still not intuitive or useful



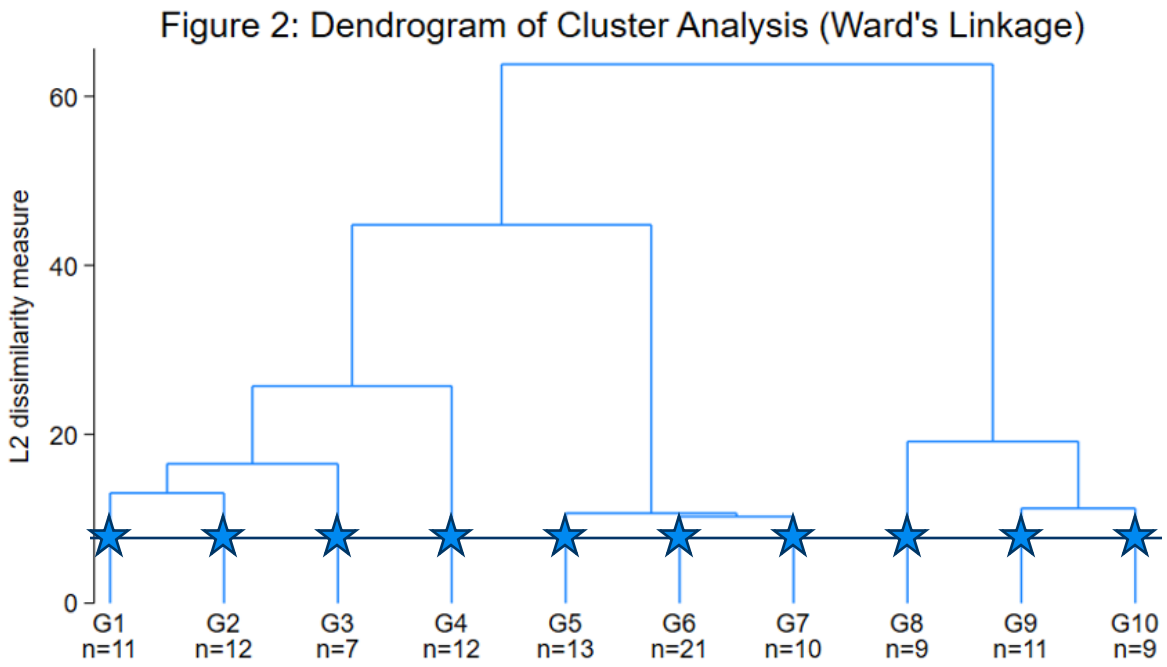
Ward's Linkage Dendrogram



Still Large Variation in Cluster Size

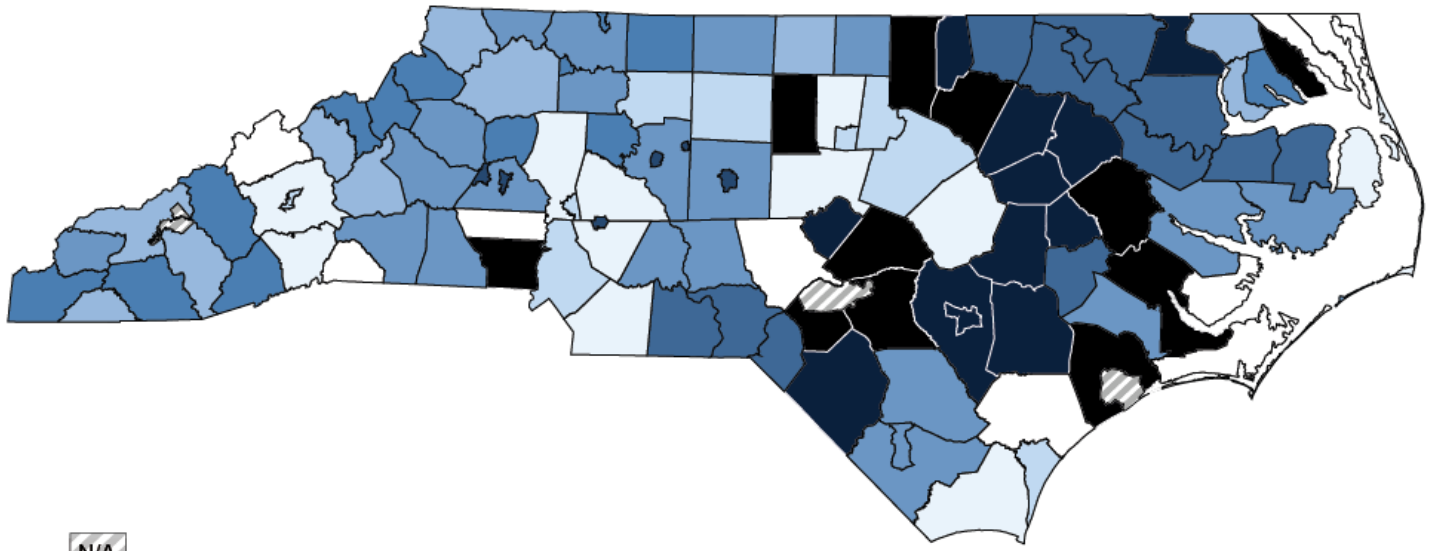


Grouping NC School Districts into 10 groups best meets our criteria.



- Maintains variation across clusters
- Has low within-cluster variation
- Produces results that are intuitive and practical

2025 North Carolina School District Typology



N/A *corresponds to Camp Lejune Schools, Eastern Band of Cherokee Indians Department of Education, and Fort Bragg Schools.*

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8	Group 9	Group 10
• Alamance-Burlington Schools	• Clinton City Schools	• Asheboro City Schools	• Anson County Schools	• Alexander County Schools	• Alleghany County Schools	• Ashe County Schools	• Asheville City Schools	• Brunswick County Schools	• Camden County Schools
• Craven County Schools	• Duplin County Schools	• Hickory City Schools	• Bertie County Schools	• Avery County Schools	• Beaufort County Schools	• Caswell County Schools	• Chapel Hill-Carrboro Schools	• Buncombe County Schools	• Carteret County Schools
• Cumberland County Schools	• Edgecombe County Schools	• Kannapolis City Schools	• Halifax County Schools	• Cherokee County Schools	• Bladen County Schools	• Clay County Schools	• Charlotte-Mecklenburg Schools	• Cabarrus County Schools	• Currituck County Schools
• Franklin County Schools	• Greene County Schools	• Lexington City Schools	• Lenoir County Schools	• Davie County Schools	• Burke County Schools	• Edenton-Chowan Schools	• Durham Public Schools	• Chatham County Schools	• Lincoln County Schools
• Gaston County Schools	• Hertford County Schools	• Newton-Conover City Schools	• Martin County Schools	• Elkin City Schools	• Caldwell County Schools	• Gates County Schools	• Forsyth County Schools	• Dare County Schools	• Madison County Schools
