



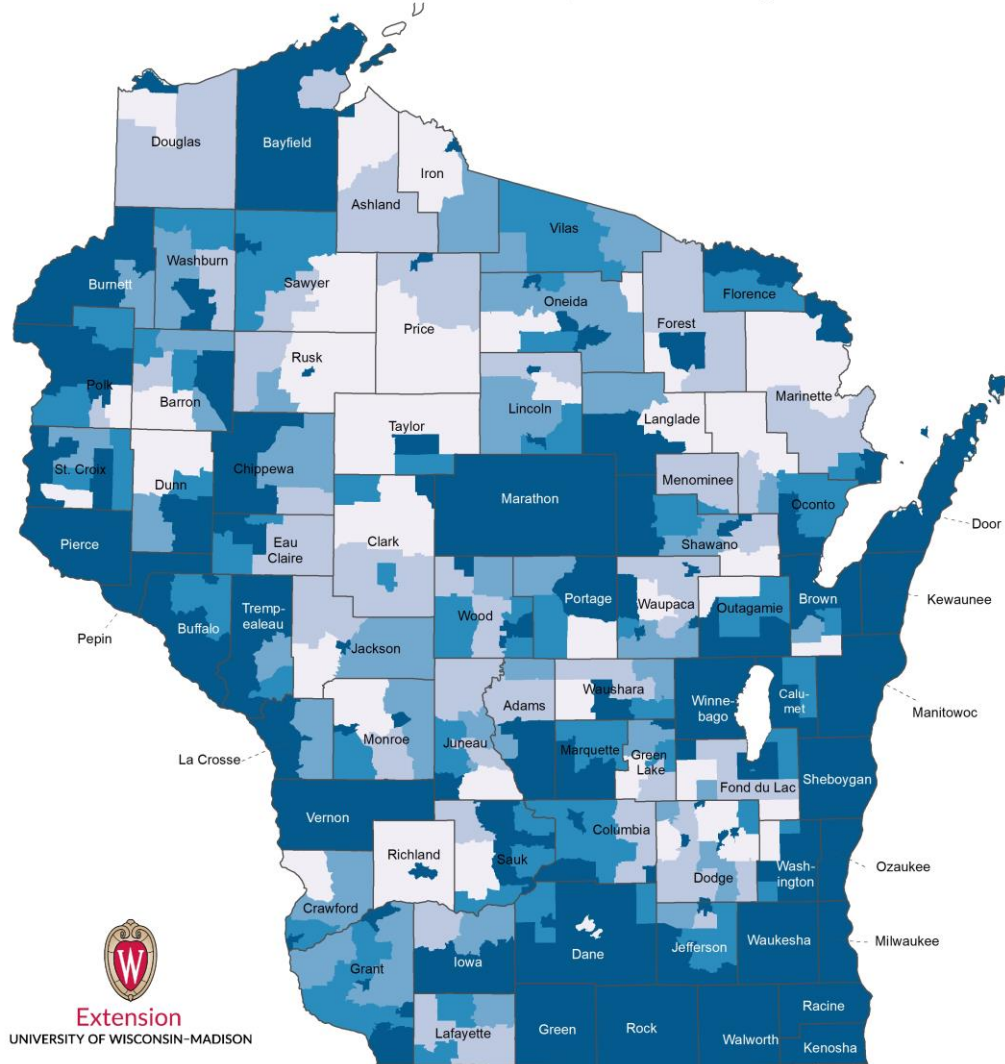
Broadband and the Wisconsin Economy

November 2021



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Share of Households with Access to Broadband (25/3 Mbps) June 2020 FCC Form 477 Data, Not Including Satellite

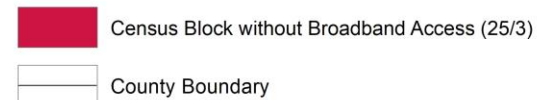
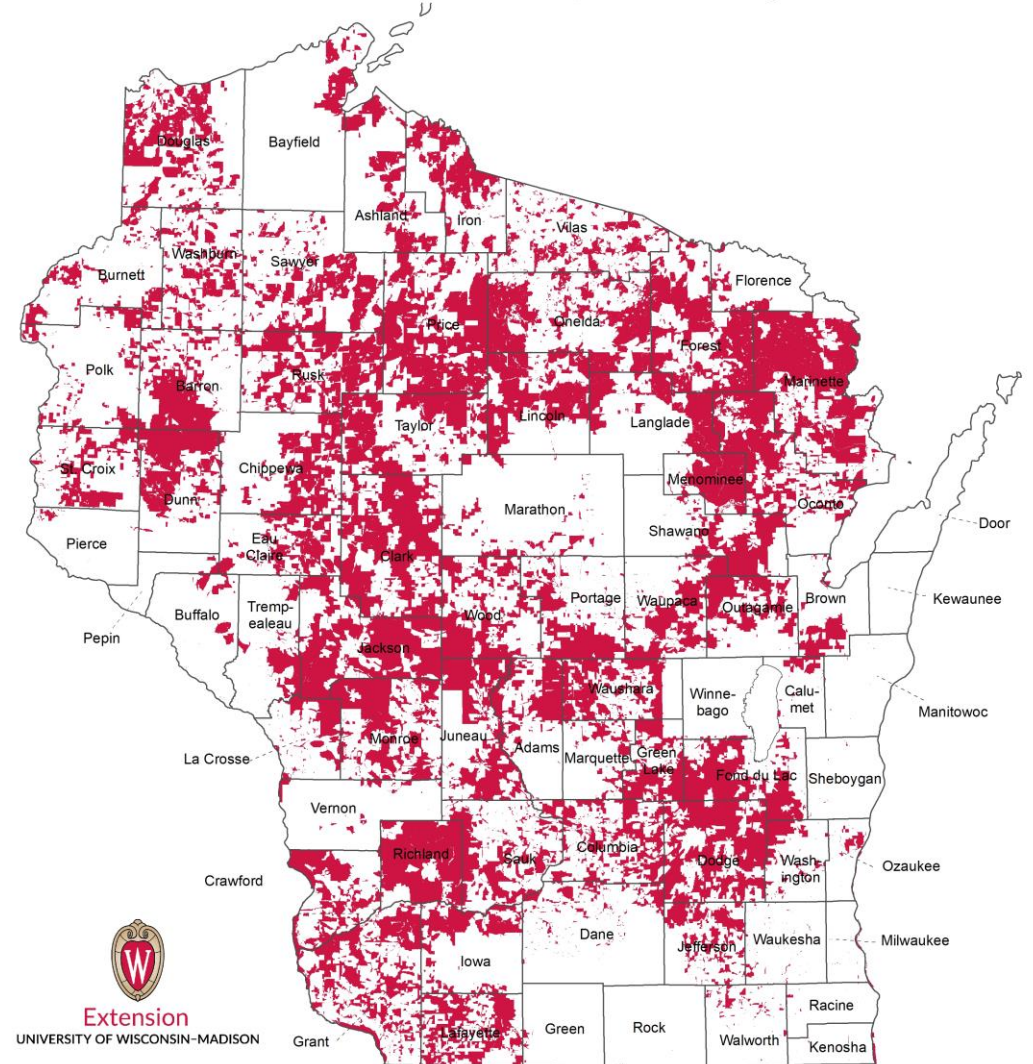


