A NATIONAL NONPROFIT

The Center on Rural Innovation

Changing the landscape of our nation's tech economy

Center on Rural Innovation

Introductions

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Center on Rural Innovation

Advancing inclusive rural prosperity through tech economy ecosystems that support scalable entrepreneurship and tech job creation.

WHO WE ARE

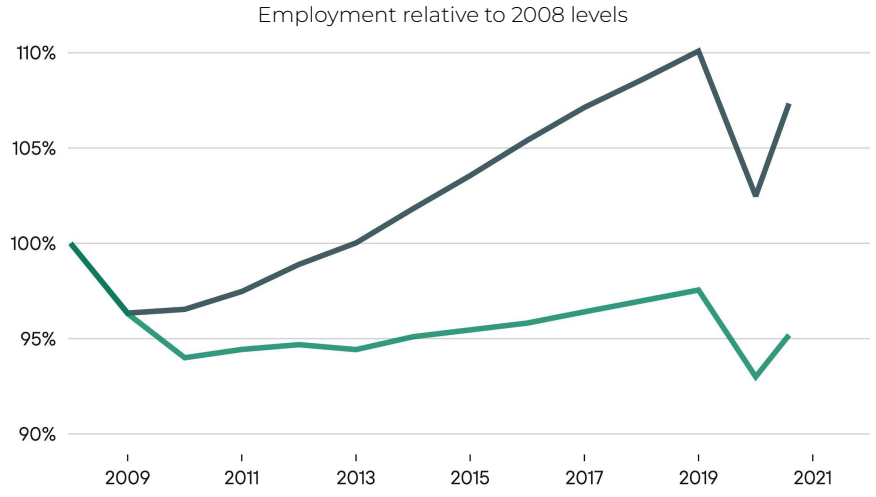
We believe that **small towns are home to big ideas** — and new models of economic development can empower rural communities across the U.S. to participate in and benefit from **the nation's growing tech economy**.

WHY WE EXIST

Due to the automation of jobs in traditional rural industries, **rural America is facing an economic crisis**:

- **Job loss —** There were fewer jobs in rural America in 2020 than there were in 2001.
- **Population loss —** With few economic prospects, people continue to move away from rural areas, leading to stagnant (0%) population growth over the past decade.
- **Wage stagnation —** Per capita income in rural America lags behind the rest of the country by more than 20%.

Rural vs. urban job growth (2008-2021)



Source: Bureau of Labor Statistics Local Area Unemployment Statistics (2008 - Aug 2021)

HOW DID THIS HAPPEN?

Automation

Globalization

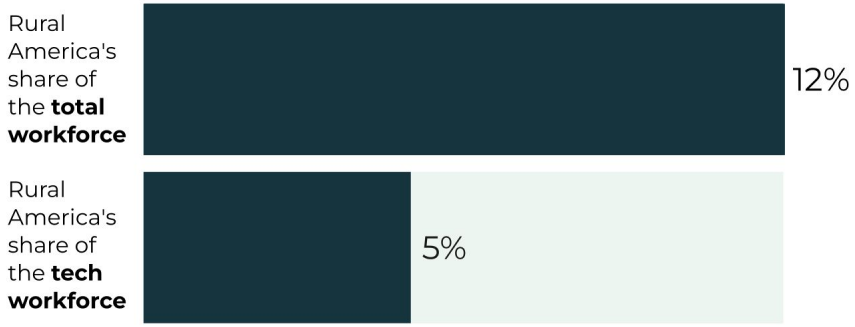
Decline in entrepreneurship

THE CHANGE WE NEED

By 2030, we want rural America to have 12% of the nation's tech economy jobs, distributed to match the gender and race demographics of each region.

- Between 2014 and 2019, **96% of new tech jobs created were in metropolitan areas**.
- Software developers in rural areas earn an average of $38 per hour, **more than twice the median hourly wage of the average rural worker** ($14.68).

Rural Americans are underrepresented in tech jobs



Source: ACS 5-year estimates (2021)

Tech innovation drives regional economies

3x growth

Computer occupations are expected grow three times as fast as the national average...[1]

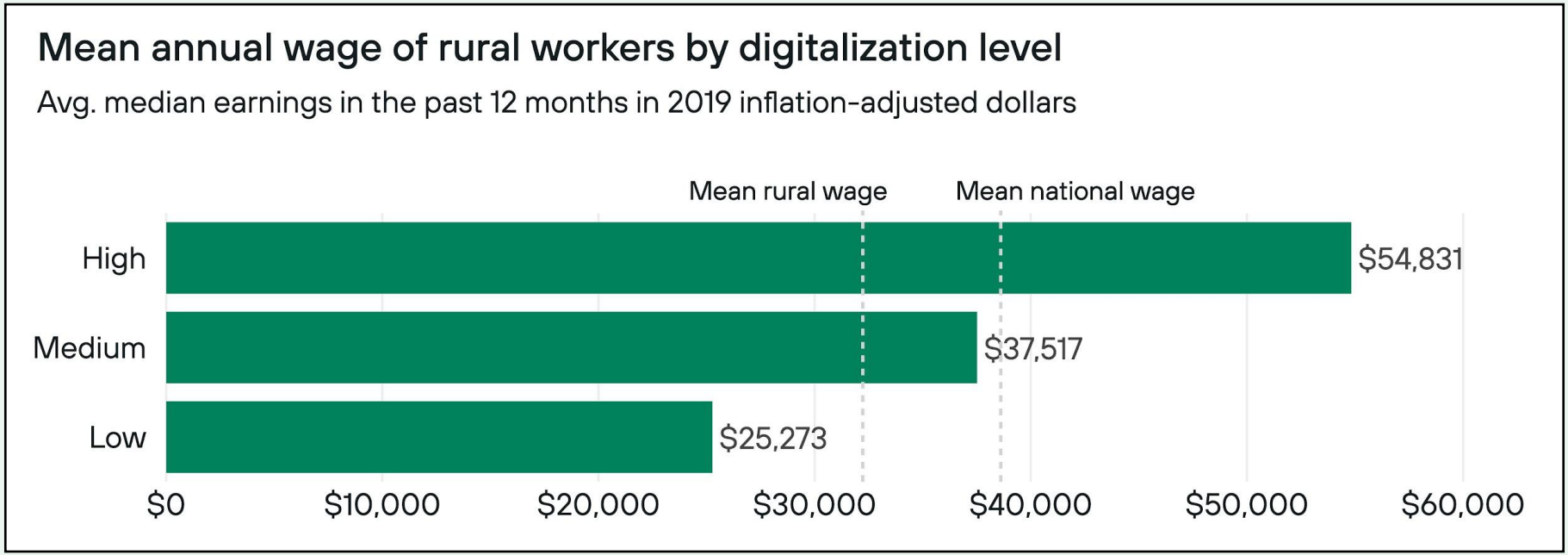
3 to 5 new jobs

... and for every one high-tech job created, three to five additional jobs are created by other firms locally.[2 3]

Tech jobs were the third-fastest-growing occupation in rural counties between 2014 and 2019 ...[3]

Sources: (1) Zilberman & Ice (2021); (2) Moretti (2012) ; (3) Bartik & Sutherland (2019); (4) American Community Survey; (5) IPEDS

Workers in highly digital jobs earn more than those in jobs that use less technology



Examples of tech jobs

- Software engineering ($107,510)
- Web development ($73,760)
- Data science ($122,840)
- IT specialist ($54,760)
- Cybersecurity analyst ($99,730)
- Database administrator ($93,750)

For more examples visit:
BLS Computer and Information

RURAL VENTURE CAPITAL IS INCREASING

Between 2017 and 2021, venture capital in rural areas grew from $3.2 billion to $42.5 billion — an increase from 0.5% to 2.5% of total venture capital across the U.S.[1]

Source: (1) Robb (2021)

WHAT WILL CONTINUE TO AFFECT THIS?

- **Broadband ubiquity** due to infrastructure investment
- **Cloud computing** combined with broadband can **level the playing field** for computing power
- **AI** could add extra levels of power to startups — meaning fewer people are needed to **accelerate growth to minimum viable product**

THE FUTURE IS TECH

Rural communities will share in the benefits of a tech economy when they can harness tech for local wealth creation.

From 1997 to 2017, the tech economy grew 4.3x faster than the overall economy.

Producing scalable tech startups in rural areas will build stronger communities and lead to more local tech jobs.

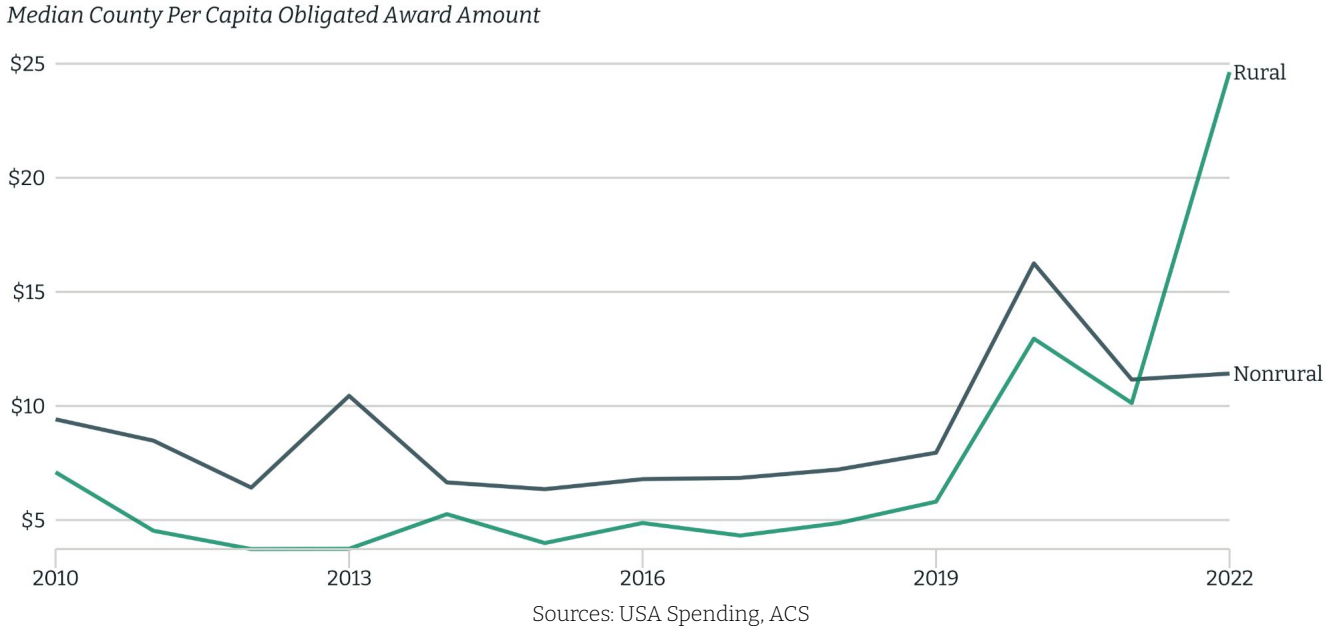
Venture-backed companies see employment growth an average of 8x higher than the typical private firm.

Tech jobs pay well and can be done anywhere that has a good internet connection.

RURAL AMERICA LACKS THE FUNDING IT NEEDS

*More funding is needed to build tech economies in rural communities, but **public and private funders have historically ignored rural America***

Federal economic development awards to rural and nonrural recipients, 2010-2022

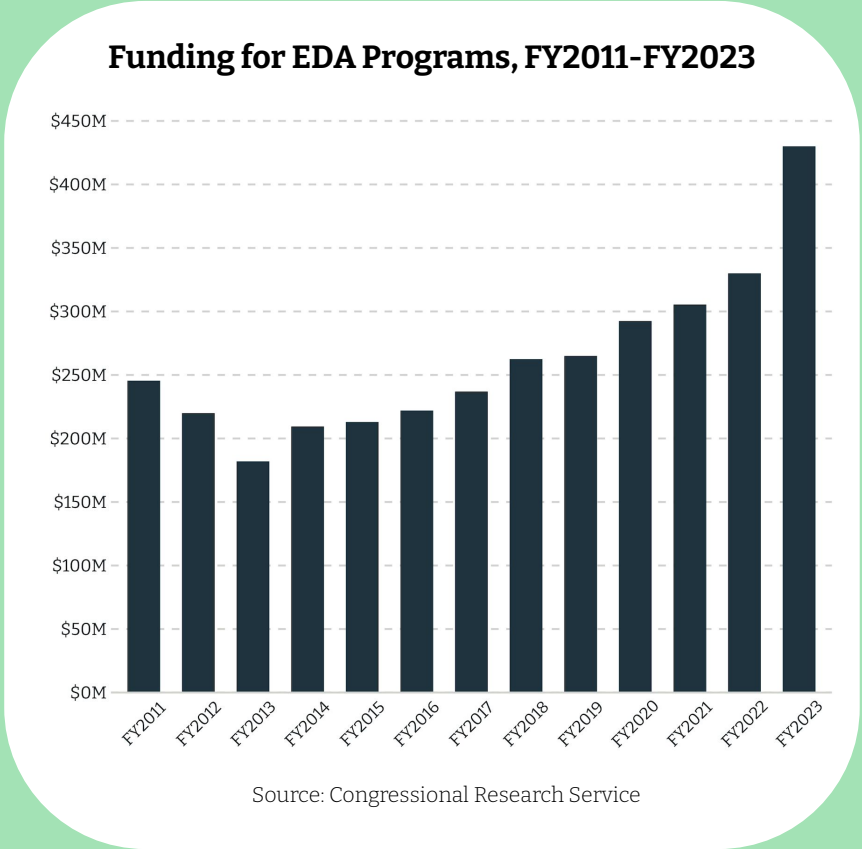


Sources: USA Spending, ACS

HISTORIC MOMENT FOR FEDERAL FUNDING

Rural communities could access more than **$180B** in federal funds over the **next five years** to build tech economies, including:

