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# Media Ecosystems and Youth Voting

Profiles of County-Level  
Support for Civic Participation

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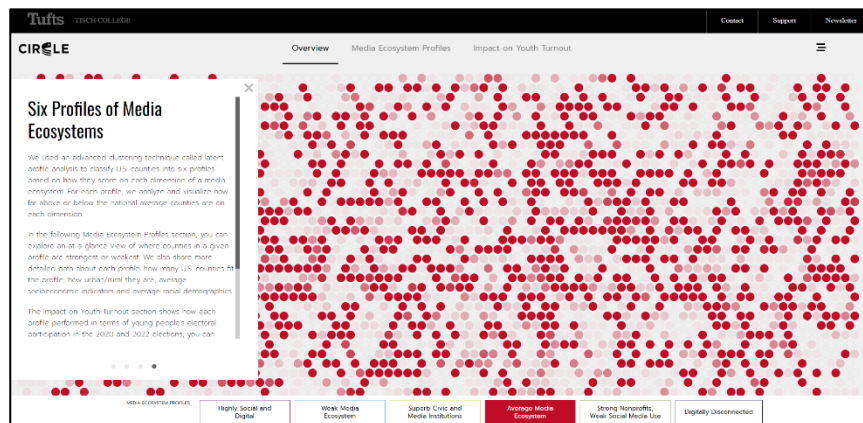
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## Explore and Visualize this Research

We created an interactive data visualization that lets users explore and compare each Media Ecosystem profile and its implications on youth voter turnout.

[Explore it here](#)



# Introduction

A complex, interconnected web of conditions in a community shapes young people's civic development, their access to information about politics and elections, and their ability to meaningfully participate in civic life.

We know that one major element of those conditions is the media, which can be simply defined as “all electronic, digital, and print means used to transmit messages.”<sup>1</sup> Research has often focused on how specific media (e.g., local news)<sup>2</sup> or interactions with media (e.g., social media use)<sup>3</sup> affect youth voting and other aspects of civic engagement. CIRCLE's own work has tackled topics like how young people create political content on social media<sup>4</sup> and how local news can help inform first-time voters about elections.<sup>5</sup>

## Support Needed to Access, Interpret, Act on Media

More recent research has begun to shed light on the ways in which the relationship between media and civic engagement is intricately tied to the availability of other assets in a community such as libraries, nonprofit organizations, and a culture of participation.

For example, libraries can serve as powerful non-partisan “political homes”<sup>6</sup> where youth can become empowered civic actors by providing them with up-to-date information about how to get involved in issues that they care about, while also developing their media literacy skills so that they can critically engage with this new information.<sup>7</sup>

In one analysis we found that membership in civic organizations can help to explain the link between youth's attention to news and their engagement in collaborative community change efforts, perhaps because the civic organizations provide young people with support for making sense of the news and understanding concrete paths for action.<sup>8</sup>

In terms of a culture of participation, work on *community storytelling networks* within communication infrastructure theory has focused on how civic engagement can depend on the investment in shared discourse and information-sharing by individuals and institutions.<sup>9</sup> The resources for storytelling

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<sup>1</sup> (National Association for Media Literacy Education, n.d.)

<sup>2</sup> (Abernathy 2018)

<sup>3</sup> (Xenos, Vromen, and Loader 2014)

<sup>4</sup> (Booth 2021a)

<sup>5</sup> (Booth 2021b)

<sup>6</sup> (Suzuki et al. 2023)

<sup>7</sup> (Booth and Sullivan 2023)

<sup>8</sup> (McGee et al. 2022)

<sup>9</sup> (Nah et al. 2021)

support civic engagement because it enables the community to form identity, discuss issues, and build strategies for action.<sup>10</sup>

## Strong Media Ecosystems Include More than Media Outlets

We take a **media ecosystems** approach to account for the ways in which the impact of media on civic engagement does not function separately from the systems that enable young people’s engagement with media as well as their civic participation. A media ecosystems approach thus takes into account both the “diverse and interactive” nature of media but also the reality of “uneven...quality and accessibility”<sup>11</sup> that can be embedded in systems.

For instance, some communities may have a lot of local media institutions alongside strong systems for accessing, interpreting, and acting on what they learn through the media. Although some may assume that most media institutions that youth interact with are national, our existing data suggests that’s not the case.<sup>12</sup> Therefore, environments with a high density of local media institutions may provide a foundation for high rates of youth civic engagement when organizations that support the civic development of young people are also in place.

At the same time, in some communities, some sources of information access and supporting institutions may be partially compensating for gaps within the media ecosystem. For example, access to broadband and a culture of sharing information online may make up for a dearth of local media outlets. In other places, non-digital/in-person support mechanisms may be instrumental where there is less access to high-speed internet or a weaker culture of online participation.

This work presents an analysis of youth civic engagement in relation to a snapshot of existing media ecosystems in the United States. As a result of the existing research mentioned above, we developed an exploratory analysis to build a set of dimensions at the county level and explore the variation in media ecosystems across the country. We further examined how different media ecosystems relate to other key characteristics of communities such as income inequality, rurality, and racial diversity. Importantly, we compared levels of youth voter turnout in the 2020 and 2022 elections between different media ecosystems.

## Five Dimensions of Media Ecosystems

To explore differences between media ecosystems in the U.S., we used counties as the unit of analysis. We first compiled numerous indicators available at the county level that provided information about a wide array of elements that may make up a community’s media ecosystem. These included both the

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<sup>10</sup> (Kim and Ball-Rokeach 2006)

<sup>11</sup> (Napoli et al. 2012)

<sup>12</sup> (Booth 2021b)

availability of different media, the existence of, and investment in important civic and media institutions, measures of a culture of participation, and systems for access to media. Next, we used exploratory factor analysis techniques to (a) narrow down the number of indicators into those that clearly distinguished between counties, and (b) collect indicators into dimensions of a media ecosystem. Some indicators were weak signals (for example, little variation between counties, or only very few counties had success on that indicator) and so were removed during this process, leaving behind only indicators that were strong signals.

Furthermore, indicators were grouped into dimensions based on their similarity to each other: for example, the number of newspapers in a county was grouped together with the number of radio and TV stations in a county and the number of libraries in a county into a “media density” dimension. Exploratory factor analysis allowed us to create dimensions that uniquely describe the media ecosystem of counties, while also collecting indicators together based on similarity so that we could perform analyses on fewer variables. The resulting five dimensions are summarized below.

**Media Density** - The number of newspapers, AM/FM radio stations, television stations, and libraries per capita. We include libraries here because they’re a potential source of information in a community and a place to access physical and digital media.

**Digital Access** - The percentage of the county with broadband internet access and the percentage of residents in a county with one or more internet-connected devices.