Census Tract Share of Households with Access to Broadband (25/3 Mbps)



Data Source: Federal Communications Commission Form 477. The data are aggregated from census block data where providers report whether they serve a given census block. There may be other addresses or locations within a given census block that do not have access. Upload and download speeds are based on advertised speeds, not necessarily actual speeds reported by users.

Census Blocks without Access to Broadband (25/3 Mbps) June 2020 FCC Form 477 Data, Not Including Satellite



Data Source: Federal Communications Commission Form 477. The data are aggregated from census block data where providers report whether they serve a given census block. There may be other addresses or locations within a given census block that do not have access. Upload and download speeds are based on advertised speeds, not necessarily actual speeds reported by users.

BROADBAND



JANUARY 2021

BROADBAND AND THE WISCONSIN ECONOMY

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Study Series No. 7

UNIVERSITY OF WISCONSIN-MADISON

BROADBAND



STRATEGIES AND POLICY OPTIONS FOR BROADBAND ACROSS WISCONSIN

JANUARY 2021

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BROADBAND

BROADBAND ACCESS AND AFFORDABILITY



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As people are spending more time at home due to the pandemic, the challenge of inadequate broadband in many parts of Wisconsin has gained greater attention. From working at home to education and healthcare, people without access to broadband are at a disadvantage. Those without broadband are often found in low-income and

Across the U.S., access to internet is more rural, meaning households in rural areas have less broadband. For example, in the most rural counties, close to 70% of households lack broadband, and far from a metro area, more disadvantaged, it suggests that

FIG 1 | PERCENT WIRED ACROSS

Completely rural or less than 2,500
Completely rural or less than 2,500

Urban population of 2,500

Urban population of 2,500

Urban population of 20,000

Urban population of 20,000

Metro +

Metro +

Met

density and income levels. population densities and/

These patterns raise an interest to have lower levels of community well-being? Is

To test the "robustness" of method, multivariate regression poverty. Whereas a simple population density and population broadband result still holds

A second element to this method referred to as "prior index. This method assesses broadband access. The variable weighting in the final index

Of the four internet access: no internet access, and or suggesting that all four measures suggests that when thinking higher value of the Broad

Once we control for population classified as rural (living in household income, we find values of the Broadband Index attainment (percent of the test scores, and lower level mental health days. The advanced statistical analysis: community well-being.

For the complete report, <https://www.wisconsinextension.org/center/the-wisconsin-university-center/the-wisconsin-university-center>

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BROADBAND AND COMMUNITY WELL-BEING



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Conroy et al. (2021) demonstrated the relationship between access to broadband and several measures of community well-being, in general. The analysis pointed to a positive relationship between broadband access and

BROADBAND

HOW AVAILABLE IS BROADBAND IN WISCONSIN?

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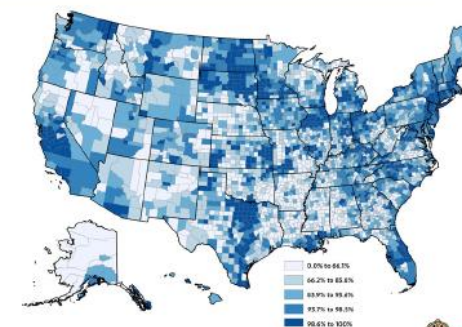
As quality of life and a growing number of everyday activities depend on technology and internet access, broadband is now necessary for a community to thrive. Communities that are pursuing economic development strategies centered on quality-of-life factors are finding that inadequate broadband—either lack of access or insufficient speed—hampers their progress. That means broadband must both

be available and of a high enough speed to be useful for the modern user. The Federal Communication Commission (FCC) currently defines broadband as at least 25 Mbps (transfer of "megabits per second") of download speed and at least 3 Mbps of upload speed. Since the COVID-19 Pandemic, the 25/3 broadband threshold established in 2015 has come under scrutiny for not being adequate.