• Granville County Schools	• Lee County Schools	• Roanoke Rapids City Schools	• Northampton County Schools	• Haywood County Schools	• Catawba County Schools	• Jackson County Schools	• Guilford County Schools	• Henderson County Schools	• Moore County Schools
• Harnett County Schools	• Nash-Rocky Mount Schools	• Thomasville City Schools	• Richmond County Schools	• Macon County Schools	• Cleveland County Schools	• McDowell County Schools	• Mooresville City Schools	• Iredell-Statesville Schools	• Pamlico County Schools
• Hoke County Schools	• Robeson County Schools		• Scotland County Schools	• Mitchell County Schools	• Columbus County Schools	• Swain County Schools	• New Hanover County Schools	• Johnston County Schools	• Pender County Schools
• Onslow County Schools	• Sampson County Schools		• Tyrrell County Schools	• Mount Airy City Schools	• Davidson County Schools	• Wilkes County Schools	• Wake County Schools	• Orange County Schools	• Polk County Schools
• Pasquotank County Schools	• Vance County Schools		• Warren County Schools	• Perquimans County Schools	• Graham County School	• Yancey County Schools		• Rowan-Salisbury Schools	
• Pitt County Schools	• Wayne County Public Schools		• Washington County Schools	• Stokes County Schools	• Jones County Schools			• Union County Public Schools	
	• Wilson County Schools		• Weldon City Schools	• Transylvania County Schools	• Hyde County Schools				
				• Watauga County Schools	• Montgomery County Schools				
					• Person County Schools				
					• Randolph County				

Work With Us

What questions do you have about your community?

What data do you need to make better decisions?

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