**Social Media Use** - The percentage of residents in a county that has visited social media in the past 30 days. While this data cannot tell us how young people are using these platforms, we know that social media networks are both a critical source of political information for youth<sup>13</sup> and a space where they create and share media about issues and elections.<sup>14</sup>

**Library Investment** - The number of library staff per capita and library revenue per capita in a county. While we include libraries per capita in the media density data, we do not believe the mere presence of a library is enough if it is understaffed or under-resourced. Therefore, this dimension attempts to capture the extent to which libraries are supported in a community and able to take on a role as a civic and media hub and/or space for youth media creation).<sup>15</sup>

**Nonprofit Density** - The number of nonprofit organizations per capita in a county that are likely to provide significant benefits to community members. Specifically, previous research has found that these types of nonprofits were associated with a change in unemployment rate.<sup>16</sup> Collectively, these organizations provide direct, tangible benefits to their members; organizations that foster peer-to-peer interactions and collective decision-making; and organizations where membership entails more than

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<sup>13</sup> (CIRCLE 2021)

<sup>14</sup> (Booth 2021a)

<sup>15</sup> (Booth and Sullivan 2023)

<sup>16</sup> (Kawashima-Ginsberg, Lim, and Levine 2012)

joining a mailing list and instead requires a commitment from its members to undertaking the actions of the organization. Nonprofits can also be sites for media creation, acquiring and processing civic information, and learning media literacy skills.

For more details about the data that were used to create these dimensions, **please see Appendix A.**

## About the Analysis

Using the five dimensions of media ecosystems described above, we used an advanced clustering technique, latent profile analysis, to classify U.S. counties into several profiles. During this process, several outlier counties—i.e., counties that were extremely low or extremely high on one or more dimensions—were removed. Latent profile analysis allowed us to create profiles that each have a unique footprint in terms of the five dimensions of media ecosystems, making the profiles distinct from each other. Statistical metrics of model fit such as the Bayesian Information Criterion were used to guide how many profiles we used to describe the county-level data.

The result of our analyses revealed that counties could be described using six profiles. That is, when considering counties on the five dimensions of media ecosystems, we find there are six profiles of media ecosystems that each have a unique footprint on the dimensions.

We conducted additional analyses to determine three important types of characteristics of each profile. First, we calculated the “footprint” each profile has on the dimensions by understanding how far above or below the national average they are on each dimension. Each profile was given a Z-score on the dimension, which is anchored at 0 for the national average and provides the distance from the average in standard deviations.

The radial plots for each profile depict the “footprint” of each profile on the five dimensions. The main axis radiates out from the center of the plot and is in Z-scores, with the bolded 0 line being the national average on the dimensions.

Second, we describe how each of the profiles is related to equity-related indicators at the county level, and provide the national average on the indicator for comparison. For example, we calculated the county Gini coefficient as an indicator of income inequality and contrasted it to the average Gini coefficient for all counties in the nation. We also looked at how the profiles are related to youth voter turnout in the two most recent national elections. While voting is not the only meaningful form of civic participation, turnout rates can serve as a key measure to identify where, and among whom, engagement is weakest or strongest.

In these analyses, counties contribute their data proportional to the probability that they are in a profile. For example, if a county is 70% likely to be in a profile, 70% of its data contributed to the

average Gini coefficient for that profile. This analytical technique gave us a nuanced understanding of the characteristics of each profile.

Tables of results can be found in Appendix B.

## Summary: Lessons and Implications

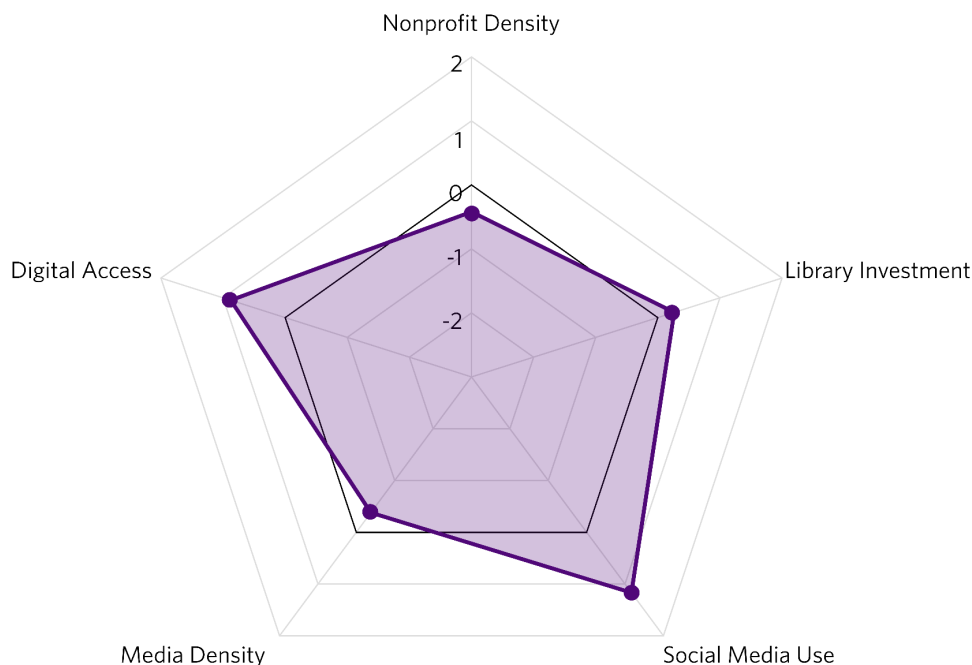
This study and the resulting profiles of media ecosystems highlight key lessons for stakeholders in the media and across different fields and industries that intersect with media—or should do so more fully and strategically to support young people’s civic engagement:

- **An Ecosystems Approach Is Necessary:** A single type of institution or civic support (including a high number of media outlets) is not enough to lead to higher youth participation. On average, the communities with highest youth turnout in recent elections are those where multiple dimensions are strong—and may be intersecting.
- **Strong Media Ecosystems are the Exception:** Only a small percentage of U.S. counties stand out for having superb media ecosystems, though no profile scores highly on all dimensions. A majority have weak or “average” media ecosystems, but even average media ecosystems are still associated with below-average youth voter turnout.
- **Local Conditions Require Local Action:** The media ecosystem in a particular community might be vastly different than that of a neighboring county, and local institutions have a significant impact on the support for youth civic engagement.
- **Compounding Inequities Must be Addressed:** The county-level profiles with the weakest media ecosystems are often those with a higher proportion of youth of color, lower household income, and other factors that stem from broader inequality that must be addressed.

We encourage readers to read the full report, [explore the website](#), and study the data in the appendices to fully glean the implications and recommendations that arise from this research. Many of the key takeaways can be connected to and pursued through the recommendations in our [CIRCLE Growing Voters framework](#) for creating diverse pathways of access and support for more equitable youth participation in democracy.