FCC Form 477 data provides one means of examining access to broadband. Form 477 data are based on internet service providers (ISPs) indicating whether they serve at least one location in a given census block despite the presence of other addresses that may not have access. Accordingly, the FCC data can overestimate access. As upload and download speeds in the FCC data are based on advertised speeds, not necessarily those reported by users, the FCC data also may not accurately reflect the 25/3 broadband threshold. Nonetheless, the Form 477 data remain important as they are often used to determine the eligibility of communities and their service providers for federal grants

MAP 1

SHARE OF POPULATION WITH ACCESS TO BROADBAND (25/3 MBPS) BY U.S. COUNTY

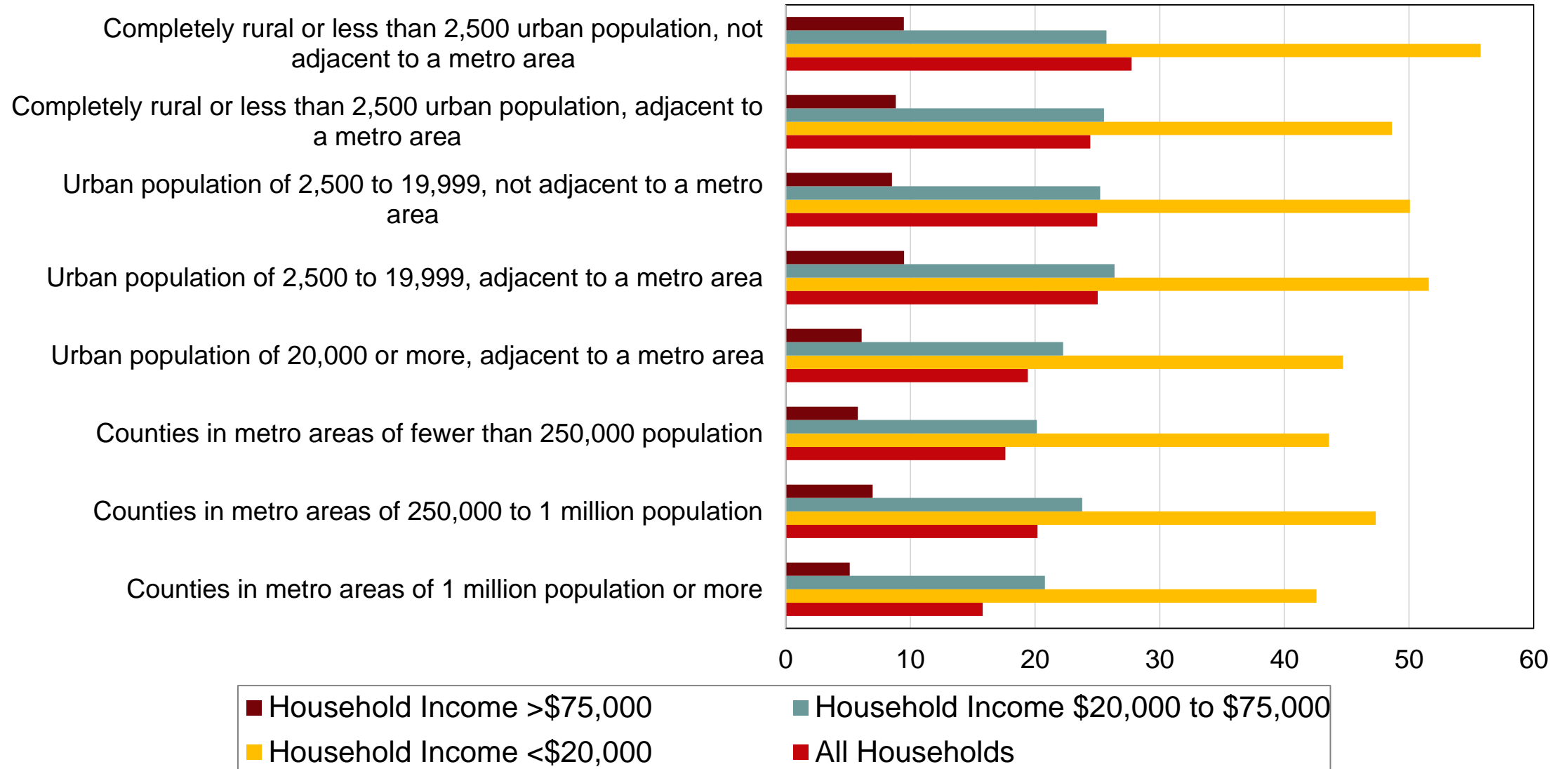


Considering Disparities

- There are still significant shares of the population without internet.
- Rural-urban disparities and income-level disparities.
- Address supply (infrastructure).
- Address demand (affordability, willingness to pay, demonstrating relevance, and education).