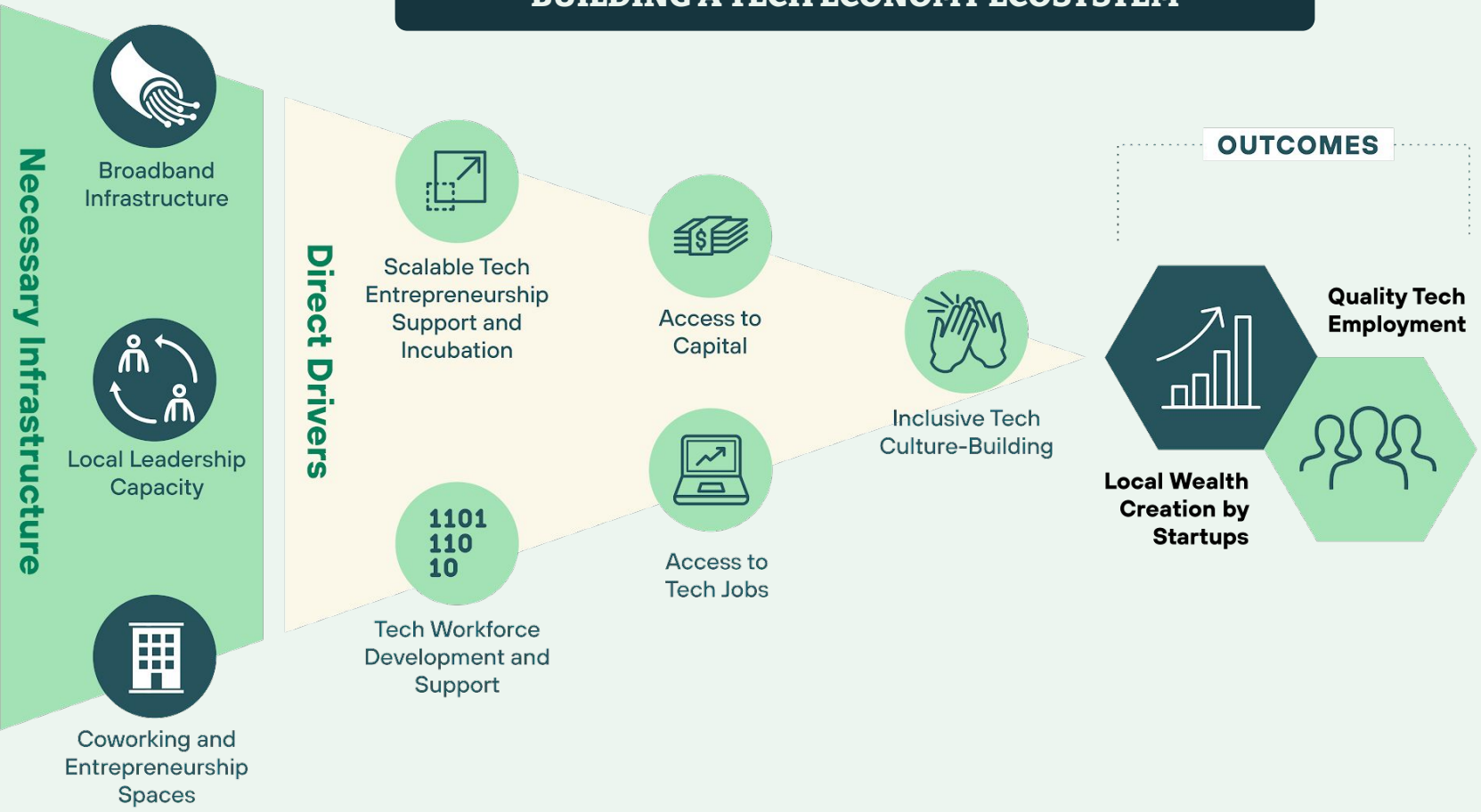
- **~$65B** **CHIPS and Science Act** — telecom, Regional Tech Hubs, and RECOMPETE
- **~$45B** **Infrastructure Investment and Jobs Act (IIJA)** — broadband infrastructure
- **~$33B** **NSF** — tech directorates and STEM workforce development
- **~$28B** **ARPA** — capital projects funds, SSBCI, and broadband infrastructure
- **~$10B** **Inflation Reduction Act (IRA)** — climate change and renewable energy



OUR VISION

In the age of the internet, there should be no limit to where tech talent and visionary founders can thrive.

BUILDING A TECH ECONOMY ECOSYSTEM



A comprehensive approach

Developing tech economy ecosystem strategies

Through the **Rural Innovation Initiative**, we provide intensive technical assistance and support to rural communities as they build tech economy ecosystem strategies and apply for competitive grants.

Building capacity and resources

Once communities complete the initiative, they are invited into the **Rural Innovation Network**, a supported nationwide community of committed change agents working to advance the economic future of their hometowns.

Sharing economic data and insights

Network members receive custom data and mapping tools to help them understand local economic dynamics and advance their **tech economy ecosystem strategies**.

OUR NETWORK

- Through the Rural Innovation Initiative, **we have helped raise more than $29.9M** on behalf of rural communities to support the development of their local tech economies.
- Our Rural Innovation Network is **38 communities across 25 states** and growing.
- Our Network communities cover **a population of more than 2.9M** (equivalent to the fourth-largest city in the country).

SUPPORTING OUR NETWORK MEMBERS

KNOWLEDGE

- Access to expertise on the CORI team
- Proven models and best practices developed by other rural communities
- Case studies and research on successful ecosystems
- Data tools to understand local economy dynamics

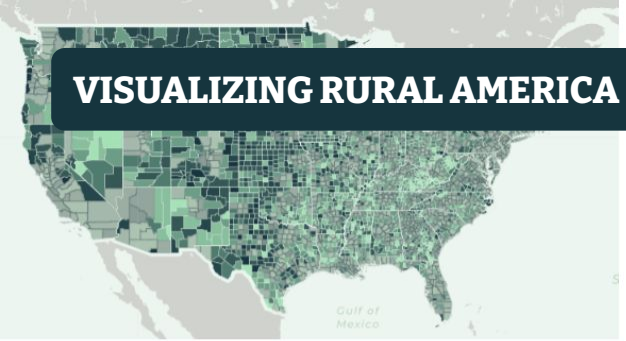
RESOURCES AND PARTNERSHIPS

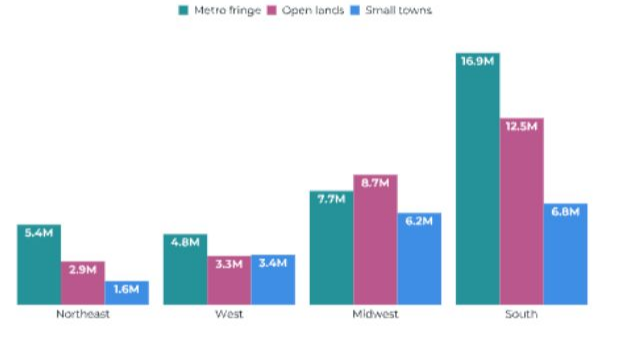
- Tech skilling partners — Udacity, CodePath, Flatiron
- Pro-bono legal support for tech entrepreneurs
- Capacity building and professional development
- Network-wide pitch event

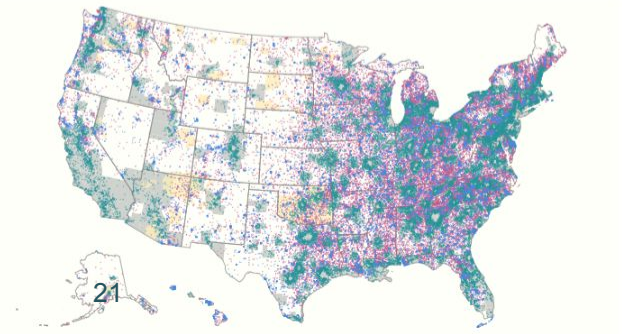
CONNECTIONS

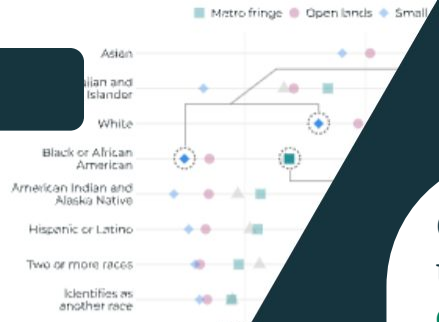
- Slack workspace for Rural Innovation Network leaders and staff
- Annual Summit for Network members
- Community of practice working groups, virtual events for entrepreneurs, strategies for attracting remote workers

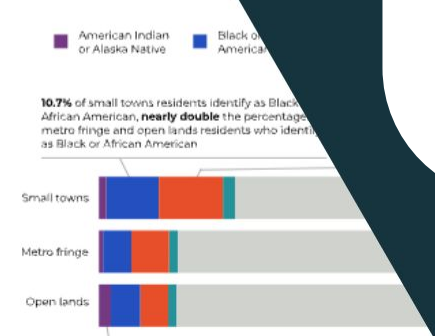
VISUALIZING RURAL AMERICA











Our research and mapping practice allows us to take deeper dives into the **unique opportunities and challenges faced by rural America**:

- Case studies **highlighting tech economies** in Network communities
- Maps to **illustrate the digital divide** throughout the COVID-19 pandemic
- Research projects to **evaluate national tech training programs**
- Infographics and illustrations to **bring awareness to issues of racial equity** in rural America and in tech

INVESTMENTS IN RURAL INNOVATION

We launched **the CORI Innovation Fund** and **have raised $7.4M to date** to invest in scalable technology-enabled startups operating in rural geographies.

- The fund is **supported by 22 investors** who are successful tech entrepreneurs, venture capitalists, foundations, and corporations.
- We currently have **10 rural tech startups** in our portfolio which support 130+ tech jobs.
- Startups have **raised $20+ million** in co / follow-on investments

Thank you

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Center on Rural Innovation

Tech Economy Diagnostic

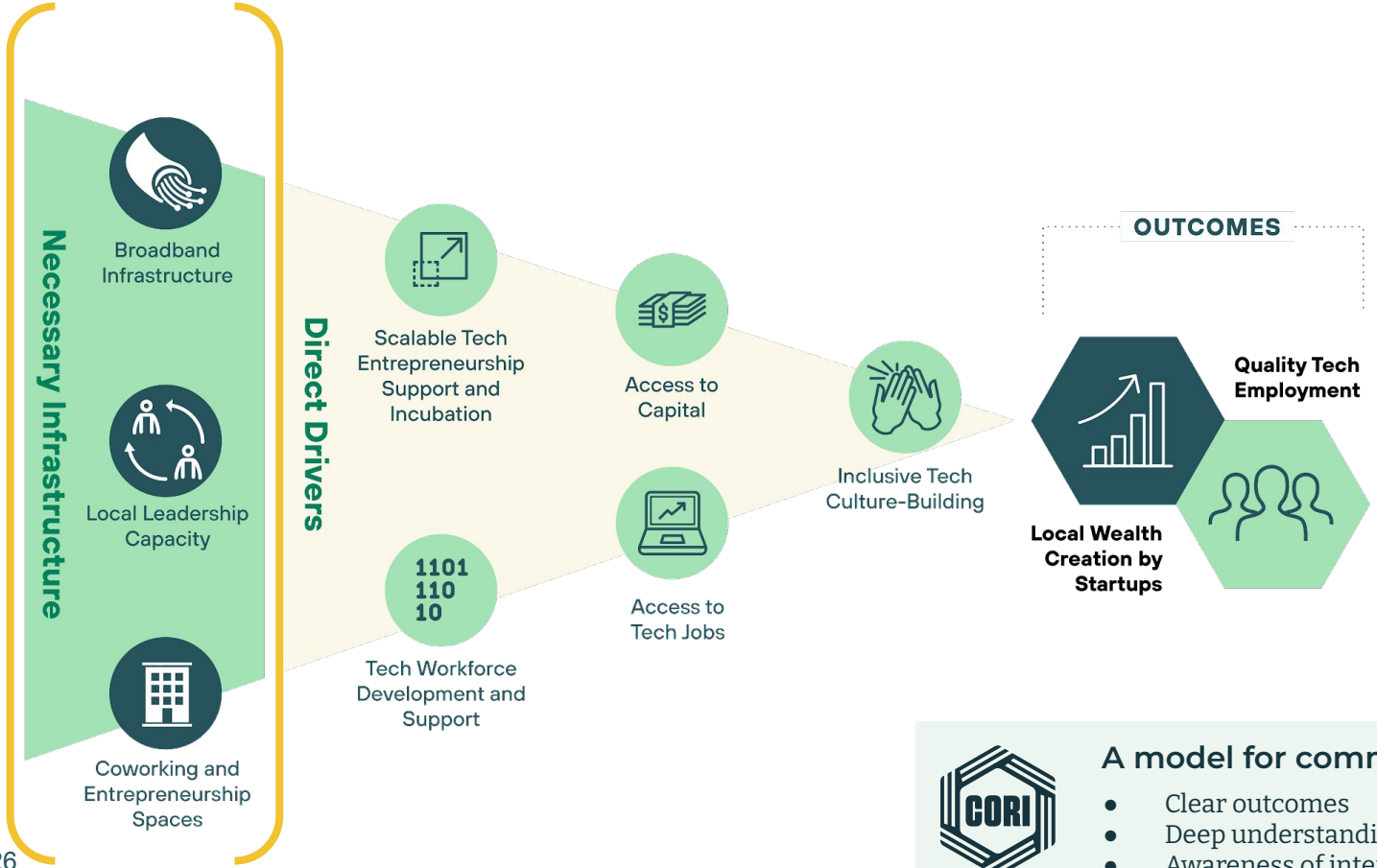
New Ulm, MN

April 2023

Agenda

01. **Necessary infrastructure**
02. Tech economy drivers

CORI's tech economy ecosystem model



A model for community progress:

- Clear outcomes
- Deep understanding of required elements
- Awareness of interdependence of all elements

Key necessary infrastructure takeaways

Favorable foundations supporting tech economy growth:

- Population decline rebounded during the COVID-19 pandemic
- Exceptional broadband infrastructure