# Six Profiles of Media Ecosystems in America

## Highly Social and Digital



- **Prevalence and geographic distribution of profile:** Approximately 16% of counties, spread across the nation but mostly urban
- **Demographics:** Highest share of Hispanic/Latino and Asian residents, moderate share of Black residents, highest household income
- **Example counties:**<sup>17</sup> Hamilton County, Indiana; Delaware County, Ohio; Boone County, Kentucky; Kendall County, Illinois; Oldham County, Kentucky; King County, Washington
- **Youth voting:** Above-average youth turnout in 2020 and 2022

On average, counties with a **Highly Social and Digital** media ecosystem have scores on Nonprofit Density and Media Density slightly below the national mean, but above-average scores on Digital Access and Social Media. The Library Investment score for this profile was above average but varied considerably, meaning that the profile includes some counties where investment is much lower or higher than the level indicated in the radial plot.

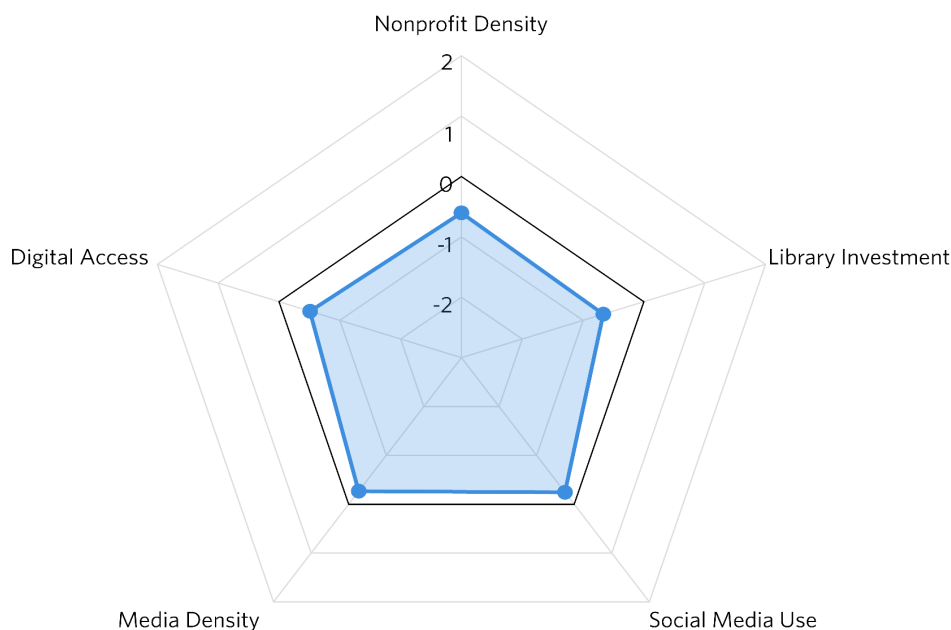
<sup>17</sup> Six example counties are listed for each profile—these six counties were the counties with the largest population from among the counties that were most likely to be in that profile.



Overall, the **Highly Social and Digital** profile describes urban places across the country where people are more easily and frequently connected online. These online connections appear to be making up for the relative lack of media institutions and nonprofit organizations: in both 2020 and 2022, **Highly Social and Digital** counties had the second-highest youth voter turnout rates compared to other media ecosystem profiles, and above-average youth turnout compared to CIRCLE estimates of national youth turnout in both cycles. That’s especially notable because these counties have a higher proportion of residents of color than other profiles. Youth of color have often voted at lower rates than White youth, including in those two elections.

Young people who enjoy a **Highly Social and Digital** media ecosystem—in some cases, with the support of well-resourced local libraries—could be taking advantage of myriad digital opportunities for civic participation. They may be registering to vote online, seeing information about elections and issues on social media, and creating content to share their opinions and engage in activism with peers.

## Weak Media Ecosystem

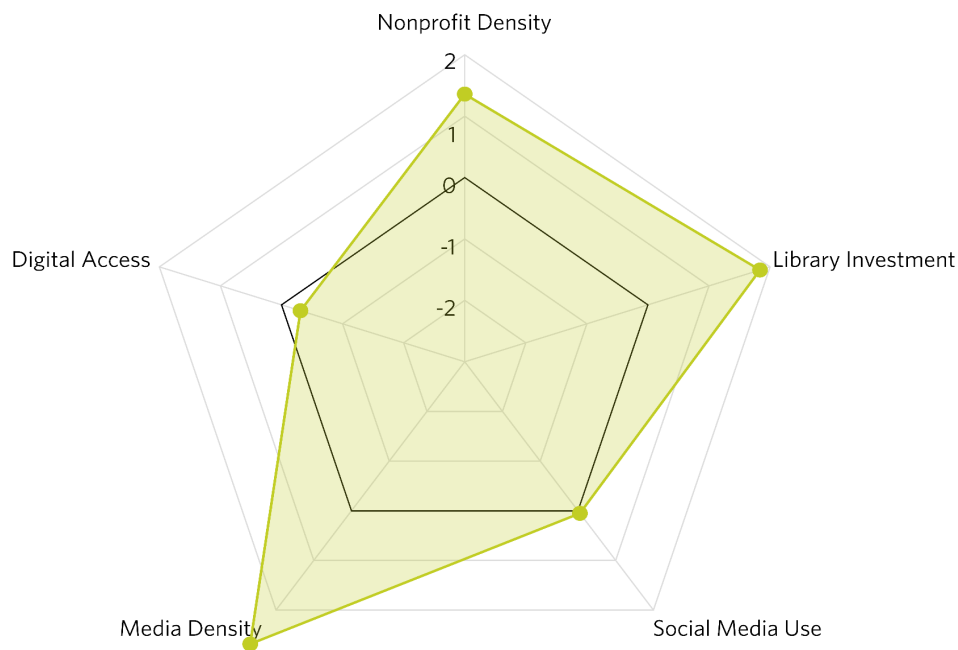


- **Prevalence and geographic distribution:** Approximately 23% of counties, predominantly in the South
- **Demographics:** High share of Black residents, low household income, high level of income inequality
- **Example counties:** Chesterfield County, South Carolina; Neshoba County, Mississippi; Caswell County, North Carolina; Gadsden County, Florida; Hardeman County, Tennessee; Cannon County, Tennessee
- **Youth voting:** Lowest youth voter turnout in 2020 and 2022

Making up nearly one-fourth of all counties in the country, communities with a **Weak Media Ecosystem** score below average on all dimensions, especially on Library Investment and Nonprofit Density. Unlike in other counties, where strengths in some areas may somewhat compensate for weaknesses in others, the counties with this profile may struggle to provide young people with adequate and equal opportunities for civic learning and engagement through media. Not surprisingly, compared to the other profiles, youth in these counties had the lowest voter turnout of any profile in both 2020 and 2022.