Percent of Population No Access to the Internet by Household Income Wisconsin



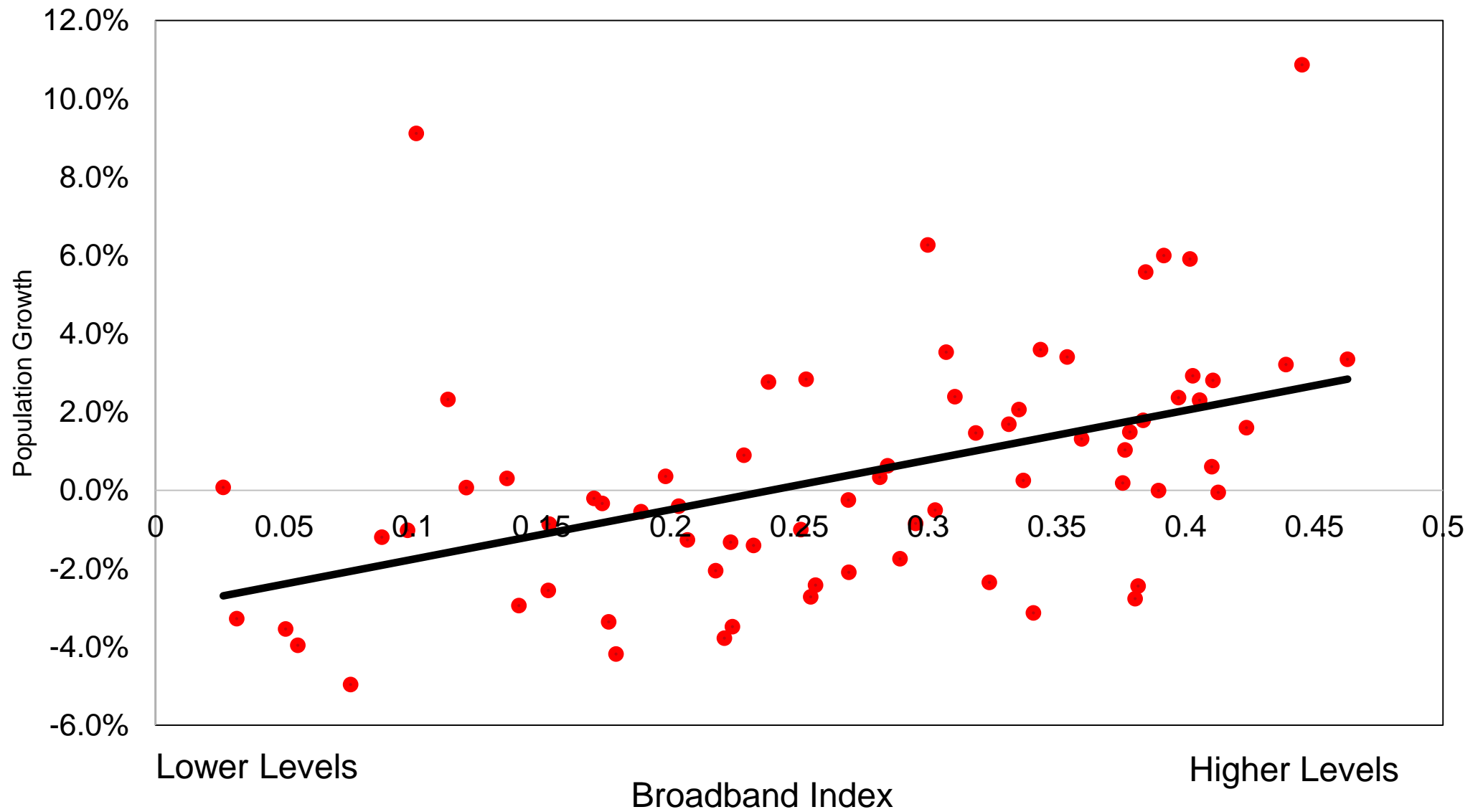
Source: US Census Bureau, American Community Survey, 2018 5-Yr Average

Economic Costs

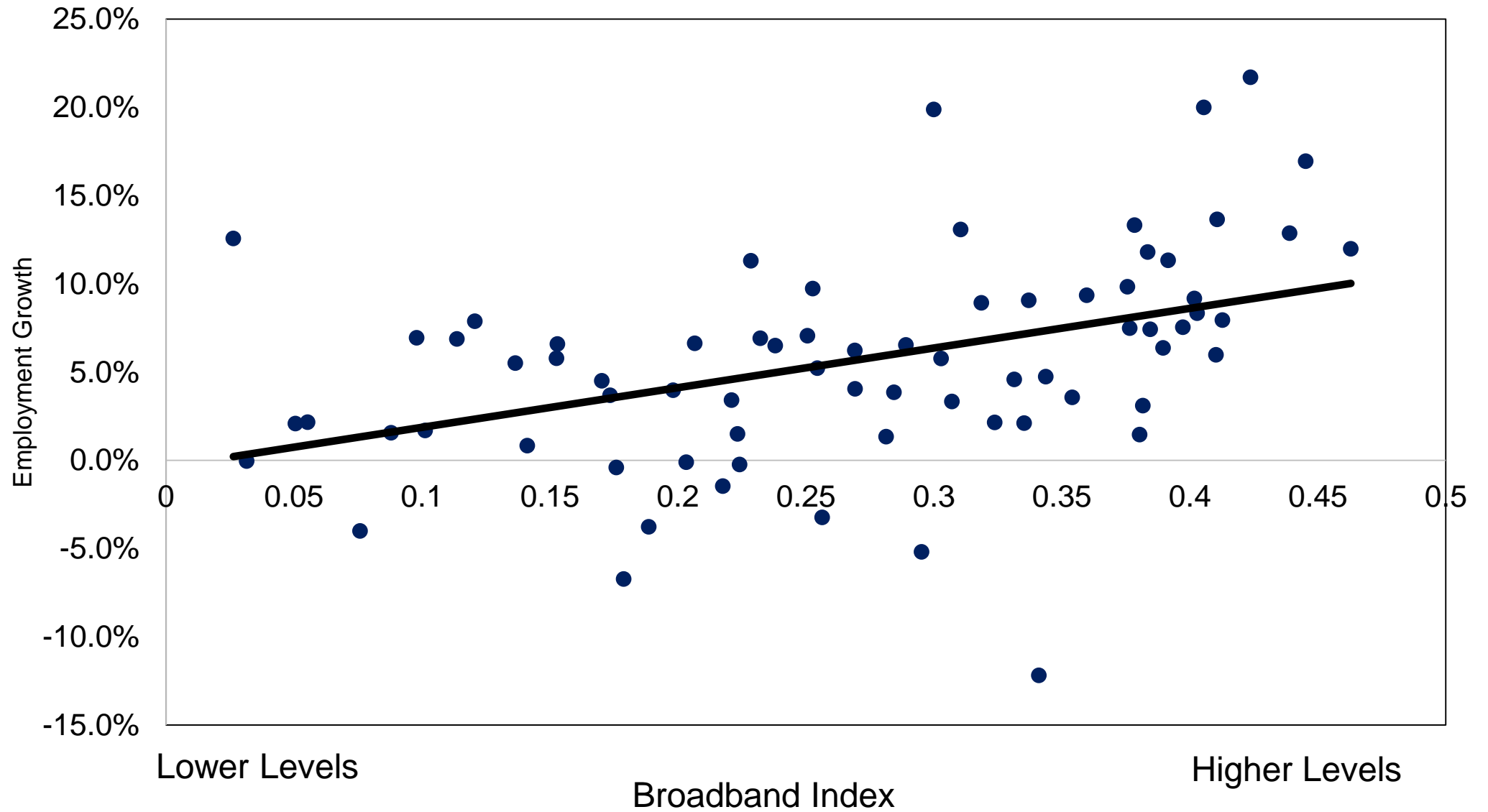
Table A1: Broadband Index Weights	
	Weights
Satellite (ACS)	-0.4959
Cellular Data Only (ACS)	-0.4715
No Internet (ACS)	-0.4597
Access to 25/3 (FCC)	0.5064
Variance Explained	0.5046