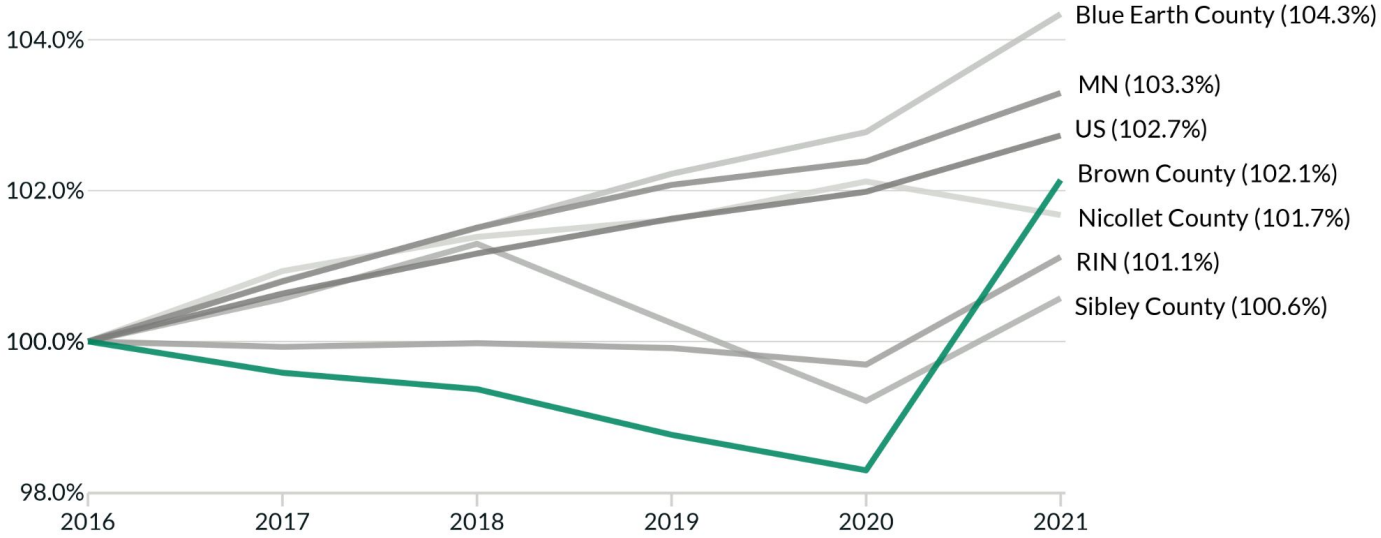
Key challenges that may limit tech economy growth:

- Employment in the tradable services sector trails most geographies
- Employment rate is high potentially limiting the pool of residents looking for upskilling/reskilling into tech careers

Population rebounded between 2020-2021

Population change in the last five years

Population indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 County Population Characteristics.

Takeaways

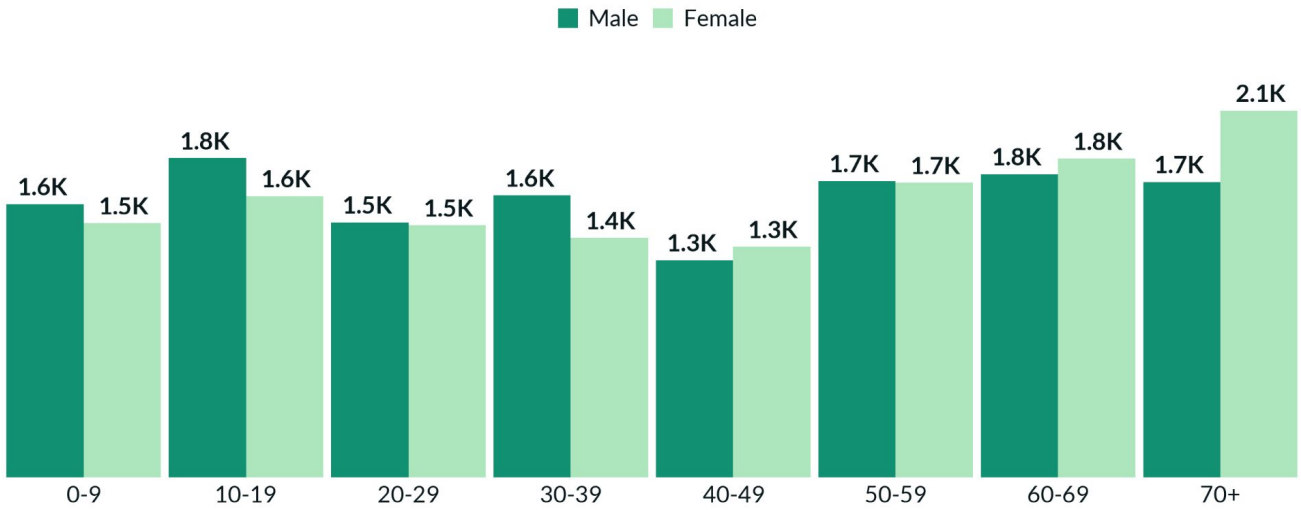
- Brown County's population is currently 2.1% larger than it was in 2016. This is likely due to an influx of new residents during the COVID-19 pandemic

Implications

- Supporting the creation of new digital and tech careers could help retain people in the region or attract new residents

Young people account for about 37% of the population

Population age and gender



Source: 2021 ACS 5-year estimates

Takeaways

- Nearly 37% of the population is <29 years old

Implications

- Young people 0-29 years could be a good target population for digital/tech skilling opportunities

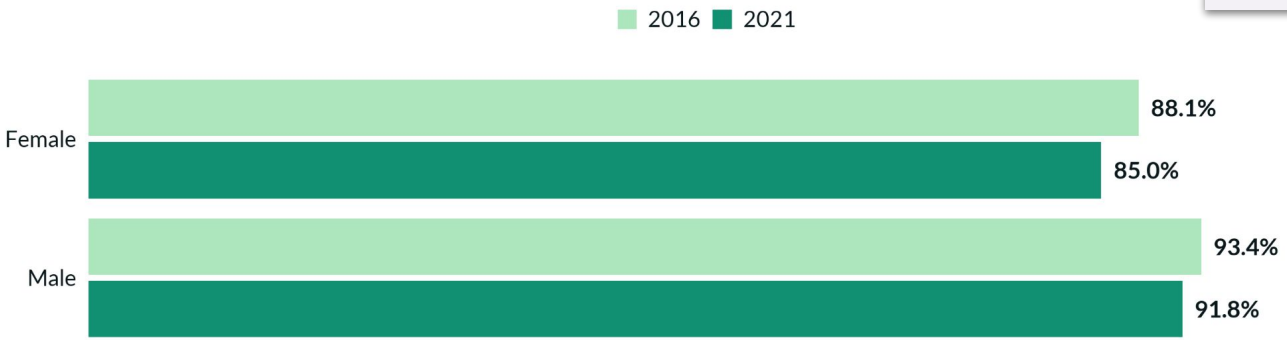
Employment rate remains robust even with decline

Takeaways

- Of the population that is of prime working and earning age (25-54 years) 85% of females are employed and 91.8% of males are employed

Prime age employment rate

Percent of population aged 25 to 54 that is employed

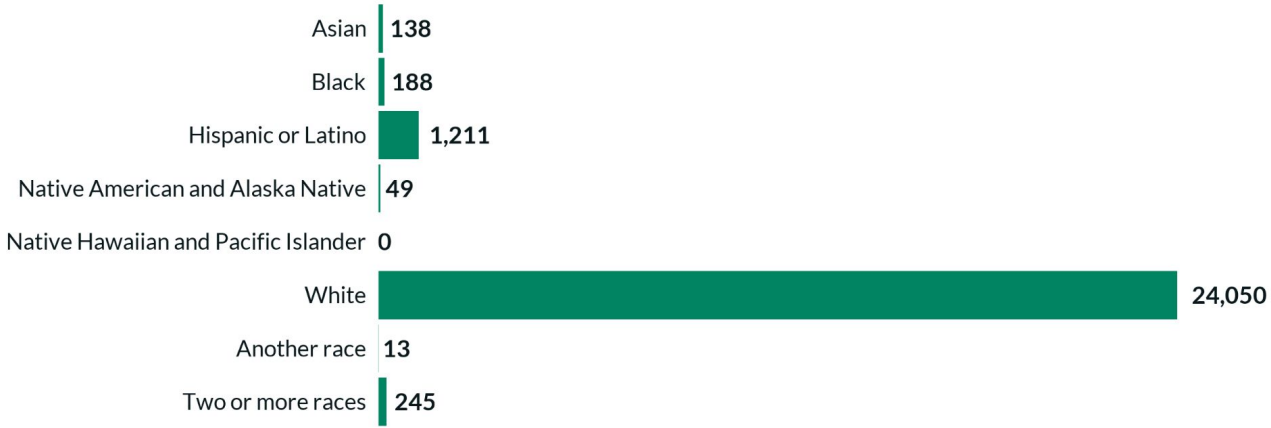


Source: 2016 and 2021 ACS 5-year estimates

Brown County has limited racial and ethnic diversity

Race and ethnicity

Population counts include race alone, excluding those who identify as Hispanic or Latino



Source: 2021 ACS 5-year estimates

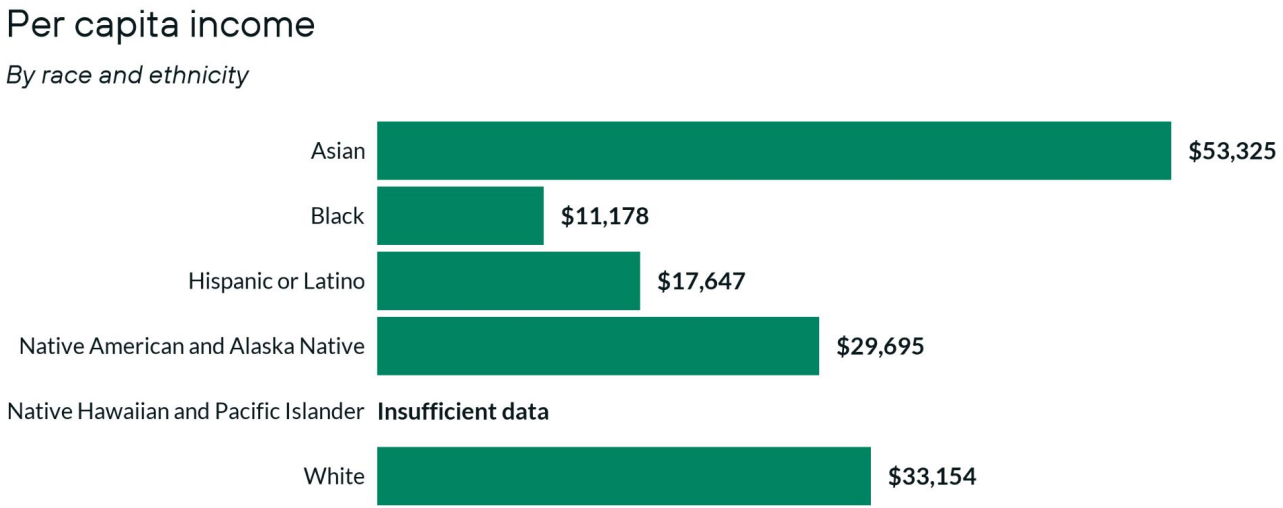
Takeaways

- Brown County is largely homogeneous with 24,000+ residents identifying as white, just over 1,200 residents identifying as Hispanic or Latino, and about 650 residents identifying as another race or ethnicity

Implications

- Other forms of inclusion that include outreach to underemployed and unemployed, people in recovery, single parents, and other demographic groups could play a role
- With limited racial and ethnic diversity being intentionally inclusive rather than unintentionally exclusive will be key

Bootstrapping tech companies may be possible



Source: 2021 ACS 5-year estimates

Takeaways

- Per capita income in the largest population only slightly trails the state of Minnesota and United States as a whole

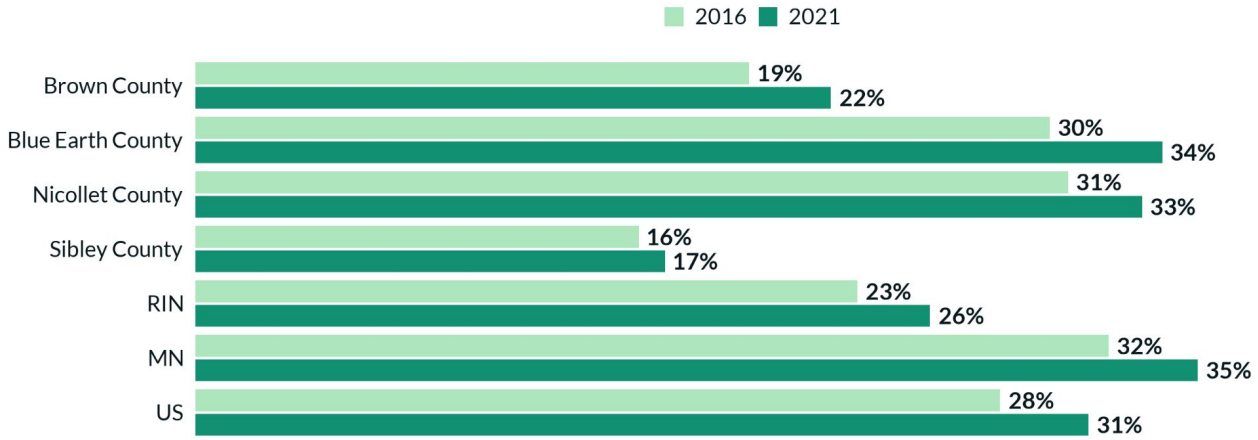
Implications

- It still may be difficult for some members of the community to self-fund and "bootstrap" potentially scalable tech startups
- It could be prudent to explore non-traditional funding mechanisms to support founders

Increasing share of residents have a Bachelor's Degree

Educational attainment

Percent of population with a bachelor's degree or higher



Source: 2016 and 2021 ACS 5-year estimates

Takeaways

- The number of residents with a Bachelor's degree increased from 2021 to 2016. However, Brown County still trails all comparison geographies except Sibley County