The **Weak Media Ecosystem** profile exemplifies some of the ways that social, economic, and racial/ethnic inequities may be tied to challenges for communities' media ecosystem. This profile, which includes both urban and rural communities in the South, has the highest proportion of Black residents. It also has among the lowest median household income and the highest income inequality of all the profiles in our analysis. It takes resources to adequately fund institutions like local media and public libraries. The counties' lower scores on those dimensions may reflect socioeconomic challenges.

## Superb Civic and Media Institutions



- **Prevalence and geographic distribution of profile:** Approximately 4% of counties, more likely to be rural counties, mostly in the West
- **Demographics:** High proportion of white residents and residents in the "Other" racial category (not Asian, Black, Hispanic/Latino, or White), low proportion of Black residents, moderately high household income, low income inequality

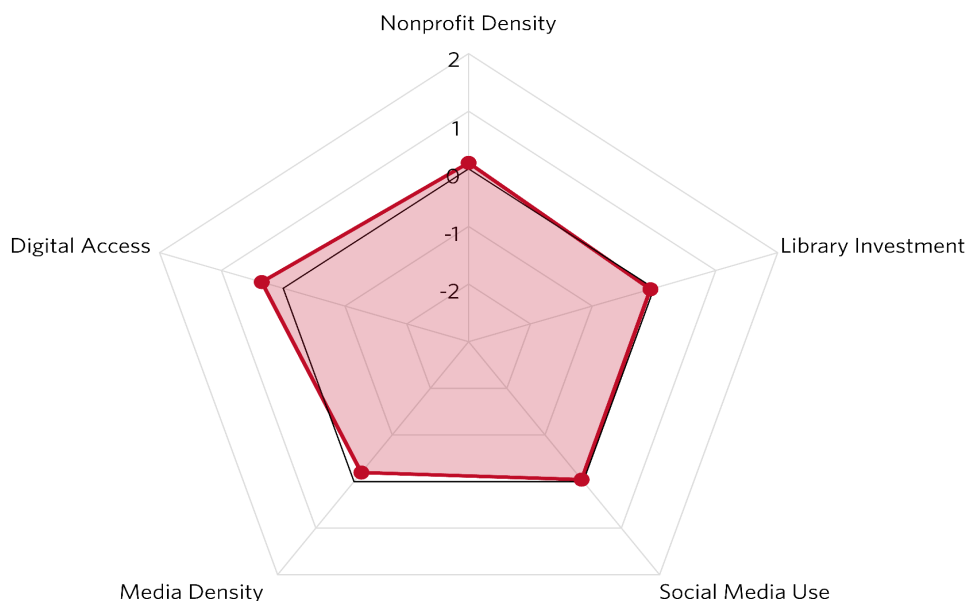
- **Example counties:** Levy County, Florida; Teton County, Wyoming; Pitkin County, Colorado; Dukes County, Massachusetts; Gunnison County, Colorado; Kossuth County, Iowa
- **Youth voting:** Highest youth voter turnout in 2020 and 2022

The **Superb Civic and Media Institutions** profile scores well above average on three dimensions: Nonprofit Density, Library Investment, and Media Density. In fact, the profile scores highest on Media Density out of all profiles, meaning that residents in these communities have information outlets available to them. However, this profile scores slightly below average on Digital Access, meaning that place-based civic and media institutions like newspapers and nonprofits may be facilitating civic information and opportunities that residents find relatively harder to access online. Library Investment is above average overall but has high variation, meaning that some counties scored significantly above and some below the score for the entire profile.

Only about 4% of counties in the United States fall into this **Superb Civic and Media Institutions** profile that is defined by the strong presence and investment of organizations. These counties, which tend to be located in the West of the country, have moderately high levels of median household income and low levels of income inequality. Compared to other profiles, they have a high proportion of White residents and residents identifying as “Other.” Compared to those in the other media ecosystem profiles, these are the most rural counties.

Compared to other profiles, these are also the counties with the highest youth voter turnout in the United States in recent elections: nearly 70% in 2020 and 10 points above the national turnout rate in 2022. That’s particularly notable given the rurality of these counties and underscores the powerful role that **Superb Civic and Media Institutions** can play as ‘oases’ in what can otherwise be civic deserts where resources like broadband may be challenging and where youth can find it hard to access civic opportunities.

## Average Media Ecosystem

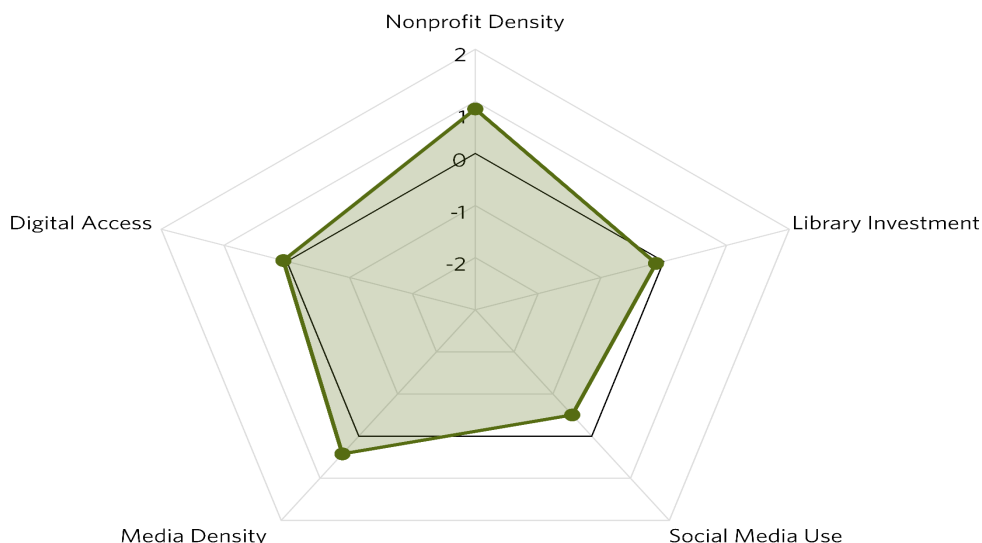


- **Prevalence and geographic distribution:** Approximately 33% of counties, mainly in the Midwest
- **Demographics:** Highest proportion of White residents and lowest share of Hispanic/Latino residents, average household income
- **Example counties:** Douglas County, Illinois; Webster County, Iowa; Livingston County, Illinois; Williamson County, Illinois; Delaware County, Iowa; Blanco County, Texas
- **Youth voting:** Below-average youth turnout in 2020 and 2022

As the name suggests, counties with an **Average Media Ecosystem** profile score right around the mean on most dimensions, though slightly higher on digital access—in fact, the second-highest score on this measure after the Highly Social and Digital counties. A third of counties in the United States (33%) fall into this profile, which has the lowest proportion of Hispanic/Latino residents and the highest share of White residents compared to other profiles.