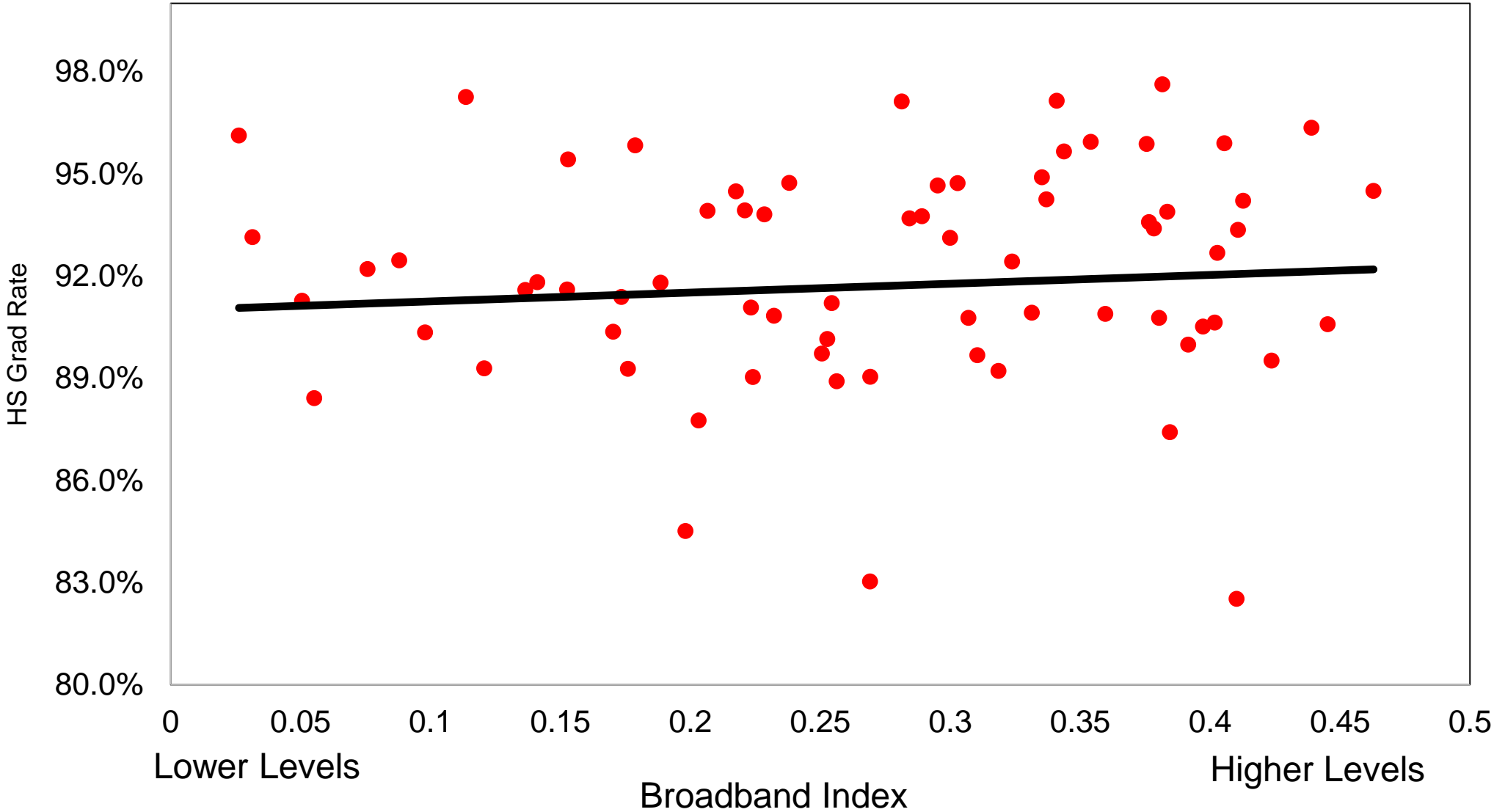
Broadband and Wisconsin County Population Growth