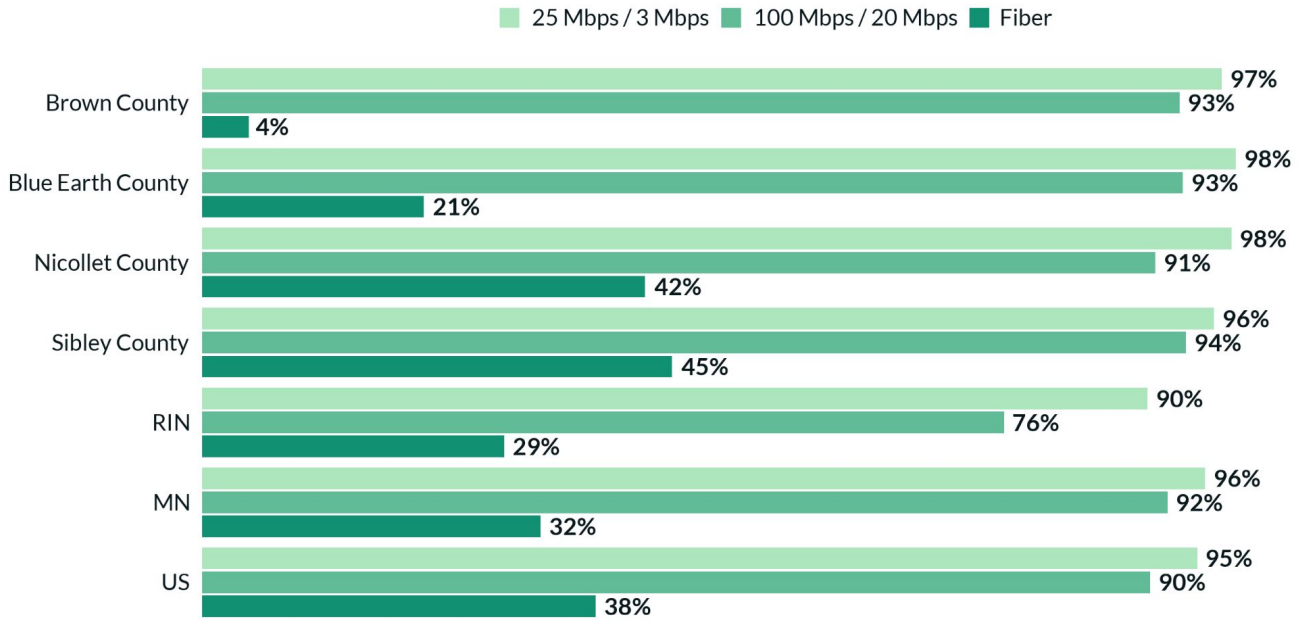
Implications

- Non-traditional tech skilling initiatives like bootcamps, certificates, or other short duration but high impact training opportunities may appeal to residents without degrees
- Retaining graduates from regional higher ed institutions could be a key strategy

Brown County has exceptional high-speed internet availability

Broadband access - Residential services

Percent of broadband serviceable locations for FCC service tiers or technology



Source: FCC National Broadband Map - 2022 Release

Takeaways

- Per FCC data, 97% of Brown County residents are served by high speed internet
- This is on par with all comparison geographies

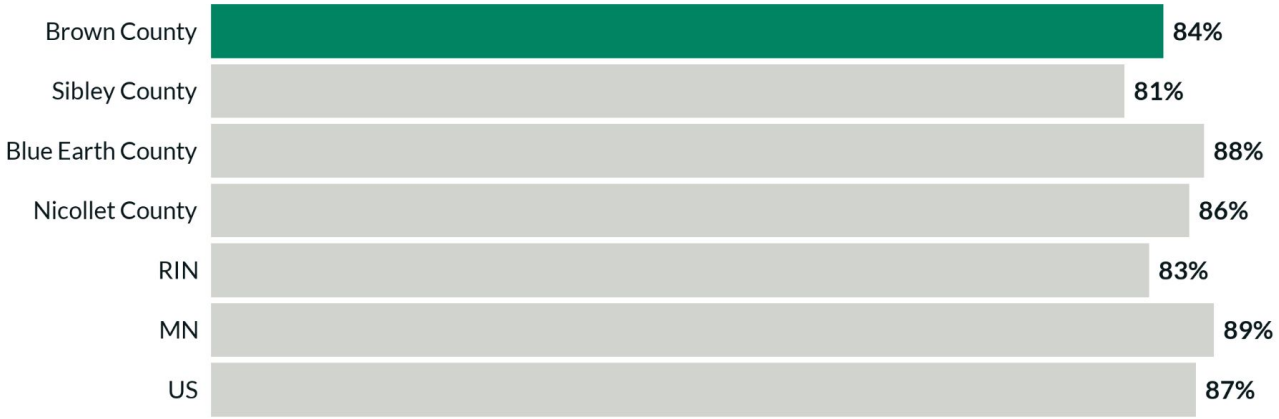
Implications

- As long as internet providers offer affordable services, residents should have the ability to participate in digital and tech skilling opportunities and employment

Most residents report adequate service

Broadband usage

Share of households with a broadband subscription of any type



Source: 2021 ACS 5-year estimates

Takeaways

- Per ACS self-reporting, 84% of residents in Brown County indicate they subscribe to some sort of internet service

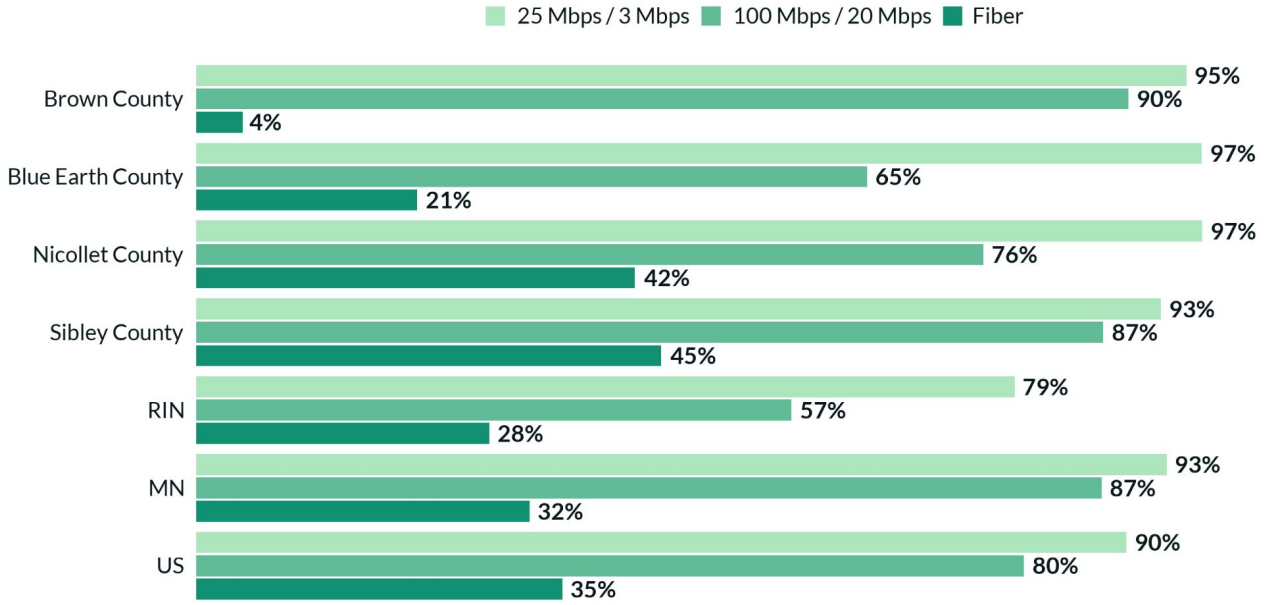
Implications

- Some residents may have difficulty participating in digital and tech skilling opportunities and employment without internet

Businesses also have access to high speed internet

Broadband access - Business services

Percent of broadband serviceable locations for FCC service tiers or technology



Source: FCC National Broadband Map - 2022 Release

Takeaways

- Per FCC data, 95% of business locations in Brown County are served by internet with speeds greater than 25Mbps up and 3Mbps down

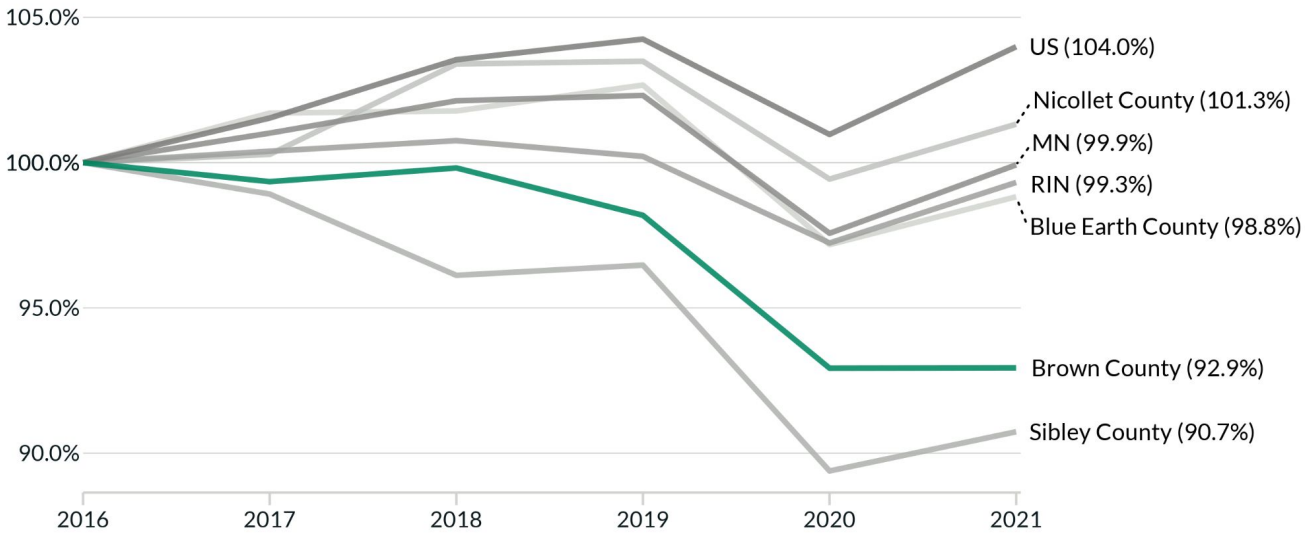
Implications

- Tech businesses are likely able to freely locate in the region without worrying about connectivity challenges

Less people are employed than in 2016

Employment change in the last five years

Employment indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 US Bureau of Economic Analysis.

Takeaways

- Employment remained stagnant from 2016-2018, before declining from 2018-2021

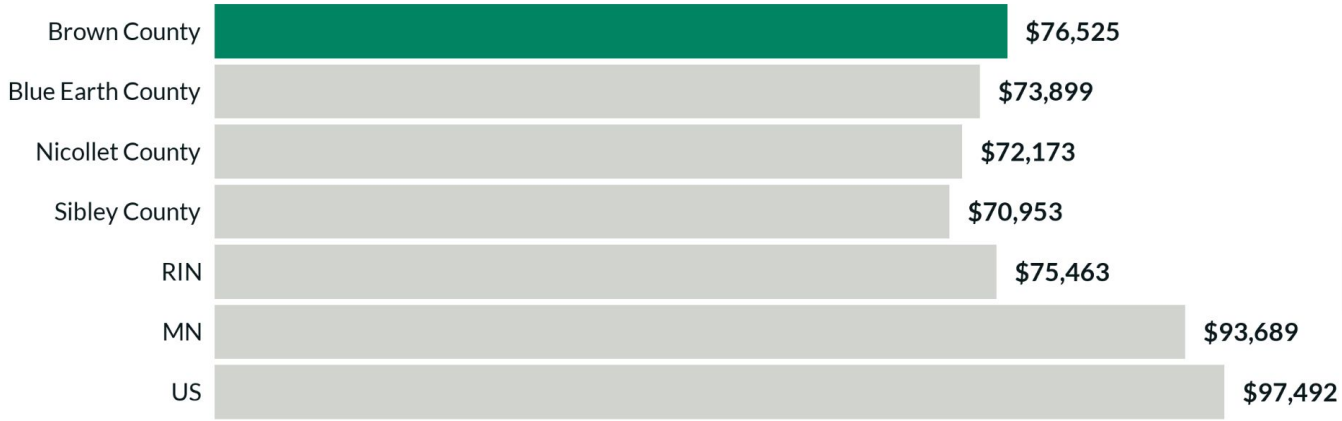
Implications

- Attracting new residents could increase the local talent pool

GDP per worker exceeds that of rural counterparts

Real GDP per worker

In chained 2012 dollars



Source: 2021 BEA estimates

*Chained dollars is a method of adjusting real dollar amounts for inflation over time, to allow the comparison of figures from different years. The U.S. Department of Commerce introduced the chained-dollar measure in 1996. It generally reflects dollar figures computed with 2012 as the base year.