The **Average Media Ecosystem** profile had below-average youth voter turnout in both 2020 and 2022. This may suggest that strong online access and digital tools alone cannot sustain access to election information and robust civic engagement for young people. It also underscores that average is not synonymous with *adequate* and that the mean level of access to media and media institutions serving youth in a plurality of communities is not meeting their needs.

## Strong Nonprofits, Weak Social Media Use

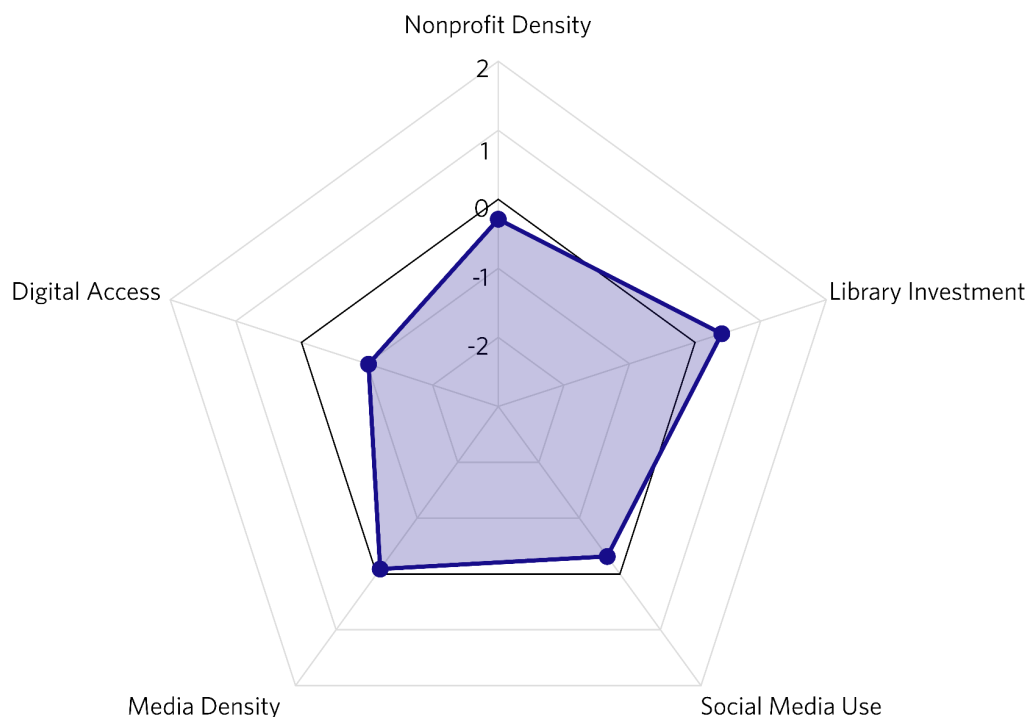


- **Prevalence and geographic distribution:** Approximately 14% of counties, mainly in the Midwest, but also in the South and West; tend to be more rural
- **Demographics:** High share of White residents, lowest proportion of Black residents, moderately high household income
- **Example counties:** Plumas County, California; Inyo County, California; Fergus County, Montana; Luce County, Michigan; Phillips County, Kansas; Nuckolls County, Nebraska
- **Youth voting:** Above-average youth turnout in 2020 and 2022

The **Strong Nonprofits, Weak Social Media Use** profile scores well above average in Nonprofit Density and slightly above average in Media Density. Meanwhile, its score on Digital Access and Library Investment are average and Social Media Use is below average. Communities with this profile may be taking advantage of the access to resources and information provided by local organizations like nonprofits, local public media, and libraries to learn more about issues, and these organizations may be serving as spaces where youth can acquire and share information with others.

On average, the U.S. counties with a **Strong Nonprofits, Weak Social Media Use** profile have a higher proportion of white residents and this profile has the lowest proportion of Black residents out of all profiles. These counties, which have relatively low income inequality, are also among the most rural in the country, again underscoring the role institutions like public libraries can play in communities that may otherwise have few civic resources or support systems. That work appears to be having an impact: the youth voter turnout of counties with this profile was above average in 2020 and 2022.

## Digitally Disconnected



- **Prevalence and geographic distribution:** Approximately 10% of counties, especially moderately rural counties in the South
- **Demographics:** High share of Black residents, lowest household income, high income inequality
- **Example counties:** Webster Parish, Louisiana; Richland Parish, Louisiana; Claiborne Parish, Louisiana; Upton County, Texas; Jasper County, Mississippi; Wilkes County, Georgia
- **Youth voting:** Second-lowest turnout in 2022, below-average in 2020

This profile stands out for a level of Digital Access that is significantly below average. Perhaps not surprisingly, this profile also scores slightly below average on Social Media Use. Scores on Nonprofit Density are slightly below average, while scores on Library Investment are slightly above average. Nevertheless, the civic opportunities and support provided by libraries alone do not appear to fully compensate for the lack of online connectivity evidenced by the counties' Digital Access score. While these communities' robust investment in libraries is laudable, our analysis underscores that these institutions can be most effective as part of a broader ecosystem of information and support for youth, not as the sole providers of it.

The counties in the **Digitally Disconnected** profile are concentrated in the South and tend to be more rural. They have higher proportions of Black residents, the lowest median household income, and the highest level of income inequality of any profile.