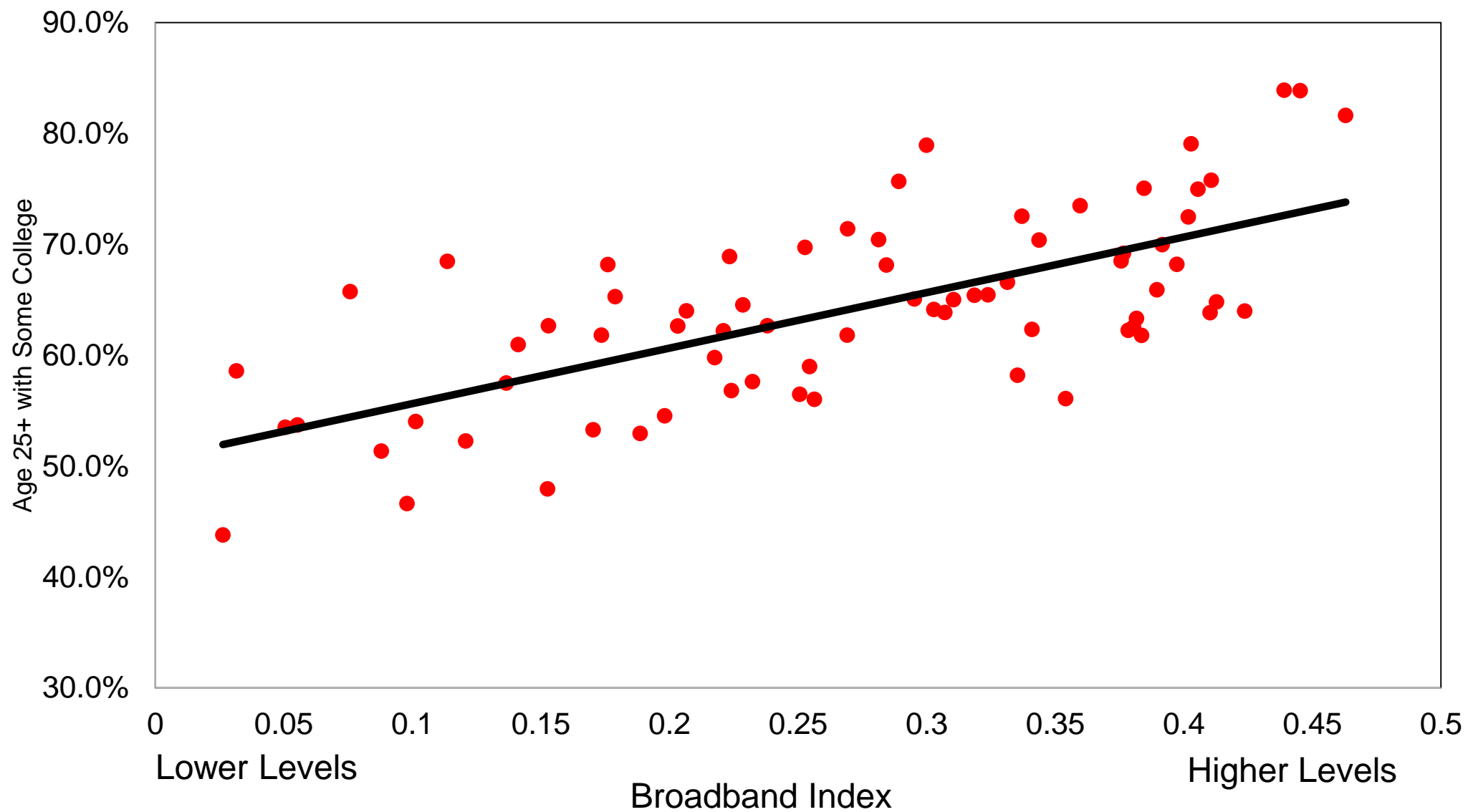
Broadband and Wisconsin County Employment Growth



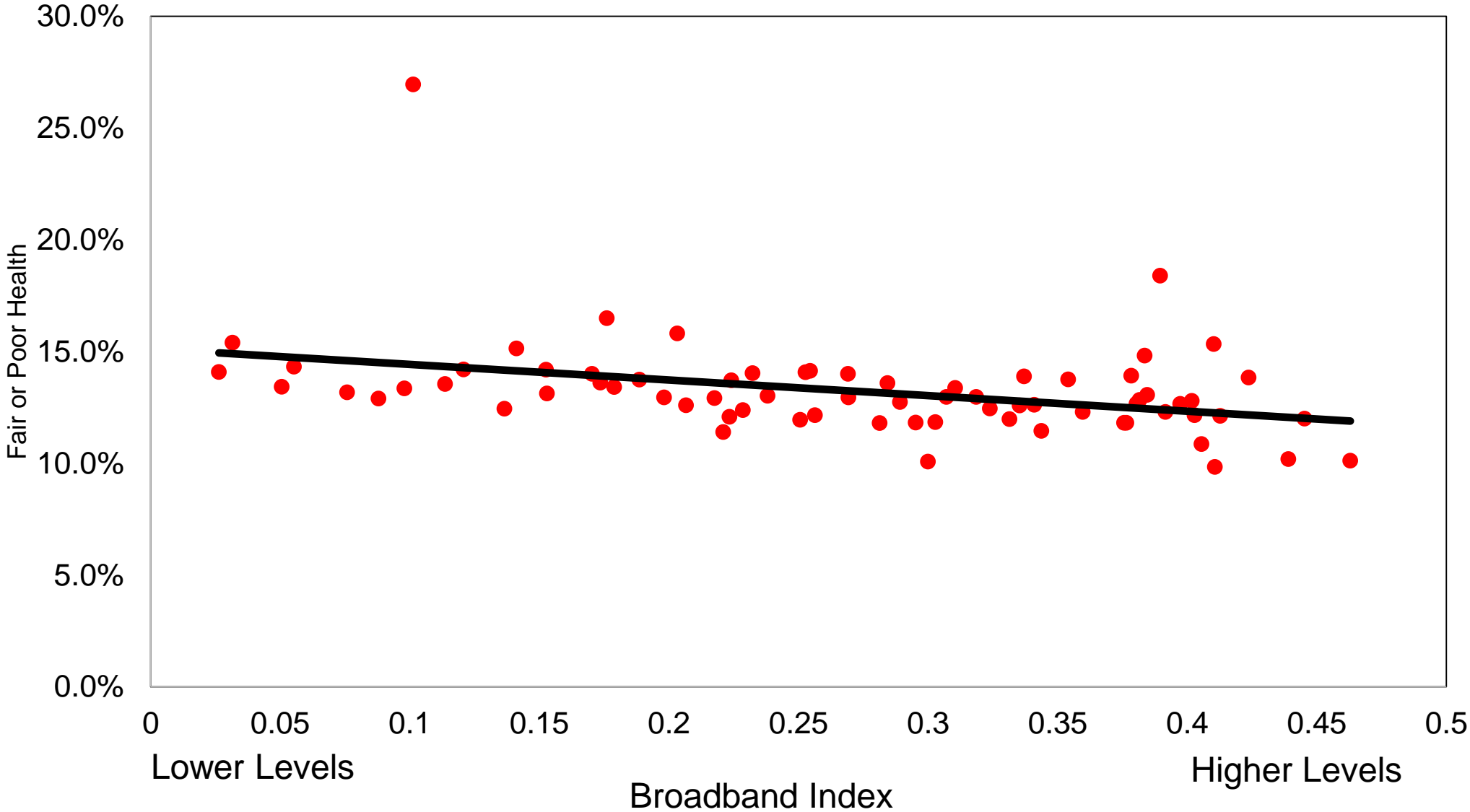
Broadband and Wisconsin County Education (HS Graduation Rate)