Takeaways

- The 2021 GDP/worker in chained dollars in Brown County was $76,525
- This is greater than all rural comparison groups

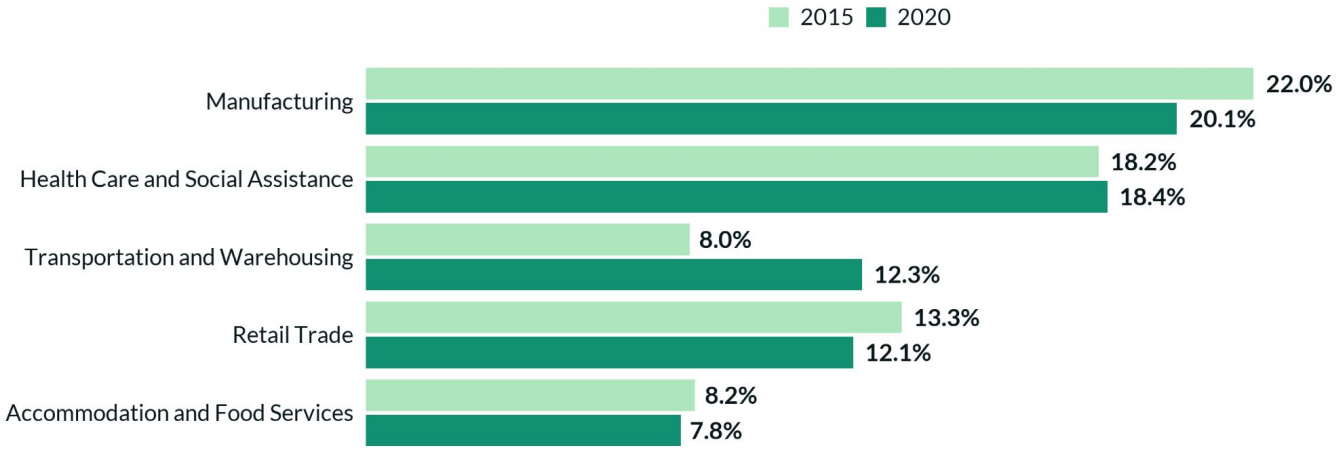
Implications

- A homegrown tech sector could contribute to additional gains in this metric - increasing both personal wealth and broader economic output in the region

Brown County's top five industries

Share of employment

For the top 5 industries in the county



Source: 2015 and 2020 County Business Patterns

Takeaways

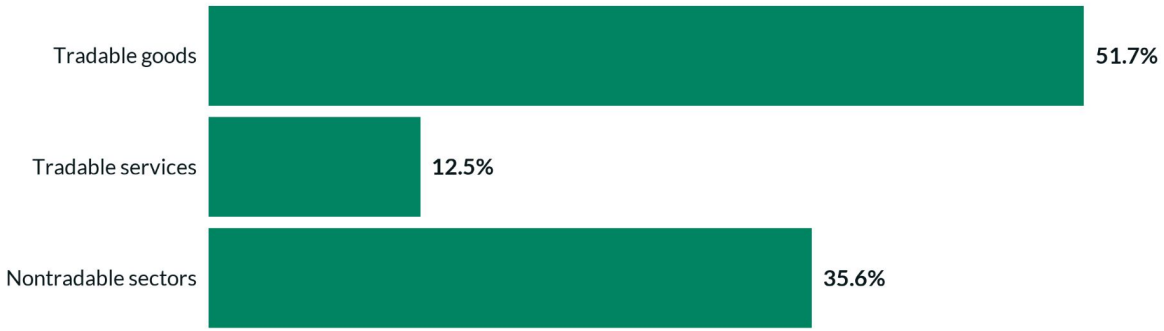
- 20.1% of workers are employed in Manufacturing in Brown County
- Health care and social assistance, Transportation and warehousing, Retail trade, and Accomodation and food services, round out the top five industries

Implications

- As automation continues to impact all sectors, jobs in these industries will likely decrease or evolve to become more reliant on digital and tech skills

The tradable goods sector accounts for over half of all employment

Share of employment by sector



Source: 2020 County Business Patterns

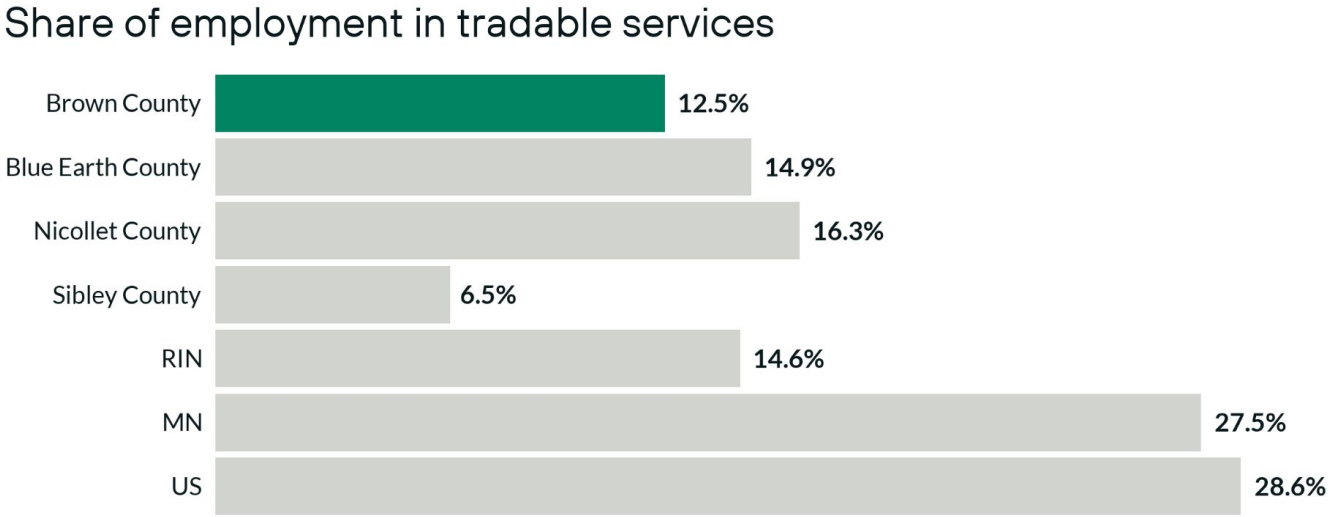
Takeaways

- Over half of Brown County's workforce is employed in the tradable goods sector
  - Likely attributable to to the strong manufacturing presence
- However, only 12.5% of residents are employed in tradable services such as banking and financial services, consulting, and tech

Implications

- Automation will continue to impact tradable goods sectors such as manufacturing, mining, and agriculture
- Fostering the growth of additional tradable services companies and jobs now will reduce the impact of future decline of jobs in the tradable goods sector

Percent of tradable services trails state and national comparators



Source: 2020 County Business Patterns

Takeaways

- Like its rural counterparts, Brown County trails state and national comparators in the percentage of residents employed in tradable services jobs

Implications

- Increasing the percentage of those employed in tradable services will create a more diversified, resilient, and prosperous local economy

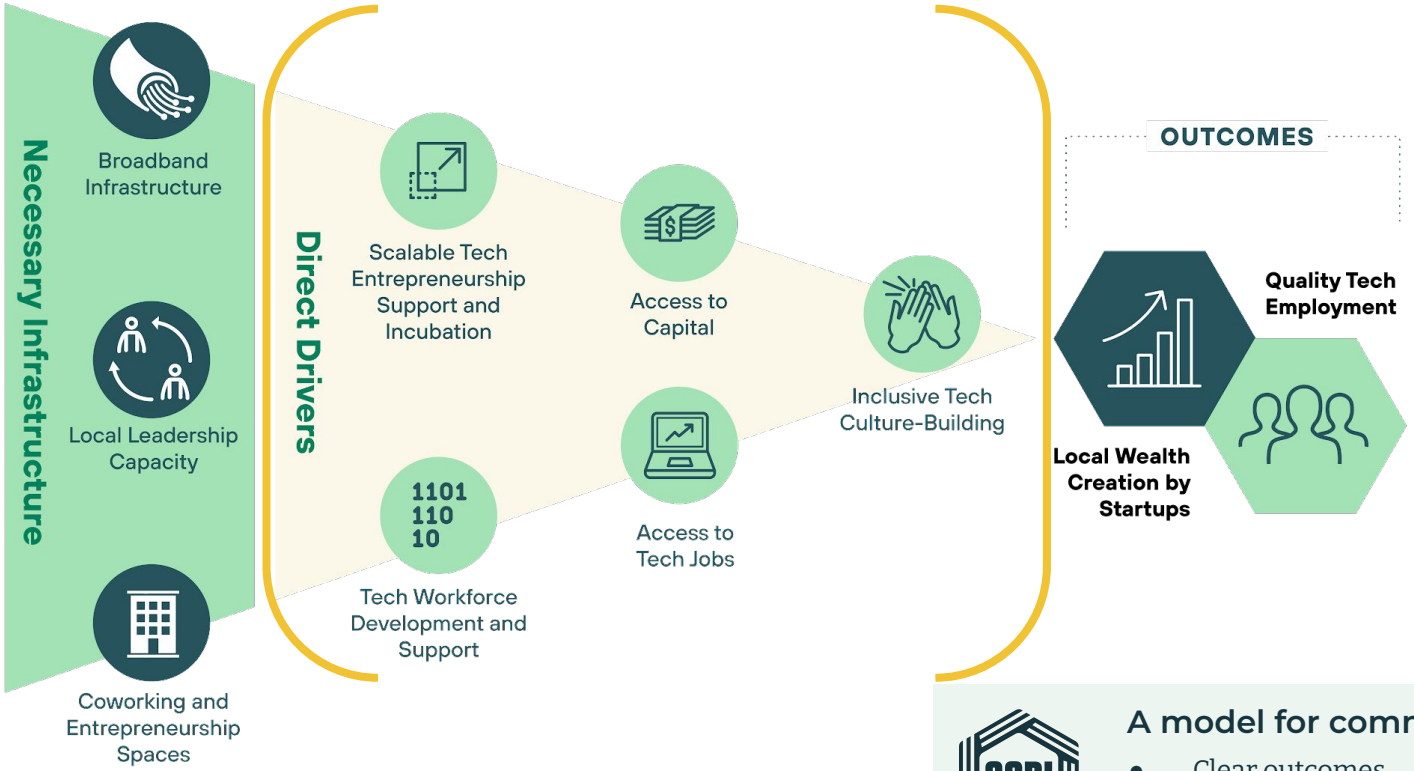
Local insights

What questions do you have so far?

Agenda

01. Necessary infrastructure
02. **Tech economy drivers**

CORI's tech economy ecosystem model



A model for community progress:

- Clear outcomes
- Deep understanding of required elements
- Awareness of interdependence of all elements

Key direct driver takeaways

Favorable elements supporting tech economy growth:

- More than one in five residents self-identify as entrepreneurs or sole proprietors
- Most residents have a computer or laptop in the home

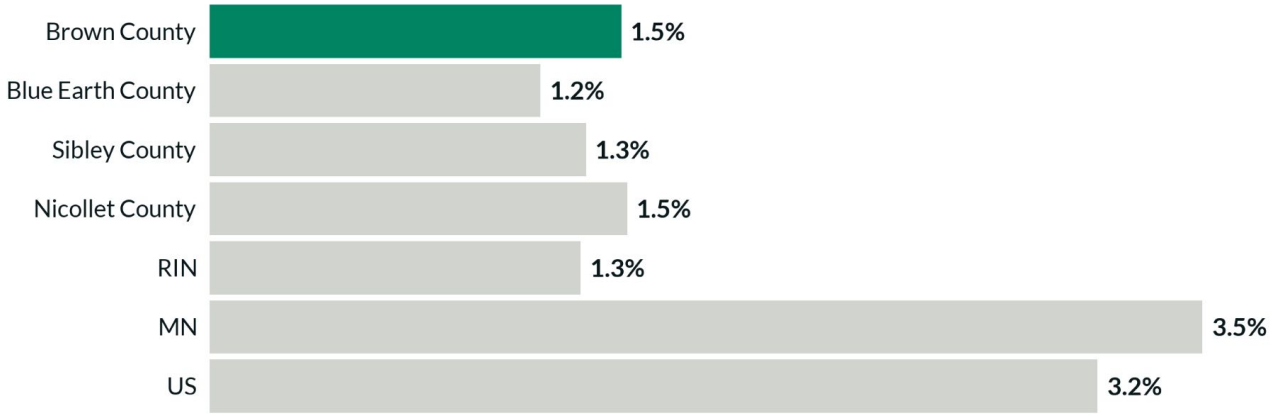
Key challenges that may limit tech economy growth:

- Self-employment decreased over the last five years
- Limited pool of potential angel investors

Only 1.5% of residents are employed in computer & math occupations

Tech employment

Share of workforce employed in computer and math occupations



Source: 2021 Lightcast

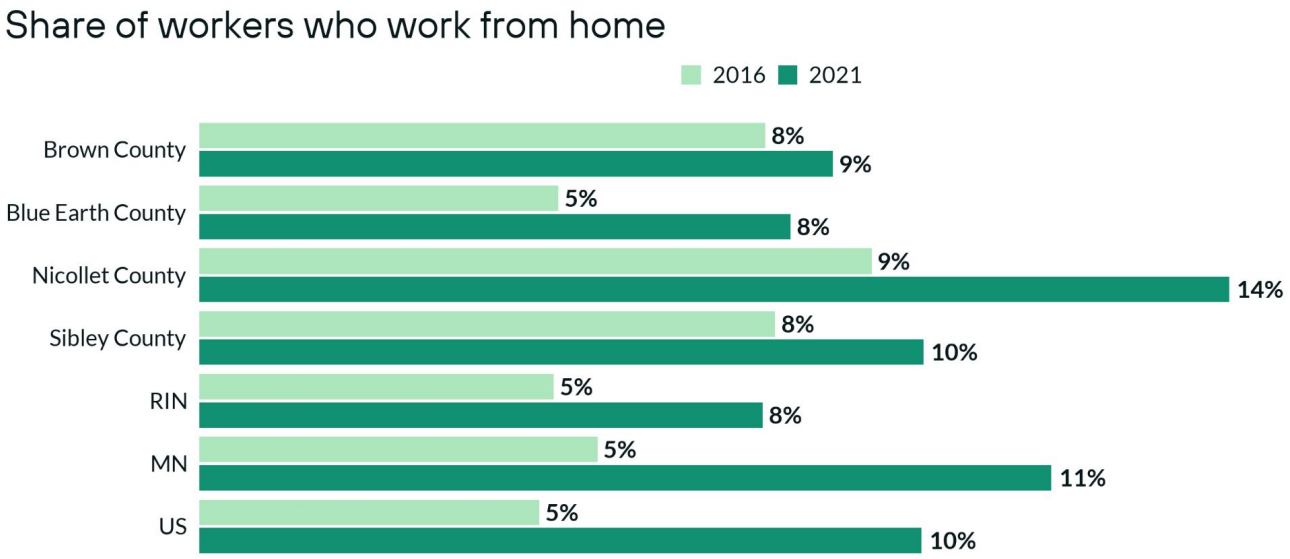
Takeaways

- Similar to rural peers workers in computer and math occupations accounted for 1.5% or less of all those employed in Brown County in 2021