## Summary and Implications

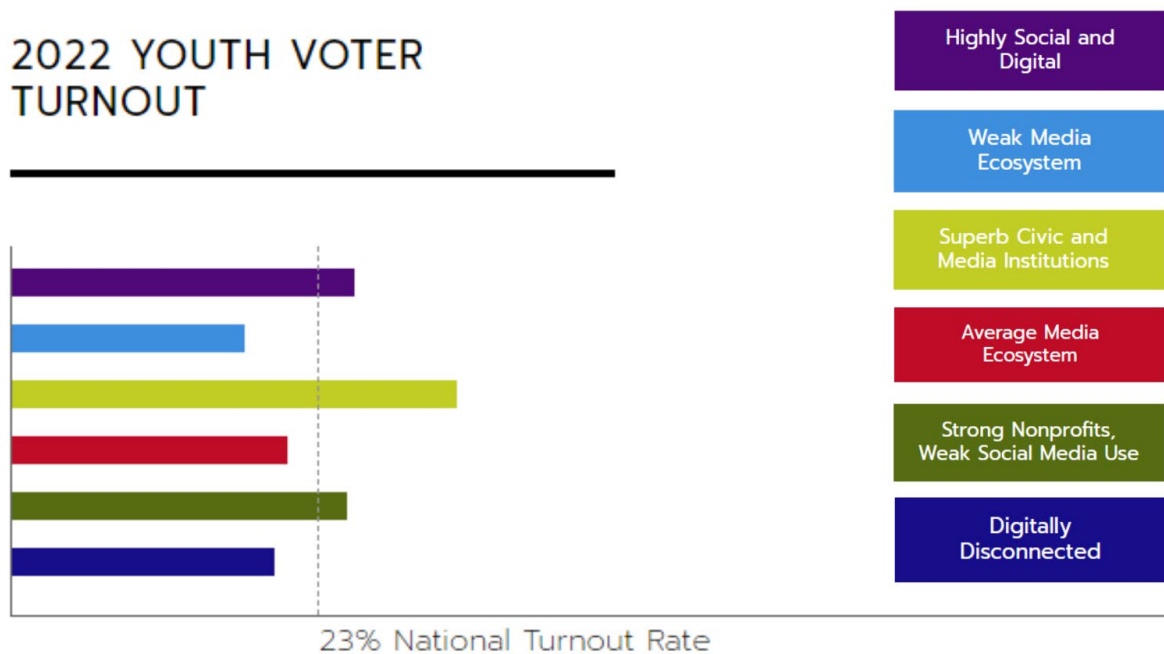
We set out to examine how variation in media ecosystems across our communities is related to youth civic engagement. We also explored how different media ecosystems relate to key characteristics of communities.

### No Counties Had High Scores Across All Dimensions

First, our analyses showed that five dimensions can clearly delineate different media ecosystems across U.S. counties. Moreover, our analyses revealed that communities have distinct patterns of strengths and weaknesses when it comes to their media ecosystem, such that while some communities scored low in all dimensions (i.e., the **Weak Media Ecosystem** profile), we did not find a set of counties that had high scores across all dimensions.

### Different Strengths Can Support Higher Youth Turnout

Overall, we found that there were three profiles that were linked to very strong or moderately strong youth voter turnout: **Highly Social and Digital**, the **Superb Civic and Media Institutions**, and **Strong Nonprofits, Weak Social Media Use**. It's telling that these three profiles achieve those positive results in different ways. In the **Highly Social and Digital** profile, youth civic engagement may be supported by a culture of accessing and sharing information online. In the two other profiles, where digital access and social media use were unremarkable or below average, it appears that robust civic and media institutions were critical for supporting youth civic engagement.



The fact that there is no profile in which every single dimension of a media ecosystem is above average also underscores that most communities have room for improvement in one or more areas. These improvements can have a cross-cutting positive impact, as many of these dimensions can be mutually supportive or reinforcing. For example, digitally savvy nonprofits can take advantage of strong social media use to attract potential members and engage young people on issues they already care about. Likewise, more local media outlets can inform young people about the resources and programming available at a well-supported local library. Our analysis suggests that if and when all of these elements are working together in a community, we may see even higher levels of youth voter participation.

## Weaker Media Ecosystems Are Connected to Other Inequalities

On the other hand, the **Weak Media Ecosystem** and **Digitally Disconnected** profiles had the lowest youth voter turnout rates in 2020 and 2022. Together these profiles encompass 33% of counties in the United States, meaning that a third of communities are not enjoying the benefits of a media ecosystem that supports their civic learning and engagement. The demographic similarities in these profiles are striking: both are predominantly in the South, with a high share of Black residents, low household income, and a high level of income inequality.

The weakness of media ecosystems and lack of digital access in these counties surely reflects broader racial and social inequities as well as historic disinvestment in these communities. Addressing these long-standing issues will require strong targeted investments made with an equity lens. While communities should focus on improving the areas where its media ecosystem is weakest (e.g., broadband internet availability in **Digitally Disconnected** communities), our analysis also highlights that it's often not enough for a county to be "average" on all dimensions; that can still produce relatively low voter participation. Stakeholders who want to improve media ecosystems in these communities would also do well to explore how they can support efforts that improve multiple dimensions: for example, more investment in public libraries may help these spaces improve digital access for their residents in counties where residents have lower access to broadband or internet-connected devices at home.



# Assessing How Your Community's Media Ecosystem Supports Youth Civic Engagement: Guiding Questions

At a moment when the provision of civic information is shifting and is threatened by mis- and disinformation, there is an opportunity to imagine what is possible in new ways and prioritize what aligns with the civic needs of communities and of democracy. This analysis provides a framework to better understand the impact of various media ecosystem profiles on young people's civic engagement in order to drive investment and action where it's needed. In future research, we hope to provide more granular data about how this is playing out in specific counties so that local stakeholders can engage in the efforts most relevant to their communities.

We encourage all potential stakeholders (policymakers, journalists, nonprofit leaders, librarians, teachers, parents, etc.) to start exploring what the media ecosystem looks like where they are. To that end, here are some guiding questions for assessing the health of your community's media ecosystem that can serve as a first step for assessing strengths and weaknesses and identifying where to take action.

1. Is there civic information available to youth that is relevant to them and accurately represents the wide diversity of youth in the community? Do youth know about and access the civic information that is relevant to them and accurately represents them?
2. Are there opportunities within the media ecosystem for youth to learn to navigate and process civic information, regardless of their level of experience with civic life?
3. Are there inclusive spaces for a wide diversity of youth to make meaning of civic information with others, including with their peers?
4. How are avenues for taking action on civic information distributed across your community? Are there differences in accessibility among youth?
5. Are key stakeholders across different elements of the media ecosystem in conversation to strengthen access and opportunities for young people's civic engagement?
6. Is youth-adult partnership present within the media ecosystem, in order to incorporate youth perspectives and input on how to strengthen different elements for more robust youth civic engagement?

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# Appendix A: Detailed Information on Variables

The following variables were used to create the five dimensions of media ecosystems:

Dimension	Variable Description	Source	Year	Link
Media density	The number of local newspapers per county divided by the population of the county	UNC Hussman School of Journalism and Media "The Expanding News Desert"	2020	<a href="https://www.usnewsdeserts.com/">https://www.usnewsdeserts.com/</a>
Media density	The number of AM, FM, and TV stations per county divided by the population of the county	Federal Communications Commission	2022	AM radio: <a href="https://www.fcc.gov/media/radio/am-query">https://www.fcc.gov/media/radio/am-query</a>  FM radio: <a href="https://www.fcc.gov/media/radio/fm-query">https://www.fcc.gov/media/radio/fm-query</a>  TV: <a href="https://www.fcc.gov/media/television/tv-query">https://www.fcc.gov/media/television/tv-query</a>
Media density	The number of libraries (central libraries, branch libraries, and bookmobiles) per county divided by the population of the county	Public Libraries Survey FY 2019	2019	<a href="https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey">https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey</a>
Digital access	The percentage of households in the county with one or more computing devices (of any type: desktop, laptop, smartphone, etc.)	American Community Survey 2015-2019	2019	<a href="https://data.census.gov/table?tid=ACSSST5Y2019.S2801">https://data.census.gov/table?tid=ACSSST5Y2019.S2801</a>
Digital access	The percentage of households in the	American Community Survey 2015-	2019	<a href="https://data.census.gov/table?tid=">https://data.census.gov/table?tid=</a>