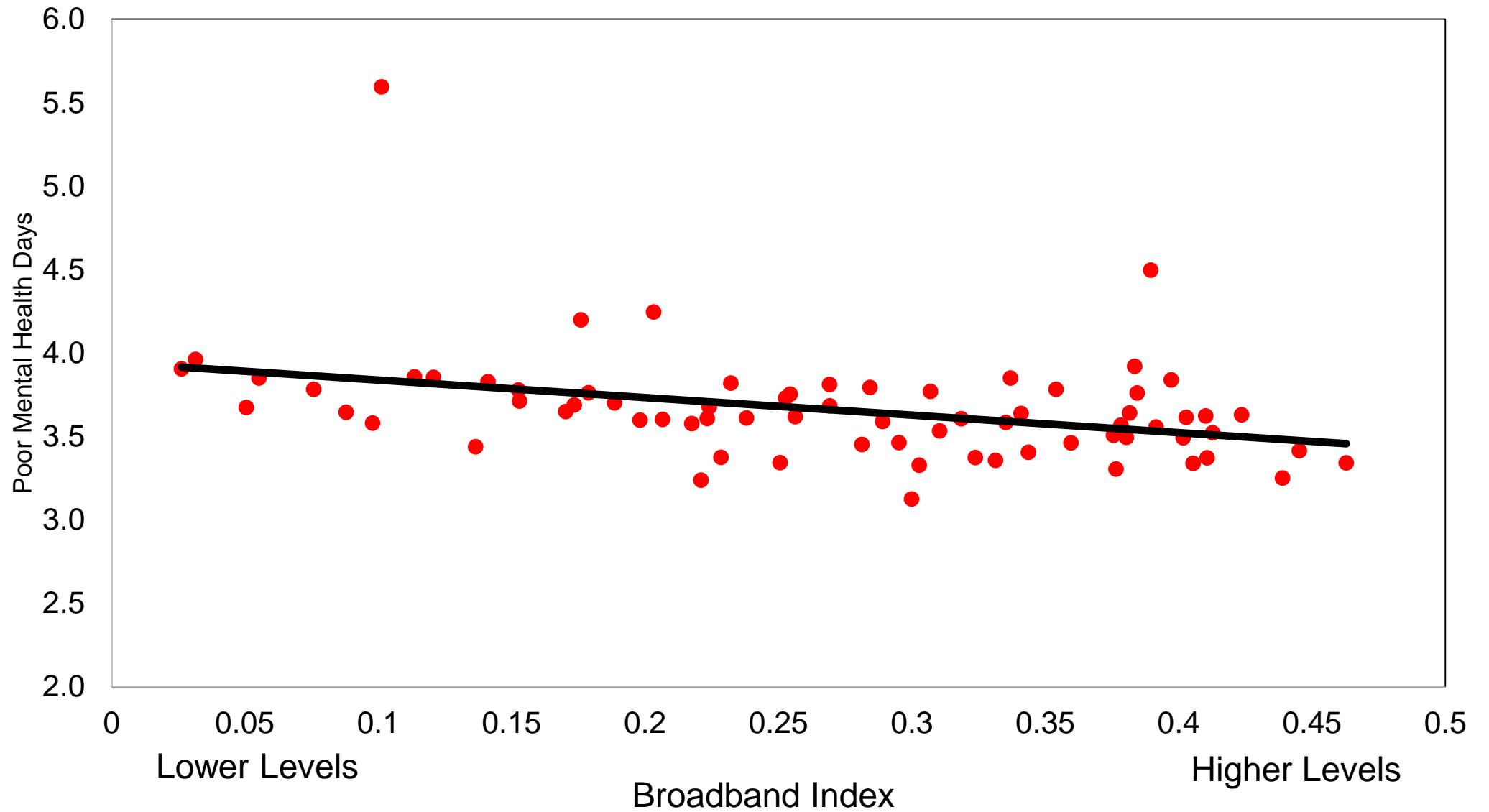
Broadband and Wisconsin County Education (Some College)