Implications

- Working with local and regional major employers to identify the existing tech workforce and any employer needs for additional tech employees could be a good place to begin exploring the local tech talent landscape

Remote work was present prior to the COVID-19 pandemic



Source: 2016 and 2021 ACS 5-year estimates

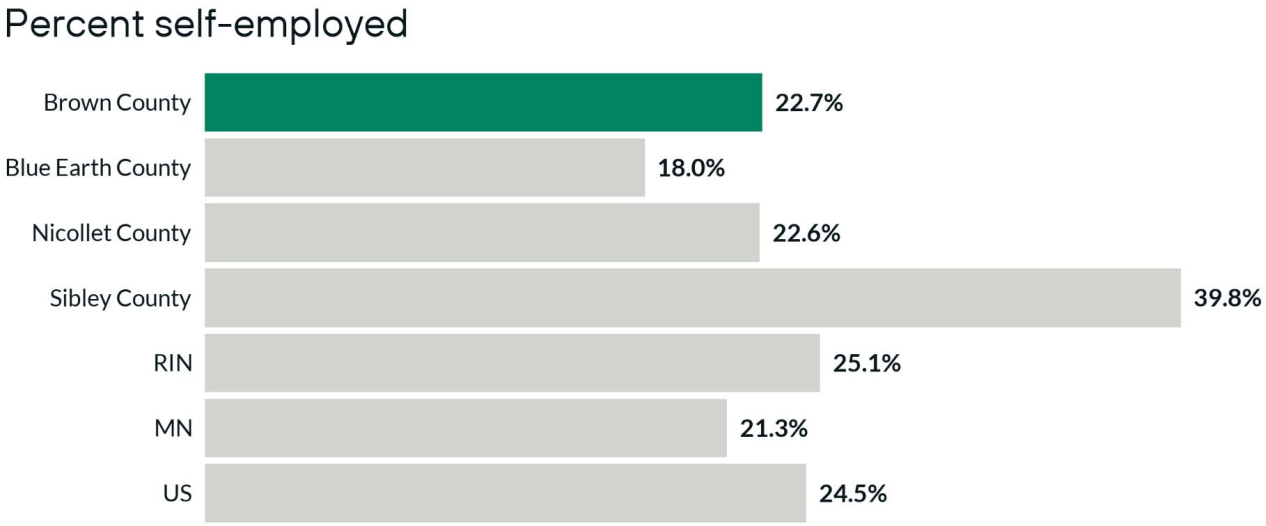
Takeaways

- Brown County had a larger than average remote workforce prior to the COVID-19 pandemic
- The percent of remote workers only increased minimally from 2016-2021 though

Implications

- Remote workers could be intentionally targeted to participate in meetups and other inclusive tech culture building activities that engage them in the local tech economy ecosystem

Entrepreneurship is part of the regional culture



Source: 2021 BEA estimates

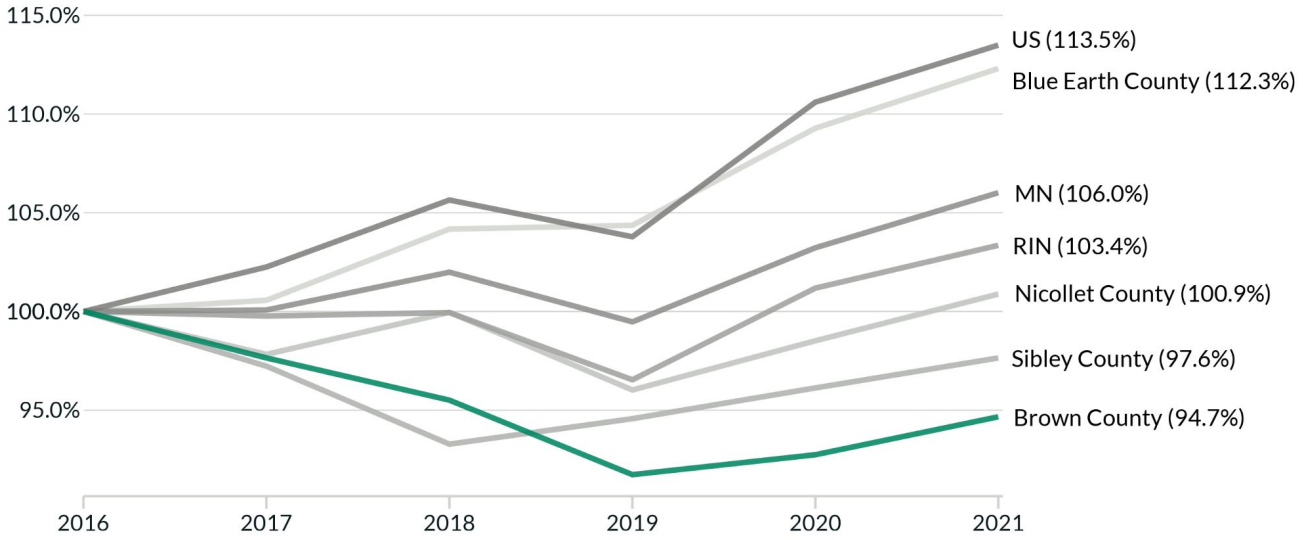
Takeaways

- Proprietors (small business owners / startup entrepreneurs / sole proprietors) account for nearly a quarter of all those working in Brown County
- There is an existing entrepreneurial & startup culture

However, self employment is less common than it was

Change in self-employment in the last five years

Employment indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 US Bureau of Economic Analysis.

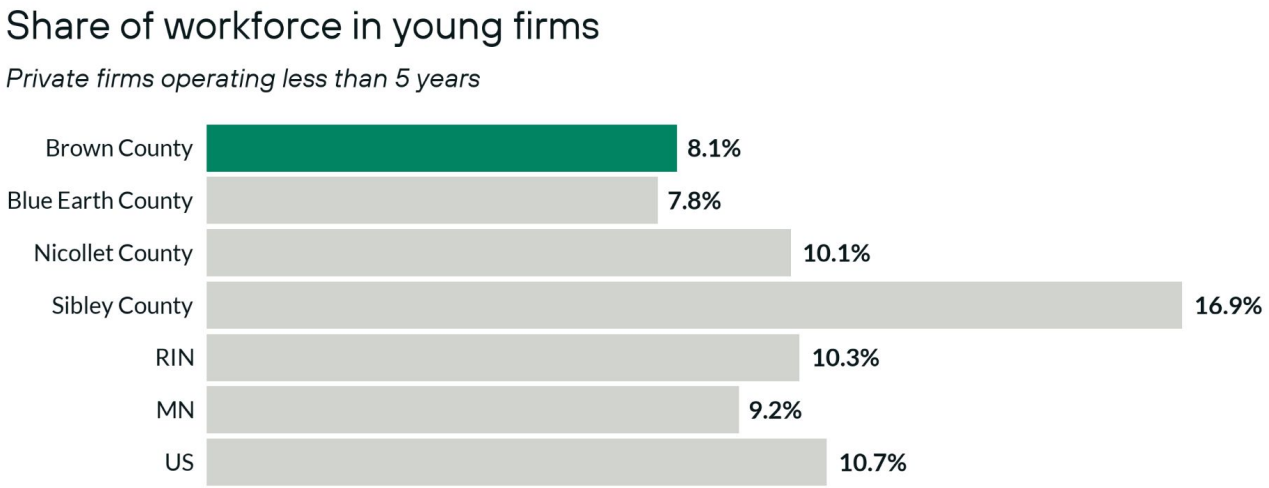
Takeaways

- 5.3% less individuals identified as self-employed in 2021 than did in 2016 in Brown County

Implications

- Proprietors could be a key demographic to target as future scalable entrepreneurship program participants

Employment in firms <5 years old trails comparators



Source: Quarterly Workforce Indicators.
Notes: Estimates represent the latest release available for each state as of 2022.

Takeaways

- 8.1% of workers in Brown County work in companies less than five years old
- This trails most comparison geographies

Implications

- Identifying these young firms and employees could provide a starting point for outreach to find participants for scalable tech entrepreneurship programming

Most residents have access to technology

Source: 2021 ACS 5-year estimates

91%

of residents have access to a computer in the home

Takeaways

- 9 in 10 residents have access to some form of computer in the home that could support their engagement in the digital economy

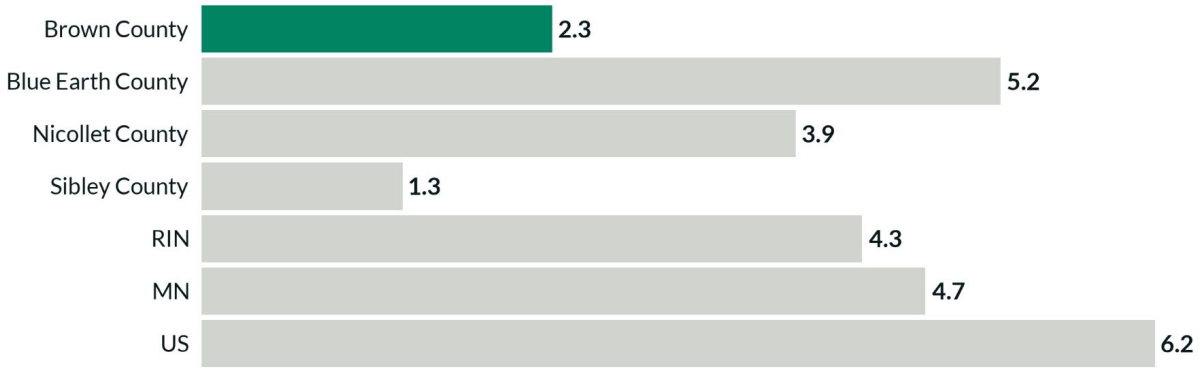
Implications

- However, not all devices may have the computing power necessary to engage in the digital economy. Additional resources may be needed for residents to engage in career fields like coding and data science.

Smaller number of business web domains

Digital technology utilization index

Business web domains per capita



Source: 2022 GoDaddy data

Takeaways

- Brown County trails most comparison geographies in the number of business web domains per capita

Implications

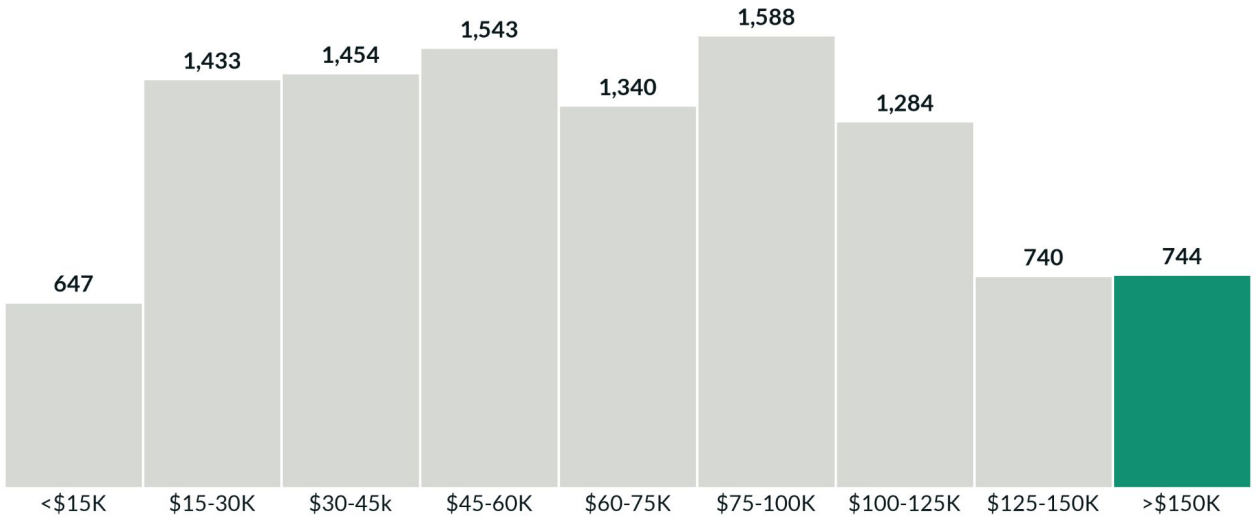
- Indicates an opportunity to grow a tech economy in the region
- It may be more difficult to find mentors or people who have "been there and done that" locally in the early days of building your tech economy ecosystem

Minnesota State University - Mankato Computer Science bachelor's degrees awarded 2021-2022

Limited pool of potential angel investors

Income distribution

Number of households in each income bracket



Source: 2021 ACS 5-year estimates

Takeaways

- 744 Brown County households may be eligible to become accredited angel investors

Implications

- These individuals could support startup growth and acceleration through equity-based lending