Dimension	Variable Description	Source	Year	Link
	county with broadband (of any type: cellular data plan, cable, fiber optic, DSL, etc.)	2019		<a href="https://nces.edipedsdata.org/acsst5y2019/s2801">ACSST5Y2019.S2801</a>
Library investment	Number of FTE paid librarians with master's degrees from programs of library and information studies accredited by the American Library Association, divided by the population of the county	Public Libraries Survey FY 2019	2019	<a href="https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey">https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey</a>
Library investment	Total operating revenue of libraries in the county, divided by the population of the county	Public Libraries Survey FY 2019	2019	<a href="https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey">https://www.ims.gov/research-evaluation/data-collection/public-libraries-survey</a>
Nonprofit density	<p>The number of unemployment-related nonprofits in the county, divided by the population of the county</p> <p>Unemployment-related nonprofits are those identified in the <a href="#">2012 NCOOC report</a> (page 9) and have the following NTEE codes:</p> <ul style="list-style-type: none"> <li>● Public &amp; Social Benefits (W)</li> <li>● Mutual &amp; Member Benefits (Y)</li> <li>● Recreation &amp; Sports (N)</li> <li>● Employment (J)</li> <li>● Human Services (P)</li> <li>● Arts, Culture &amp; Humanities (A)</li> <li>● Health Care (E)</li> <li>● Housing &amp; Shelter (L)</li> <li>● Community Improvement &amp; Capacity Building (S)</li> <li>● Youth Development (O)</li> <li>● Voluntary Health Associations &amp; Medical Disciplines (G)</li> </ul>	National Center for Charitable Statistics Core Files FY 2019	2019	<a href="https://nccs-data.urban.org/data.php?ds=core">https://nccs-data.urban.org/data.php?ds=core</a>

Dimension	Variable Description	Source	Year	Link
	<ul style="list-style-type: none"> <li>Public Safety, Disaster Preparedness &amp; Relief (M)</li> <li>Food, Agriculture &amp; Nutrition (K)</li> <li>Crime &amp; Legal Related (I)</li> <li>Philanthropy, Volunteerism, Grantmaking Foundations (T)</li> <li>Science &amp; Technology (U)</li> </ul>			
Social media use	Percentage of households in the county that visited or used a social networking site in the past 30 days	Easy Analytic Software, Inc. (EASI) - Media Use 2020 Database	2020	<a href="https://dataplanet.sagepub.com/dataset/datasheet?id=18854C1EB739&amp;type=dasasheet">https://dataplanet.sagepub.com/dataset/datasheet?id=18854C1EB739&amp;type=dasasheet</a>
This variable was used in the creation of multiple dimensions	Population of the county	American Community Survey 2015-2019	2019	<a href="https://data.census.gov/table?tid=ACSDP5Y2019.DP05">https://data.census.gov/table?tid=ACSDP5Y2019.DP05</a>

The following variables were used to describe the characteristics of the six media ecosystem profiles.

Variable Description	Source	Year	Link
The rurality of a county expressed using the 2013 Rural-Urban Continuum Codes. 1 is the most urban and 9 is the most rural.	U.S. Department of Agriculture, Economic Research Service	2020	<a href="https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/">https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/</a>

Variable Description	Source	Year	Link
<p>The codes are defined as follows:</p> <p><i>Metropolitan Counties</i></p> <ul style="list-style-type: none"> <li>• 1 - Counties in metro areas of 1 million population or more</li> <li>• 2 - Counties in metro areas of 250,000 to 1 million population</li> <li>• 3 - Counties in metro areas of fewer than 250,000 population</li> </ul> <p><i>Nonmetropolitan Counties</i></p> <ul style="list-style-type: none"> <li>• 4 - Urban population of 20,000 or more, adjacent to a metro area</li> <li>• 5 - Urban population of 20,000 or more, not adjacent to a metro area</li> <li>• 6 - Urban population of 2,500 to 19,999, adjacent to a metro area</li> <li>• 7 - Urban population of 2,500 to 19,999, not adjacent to a metro area</li> <li>• 8 - Completely rural or less than 2,500 urban population, adjacent to a metro area</li> <li>• 9 - Completely rural or less than 2,500 urban population, not adjacent to a metro area</li> </ul>			
<p>The number of people in each county who identified as:</p> <p>Hispanic or Latino            White, not Hispanic or Latino            Black, not Hispanic or Latino            Asian, not Hispanic or Latino            Two or More Races or Other, not Hispanic or Latino</p>	<p>2020 Decennial Census P.L. 94-171 Redistricting Data - Table P2</p>	<p>2020</p>	<p><a href="https://data.census.gov/table?g=010XX00US\$0500000&amp;y=2020&amp;d=DEC+Redistricting+Data+(PL+94-171)&amp;tid=DECENNIALPL2020.P2">https://data.census.gov/table?g=010XX00US\$0500000&amp;y=2020&amp;d=DEC+Redistricting+Data+(PL+94-171)&amp;tid=DECENNIALPL2020.P2</a></p>
<p>Median annual household income in the county in 2019 inflation-adjusted dollars</p>	<p>American Community Survey 2015-2019</p>	<p>2019</p>	<p><a href="https://data.census.gov/table?q=S1901&amp;g=010XX00US\$0500000&amp;tid=ACSST5Y2019.S1901">https://data.census.gov/table?q=S1901&amp;g=010XX00US\$0500000&amp;tid=ACSST5Y2019.S1901</a></p>

Variable Description	Source	Year	Link
<p>Gini Index of Income Inequality for each county</p> <p>The Gini coefficient is on a scale of 0 (indicating perfect income equality, where each group on the income distribution ladder receives an equal share of the total household income in the country) to 1 (perfect inequality, where the group at the top the income distribution ladder has all of the total household income in the country).</p>	American Community Survey 2015-2019	2019	<a href="https://data.census.gov/table?q=B19083&amp;g=010XX00US\$0500000&amp;tid=ACSDT5Y2019.B19083">https://data.census.gov/table?q=B19083&amp;g=010XX00US\$0500000&amp;tid=ACSDT5Y2019.B19083</a>
<p>Youth voter turnout 2022</p> <p>This is the number of youth (ages 18-29) who voted in each county in 2022, divided by the number of citizens 18-29 in the county</p>	Analysis of Catalist data by CIRCLE	2022	Data are not publicly available
<p>Youth voter turnout 2020</p> <p>This is the number of youth (ages 18-29) who voted in each county in 2020, divided by the number of citizens 18-29 in the county</p>	Analysis of Catalist data by CIRCLE	2020	Data are not publicly available



## Appendix B: Detailed Tables of Findings

The following table presents the Z-scores and standard errors (in square brackets) of dimensions for each profile.