Broadband and Wisconsin County Fair or Poor Health



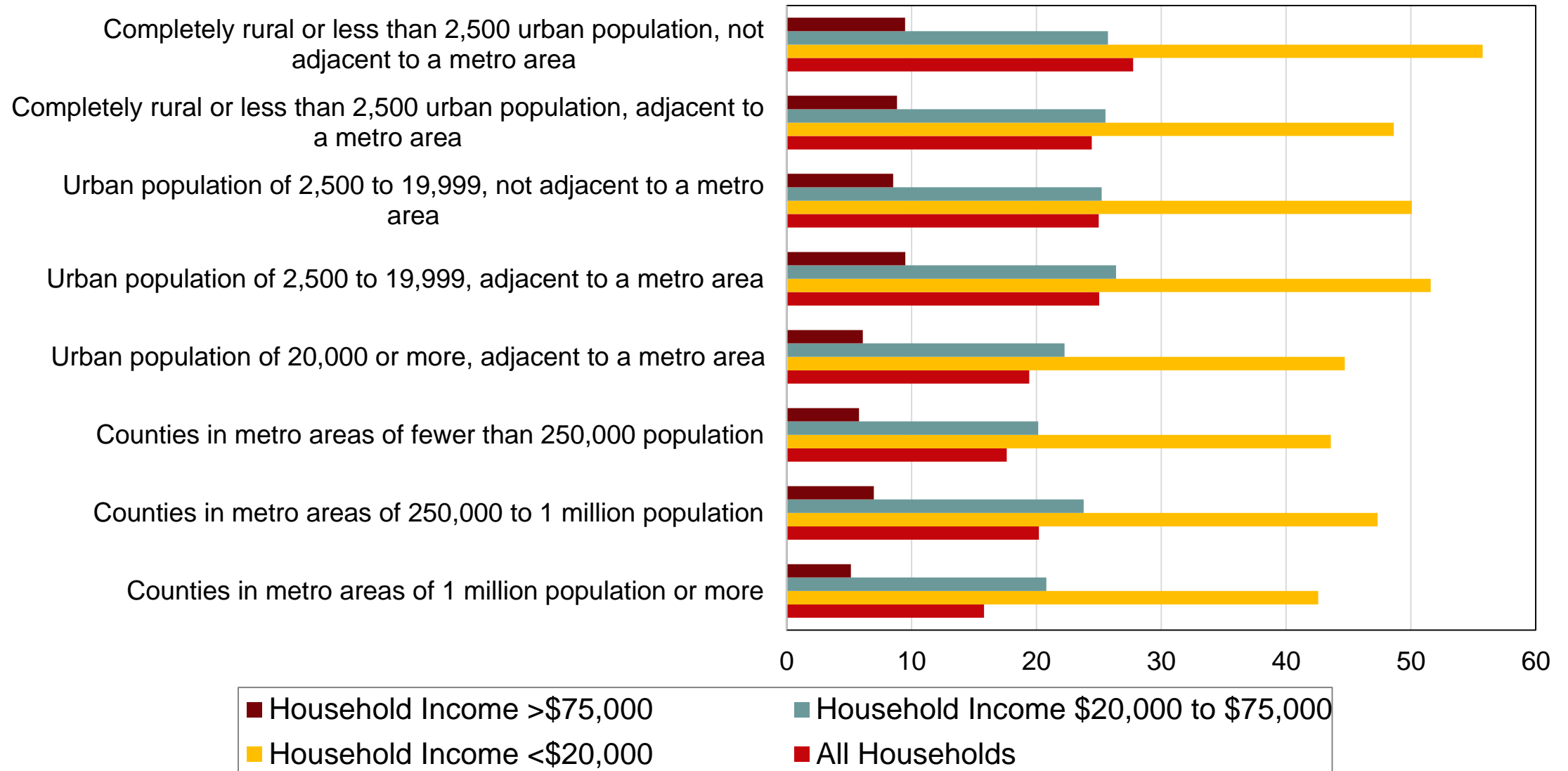
Broadband and Wisconsin County Poor Mental Health Days



Is access/adoption of broadband really driving these results, or is broadband really reflecting (measuring) higher poverty rates and lower population densities (ruralness)?



Percent of Population No Access to the Internet by Household Income Wisconsin



Source: US Census Bureau, American Community Survey, 2018 5-Yr Average

Table A2: Broadband and Community Outcomes, Controlling for Population Density and Income


	Percent of the Population Rural	Median Household Income	Broadband Index: Higher Values Better Access	R ²
Standardized Regression Coefficients				
Growth Rate in Population 2010 to 2018	0.4456 *** (0.0001)	-0.1825 *** (0.0001)	0.0445 ** (0.0351)	0.3219
Growth Rate in Employment 2010 to 2018	0.3779 *** (0.0001)	-0.1118 *** (0.0001)	-0.0890 ** (0.0002)	0.1510
Percent of Population (Age 25+) with Some College	0.4818 (0.3112)	-0.0437 ** (0.0016)	0.2412 *** (0.0001)	0.4328
3 rd Grade Reading Tests	0.4070 *** (0.0001)	0.2148 *** (0.0001)	0.2386 *** (0.0001)	0.2454
Percent of the Population Reporting Poor or Fair Health	-0.6702 *** (0.0001)	-0.2924 *** (0.0001)	-0.2435 *** (0.0001)	0.5343
Poor Mental Health Days	-0.5924 *** (0.0001)	-0.2067 *** (0.0001)	-0.1661 *** (0.0001)	0.3911

Marginal significance or p-values in paranetheses.

***: Significant at or above the 99.9% level.

**: Significant at the 95.0% level.

*: Significant at the 90.0% level.

- 
- Access to broadband matters for community well-being.
 - **Access** and **adoption** are two very different things: avoid the trap of “**build it and they will come**”.
 - Broadband, particularly affordable broadband, has been a **necessary condition** for a vibrant economy, but it is **not sufficient**.
 - Investing in the physical infrastructure of broadband is *NOT* a magic bullet.



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