Thank you

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Introductions

Rachel Barra

Community Manager

Nora Foote

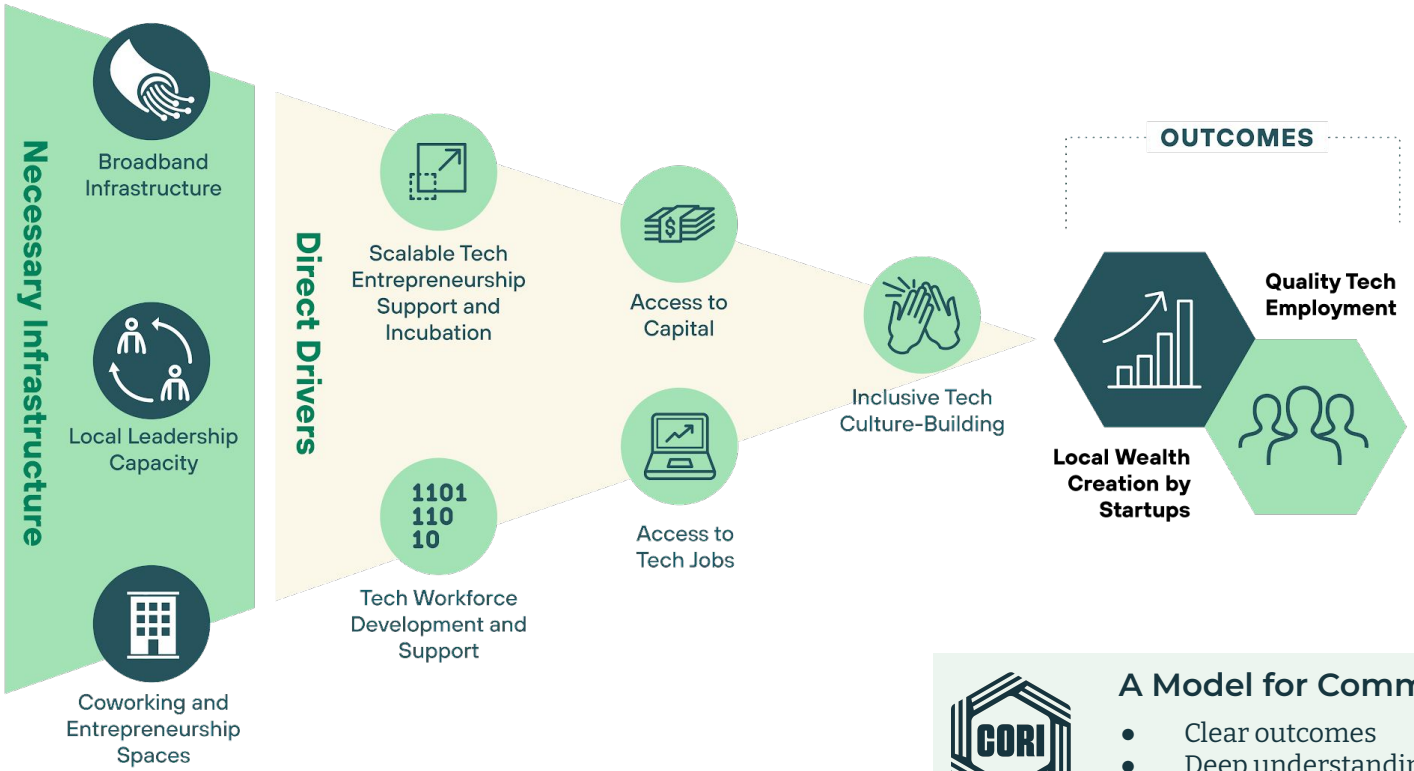
Head of Tech Based Economic Development

Betsy Thompson

Head of Data Products

Agenda

CORI's tech economy ecosystem model

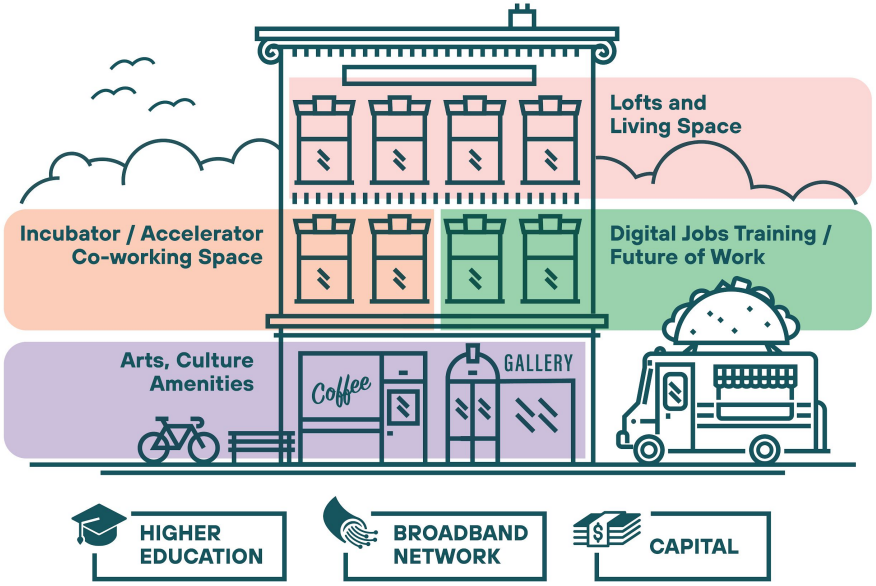


A Model for Community Progress:

- Clear outcomes
- Deep understanding of required elements
- Awareness of interdependence of all elements

Helping communities build innovation hubs

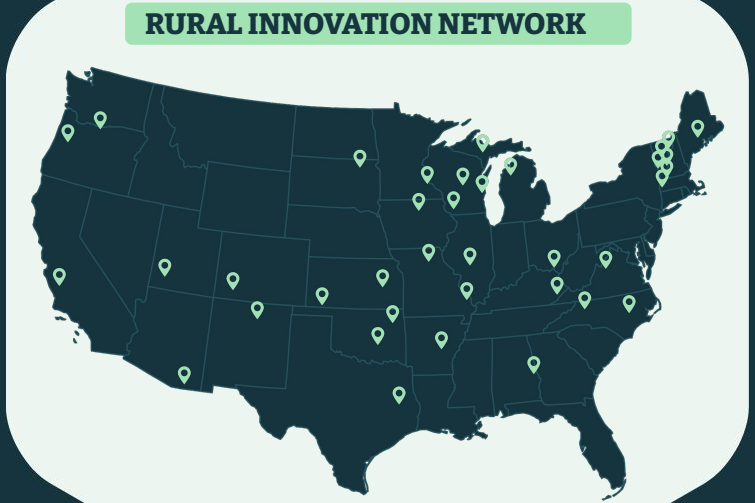
CORI's Innovation Hub Model



Connecting key assets in one centralized location

OUR NETWORK

- Through the Rural Innovation Initiative, **we have helped raise more than $29.9M** on behalf of rural communities to support the development of their local tech economies.
- Our Rural Innovation Network is **37 communities across 25 states** and growing.
- Our Network communities cover **a population of more than 2.8M** (equivalent to the fourth-largest city in the country).
- Our Network is home to **more than 17 incubators and accelerators** that support local tech startup founders and innovators.
- Through the CORI Innovation Fund, we've made **investments in 10 scalable rural tech startups**. These startups have **raised $20M+** in co / follow-on investments.



Report geography

Primary counties:

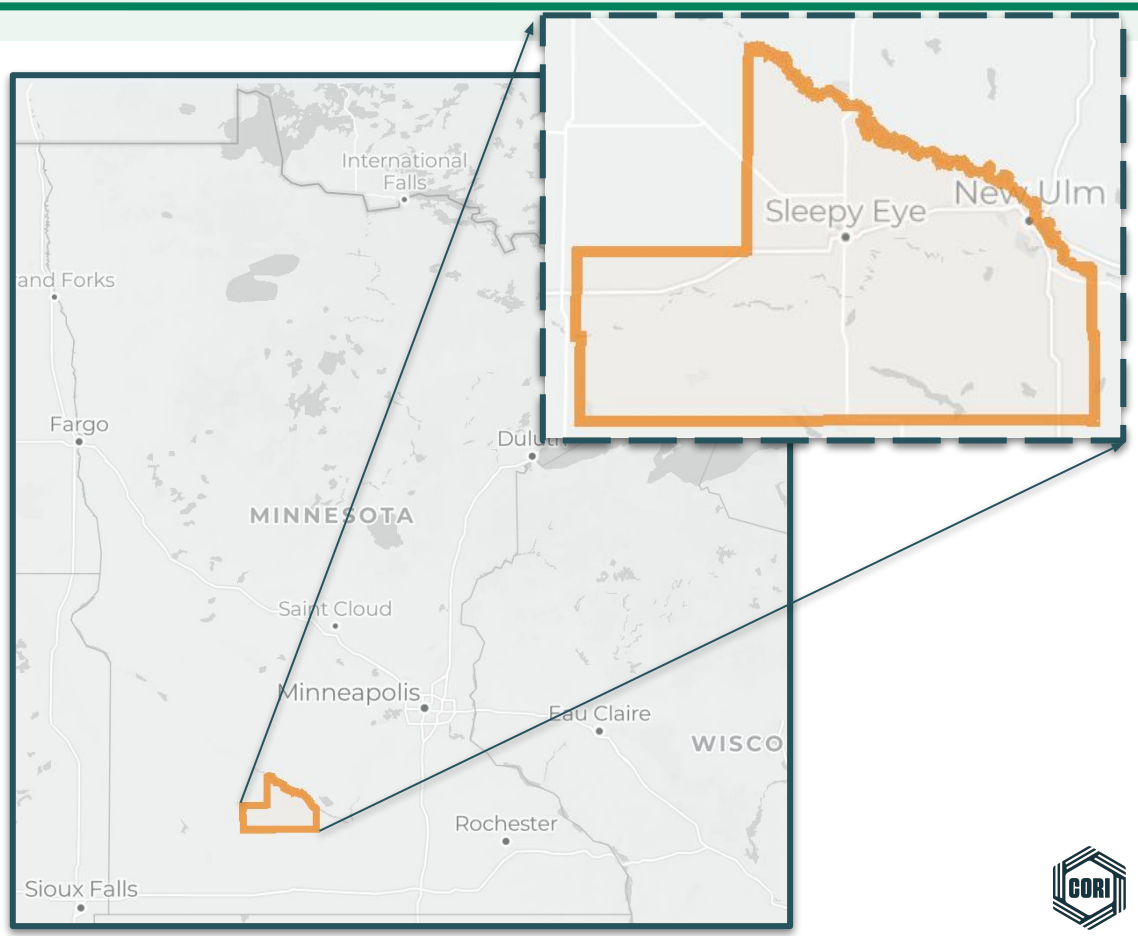
- Brown County

Comparison counties:

- Nicollet County
- Blue Earth County
- Sibley County

Other comparators:

- CORI's Rural Innovation Network (RIN)
- State of Minnesota
- United States



Local insights

What questions do you have so far?

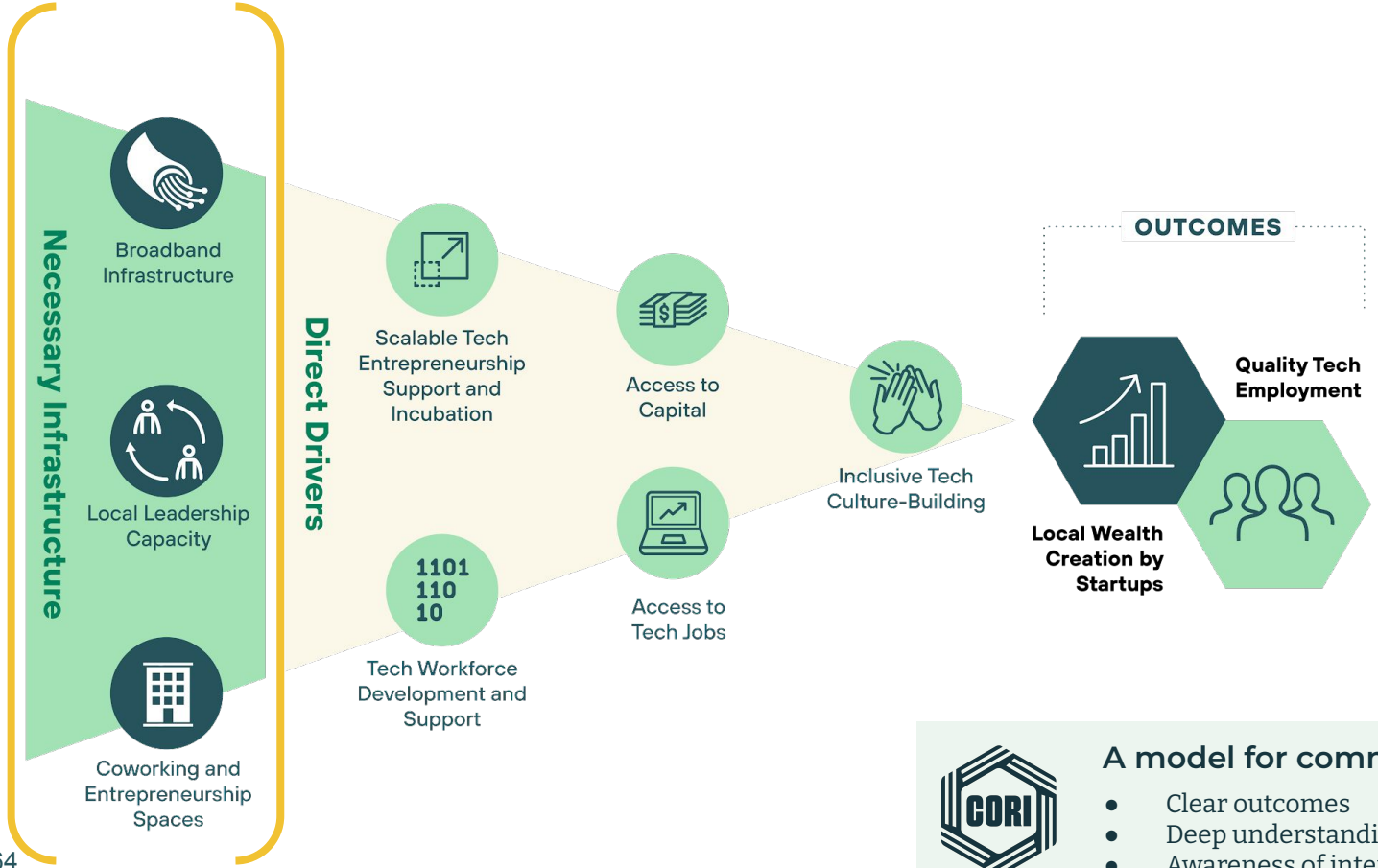
What are you hoping to learn today?