Profile	Nonprofit density	Library investment	Social media use	Media density	Digital access
Highly Social and Digital	-0.42 [0.03]	0.26 [0.46]	1.17 [0.02]	-0.38 [0.01]	0.88 [<0.01]
Weak Media Ecosystem	-0.60 [0.02]	-0.67 [0.14]	-0.24 [0.02]	-0.27 [0.02]	-0.51 [<0.01]
Superb Civic and Media Institutions	1.36 [0.17]	1.83 [1.66]	0.05 [0.03]	2.68 [0.64]	-0.31 [<0.01]
Average Media Ecosystem	0.10 [0.04]	-0.06 [0.31]	-0.04 [0.02]	-0.19 [0.02]	0.35 [<0.01]
Strong Nonprofits, Weak Social Media Use	0.85 [0.09]	-0.12 [0.31]	-0.50 [0.02]	0.42 [0.10]	0.05 [<0.01]
Digitally Disconnected	-0.29 [0.04]	0.41 [0.64]	-0.31 [0.02]	-0.09 [0.04]	-1.02 [<0.01]

The following table presents the approximate quantity of counties in the nation that can be classified into each profile:

Profile	Size of profile
Highly Social and Digital	16.0%
Weak Media Ecosystem	23.0%
Superb Civic and Media Institutions	4.2%
Average Media Ecosystem	32.8%
Strong Nonprofits, Weak Social Media Use	14.1%
Digitally Disconnected	9.9%

The following table presents the approximate proportion of counties in each profile that were in different geographic regions in the United States. Counties were classified into regions according to the [U.S. Census Bureau](#). All differences in proportions between profiles were statistically significant.

Profile	Northeast	Midwest	South	West
Highly Social and Digital	18.1%	26.8%	39.8%	15.4%
Weak Media Ecosystem	0.2%	2.9%	93.0%	3.9%
Superb Civic and Media Institutions	2.7%	11.1%	19.9%	66.3%
Average Media Ecosystem	15.3%	63.2%	12.9%	8.6%
Strong Nonprofits, Weak Social Media Use	1.2%	54.5%	14.9%	29.3%
Digitally Disconnected	None	10.9%	86.2%	2.9%

Below is a table of the average race-ethnicity breakdown of the county population, for each media ecosystem profile. Pairs of superscript letters within a column indicate statistically significant differences.

Profile	Asian, not Hispanic or Latino	Black, not Hispanic or Latino	Hispanic or Latino	Other, not Hispanic or Latino	White, not Hispanic or Latino
Highly Social and Digital	4.7% <sup>abcde</sup>	10.9% <sup>abcde</sup>	13.2% <sup>abcd</sup>	5.5% <sup>abc</sup>	65.7% <sup>abc</sup>
Weak Media Ecosystem	0.7% <sup>afgh</sup>	16.7% <sup>afgh</sup>	10.1% <sup>ae</sup>	6.1% <sup>de</sup>	66.4% <sup>def</sup>
Superb Civic and Media Institutions	1.8% <sup>bfi</sup>	2.0% <sup>bfi</sup>	9.7% <sup>bf</sup>	12.7% <sup>adefgh</sup>	73.8% <sup>adghi</sup>
Average Media Ecosystem	1.0% <sup>cgkl</sup>	3.9% <sup>cgilm</sup>	6.3% <sup>cefg</sup>	4.8% <sup>befij</sup>	84.0% <sup>begi</sup>

Profile	Asian, not Hispanic or Latino	Black, not Hispanic or Latino	Hispanic or Latino	Other, not Hispanic or Latino	White, not Hispanic or Latino
Strong Nonprofits, Weak Social Media Use	0.5% <sup>dik</sup>	0.4% <sup>dhjln</sup>	10.8% <sup>dg</sup>	6.1% <sup>gi</sup>	82.2% <sup>cfhk</sup>
Digitally Disconnected	0.4% <sup>ehjl</sup>	16.6% <sup>ekmn</sup>	12.9% <sup>h</sup>	7.6% <sup>chj</sup>	62.5% <sup>ijk</sup>

The following table shows the average rurality, average Gini coefficient, and average median household income for each media ecosystem profile. More details about these variables can be found in Appendix A. Pairs of superscript letters within a column indicate statistically significant differences.

Profile	Rurality (RUCC)	Gini coefficient	Median household income
Highly Social and Digital	1.29 <sup>abcde</sup>	0.44 <sup>ab</sup>	\$73,868.08 <sup>abcde</sup>
Weak Media Ecosystem	4.81 <sup>afgh</sup>	0.46 <sup>acde</sup>	\$44,484.71 <sup>afgh</sup>
Superb Civic and Media Institutions	7.65 <sup>bfij</sup>	0.43 <sup>cf</sup>	\$57,962.00 <sup>bfijk</sup>
Average Media Ecosystem	4.91 <sup>cikl</sup>	0.44 <sup>dg</sup>	\$53,333.61 <sup>cgil</sup>
Strong Nonprofits, Weak Social Media Use	7.50 <sup>dgkm</sup>	0.44 <sup>eh</sup>	\$52,675.65 <sup>dhjm</sup>
Digitally Disconnected	6.12 <sup>ehjlm</sup>	0.46 <sup>bfg</sup>	\$43,047.14 <sup>eklm</sup>

The table below shows the average youth turnout associated with each ecosystem profile. Pairs of superscript letters within a column indicate statistically significant differences.

Profile	Youth turnout - 2020	Youth turnout - 2022
Highly Social and Digital	58.5% <sup>abcd</sup>	25.9% <sup>abcd</sup>
Weak Media Ecosystem	45.9% <sup>aef</sup>	17.6% <sup>aefgh</sup>
Superb Civic and Media Institutions	68.2% <sup>beghi</sup>	33.6% <sup>beijk</sup>
Average Media Ecosystem	46.1% <sup>cgi</sup>	20.8% <sup>cfil</sup>
Strong Nonprofits, Weak Social Media Use	55.8% <sup>fhjk</sup>	25.3% <sup>gjlm</sup>
Digitally Disconnected	48.2% <sup>dik</sup>	19.8% <sup>dhkm</sup>

CIRCLE (The Center for Information & Research on Civic Learning and Engagement) is a nonpartisan, independent, academic research center that studies young people in politics and presents detailed data on young voters in all 50 states. **CIRCLE is part of the Jonathan M. Tisch College of Civic Life at Tufts University.**

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