Missouri Economy Indicators
Broadband Availability and Adoption

VOL. 2, ISSUE 11, 21 JUNE 2021

High-speed, reliable broadband serves as the digital infrastructure that will drive economic prosperity in the coming years, especially given the U.S. resolve to better connect its communities following the COVID-19 pandemic. Broadband enhances business development, income and quality of life in communities that can access and use the technology. Yet one in three Missouri households have not adopted fixed wire-type broadband services, according to U.S. Census American Community Survey (ACS) estimates.* Closing the gap between broadband availability and adoption will be important to fully realize broadband's potential benefits.

The Gap in Broadband Availability and Adoption

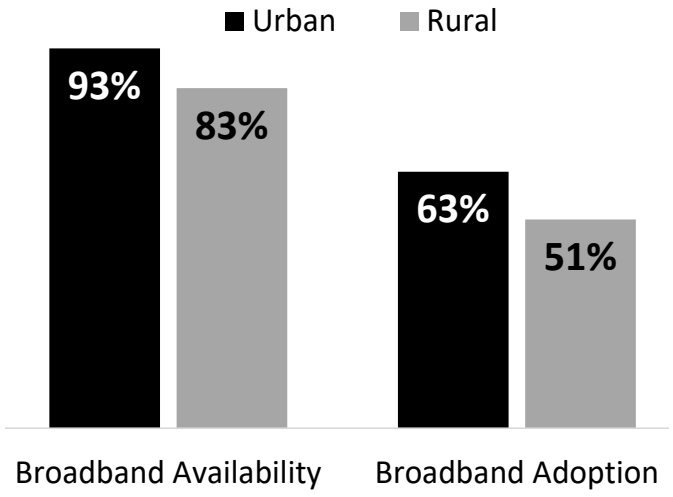
Eighty-three percent of U.S. households in rural counties had fixed wire-type broadband availability in 2019. Over 90% of urban county households had access.

Broadband adoption levels, however, are 30 percentage points or more below broadband availability in urban and rural counties. Broadband service costs can be one adoption hurdle, especially for lower income households. Weak digital literacy skills can also deter service adoption.

Closing the gap between adoption and availability will benefit individuals, local communities and the internet service providers (ISPs) that wish to recover the costs they incur to provide the service.

Urban and Rural U.S. County Fixed Wire-Type Broadband Availability and Adoption

Fixed wire-type broadband includes fiber optic, cable or digital subscriber lines (DSL)



Sources: MU Extension map using 2019 FCC Form 477 availability data and U.S. Census 2015-19 ACS adoption data. This analysis classified urban as metropolitan counties and rural as nonmetropolitan counties, which differs from FCC estimates based on 2010 Census block-level urban-rural information. Availability calculated using county-level averages.

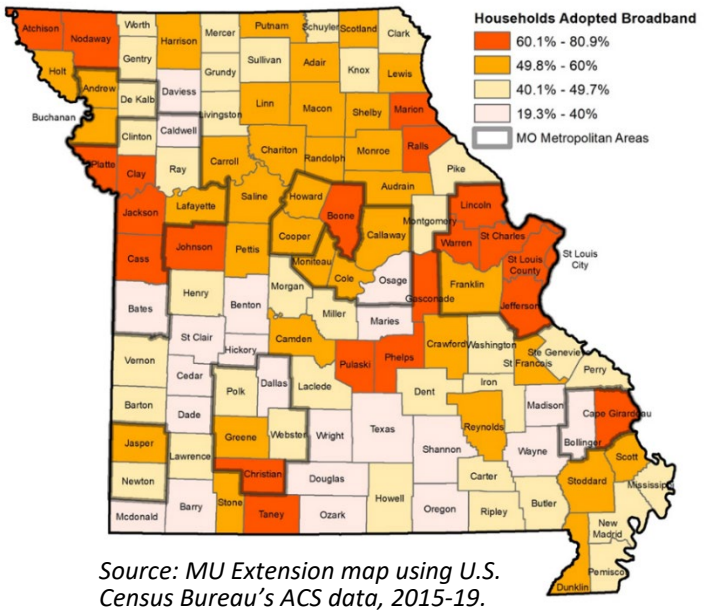
Broadband availability and adoption go hand in hand in benefiting communities

Broadband availability data have been criticized for overstating coverage and speed levels, especially for rural areas. See this report for details. Broadband availability estimates can vary depending on the type of broadband, speed of service, geographic definitions and data quality. Despite these shortcomings, the gap between broadband availability and adoption does convey the challenge that ISPs and communities face as they seek to expand access. Broadband investments are costly, especially in less populated areas, so high adoption levels are needed to generate ISP and community benefits that justify the expense.

In Missouri, 63% of households have adopted fixed wire-type broadband services compared to 69% of U.S. households, according to U.S. Census 2015-19 ACS estimates.** That leaves one in three Missouri households without high-speed, reliable internet service. Bollinger County had the lowest adoption level (19.3%) whereas St. Charles County (81%) had the highest broadband adoption in the state. Nationwide, county adoption levels ranged from 10% to 90%.

Lower adoption levels are generally seen in counties outside of metropolitan areas but not in all cases. Counties such as Bates, Bollinger, Caldwell, Dallas, and Osage are within metropolitan regions but still have low adoption levels.

Household Fixed Wire-Type Broadband Adoption



Source: MU Extension map using U.S. Census Bureau's ACS data, 2015-19.

Broadband expansion research shows that increased adoption levels drive long-term economic gains. These benefits, including income and employment growth, are demonstrated in a University of Missouri Extension study available here. As federal and state efforts ramp up to expand broadband availability, similar concern should be given to improving broadband adoption and digital literacy skills so that economic gains can be fully realized.

**Fixed wire-type broadband includes fiber optic, cable, and digital subscriber lines (DSL) and is considered more reliable than other broadband connections.*
***These averages differ from urban and rural adoption estimates on the first page that use county averages unweighted by population levels.*

Additional Resources

- **Broadband Technologies: A Primer on Access and Solutions** provides additional details on broadband technologies, barriers to adoption and policy solutions: extension.missouri.edu/publications/dm601
- **Missouri Broadband Resource Rail** offers mapping and speed test tools, a guide to creating digitally connected communities and other resources: mobroadband.org
- **Missouri Department of Economic Development's Broadband Development Office** shares news, contacts and information on federal and state broadband programs: ded.mo.gov/content/broadband-development

---

All Missouri Economy Indicators briefs in this series are available at tinyurl.com/ExceedEconomyIndicators

Authors: Alan Spell, Assistant Extension Professor, alan.spell@missouri.edu
Catherine Isley, Exceed Graduate Research Assistant, catherine.isley@mail.missouri.edu

The Missouri SBDC is funded in part through a Cooperative Agreement with the U.S. Small Business Administration and is a University of Missouri Extension partner. All opinions, conclusions, and/or recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the SBA.