Please feel free to ask questions & engage throughout the presentation

Agenda

01. Introduction and context
02. Necessary infrastructure
03. Tech economy drivers

CORI's tech economy ecosystem model



A model for community progress:

- Clear outcomes
- Deep understanding of required elements
- Awareness of interdependence of all elements

Key necessary infrastructure takeaways

Favorable foundations supporting tech economy growth:

- Population decline rebounded during the COVID-19 pandemic
- Exceptional broadband infrastructure

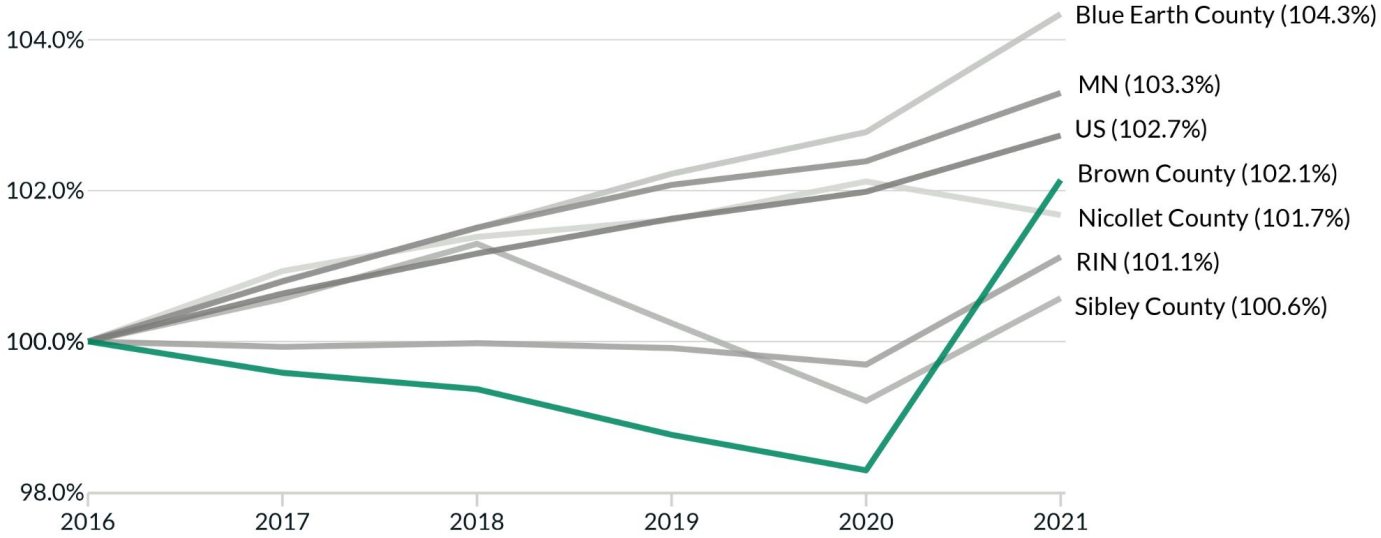
Key challenges that may limit tech economy growth:

- Employment in the tradable services sector trails most geographies
- Employment rate is high potentially limiting the pool of residents looking for upskilling/reskilling into tech careers

Population rebounded between 2020-2021

Population change in the last five years

Population indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 County Population Characteristics.

Takeaways

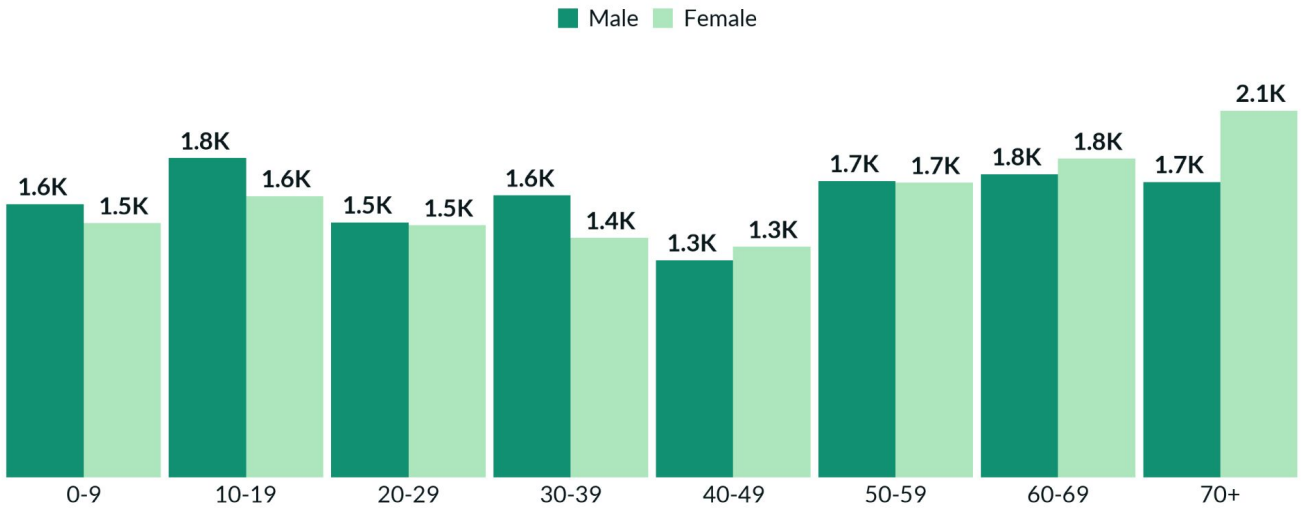
- Brown County's population is currently 2.1% larger than it was in 2016. This is likely due to an influx of new residents during the COVID-19 pandemic

Implications

- Supporting the creation of new digital and tech careers could help retain people in the region or attract new residents

Young people account for about 37% of the population

Population age and gender



Source: 2021 ACS 5-year estimates

Takeaways

- Nearly 37% of the population is <29 years old

Implications

- Young people 0-29 years could be a good target population for digital/tech skilling opportunities

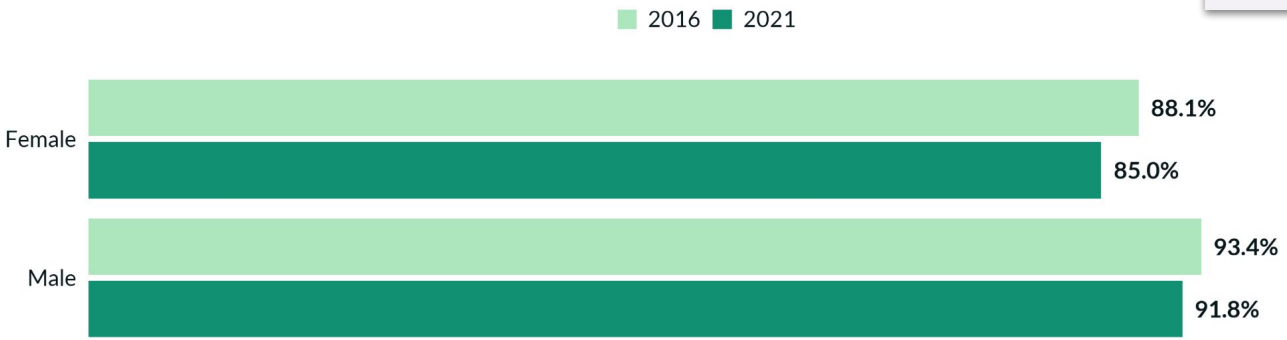
Employment rate remains robust even with decline

Takeaways

- Of the population that is of prime working and earning age (25-54 years) 85% of females are employed and 91.8% of males are employed

Prime age employment rate

Percent of population aged 25 to 54 that is employed

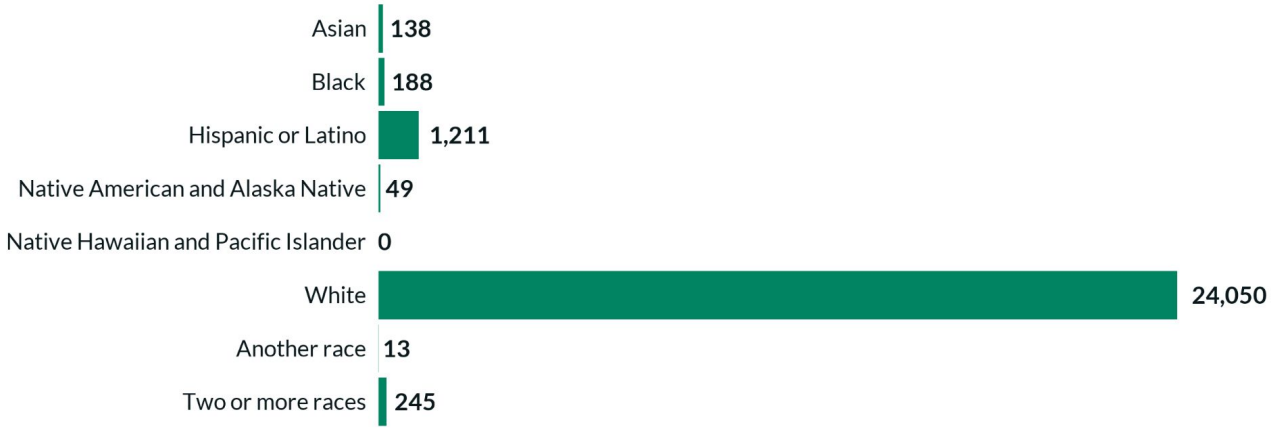


Source: 2016 and 2021 ACS 5-year estimates

Brown County has limited racial and ethnic diversity

Race and ethnicity

Population counts include race alone, excluding those who identify as Hispanic or Latino



Source: 2021 ACS 5-year estimates

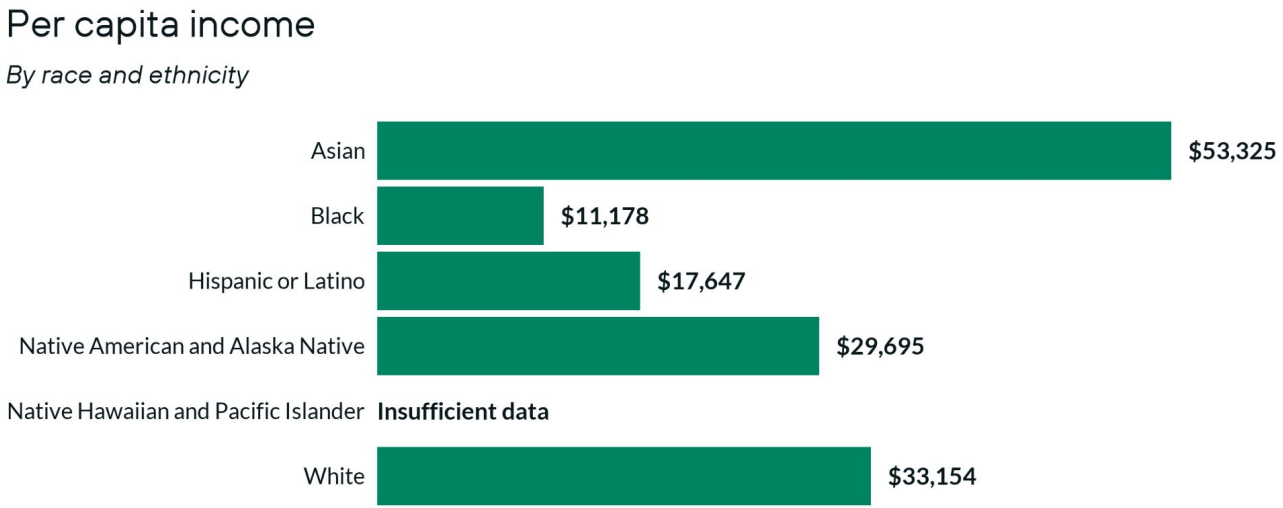
Takeaways

- Brown County is largely homogeneous with 24,000+ residents identifying as white, just over 1,200 residents identifying as Hispanic or Latino, and about 650 residents identifying as another race or ethnicity

Implications

- Other forms of inclusion that include outreach to underemployed and unemployed, people in recovery, single parents, and other demographic groups could play a role
- With limited racial and ethnic diversity being intentionally inclusive rather than unintentionally exclusive will be key

Bootstrapping tech companies may be possible



Source: 2021 ACS 5-year estimates

Takeaways

- Per capita income in the largest population only slightly trails the state of Minnesota and United States as a whole

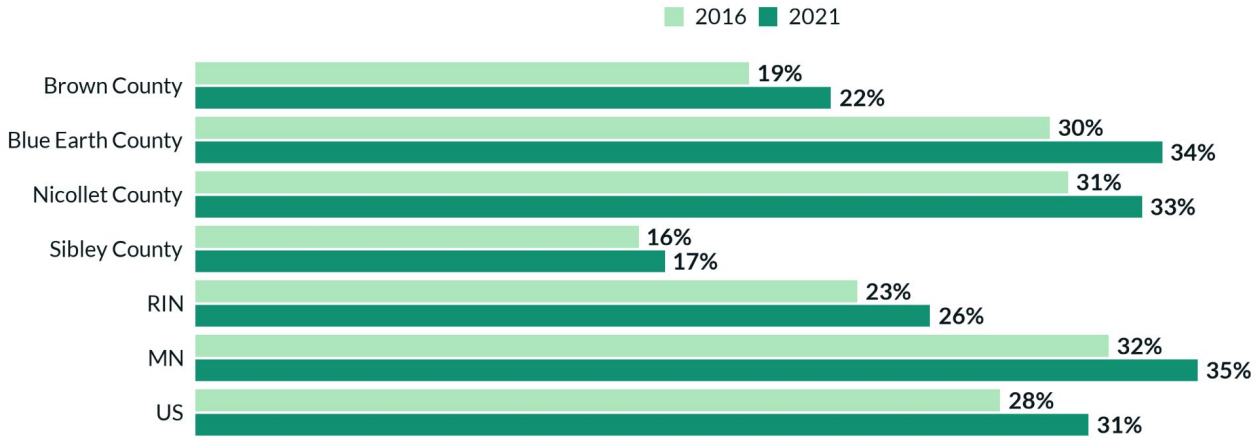
Implications

- It still may be difficult for some members of the community to self-fund and "bootstrap" potentially scalable tech startups
- It could be prudent to explore non-traditional funding mechanisms to support founders

Increasing share of residents have a Bachelor's Degree

Educational attainment

Percent of population with a bachelor's degree or higher



Source: 2016 and 2021 ACS 5-year estimates

Takeaways

- The number of residents with a Bachelor's degree increased from 2021 to 2016. However, Brown County still trails all comparison geographies except Sibley County

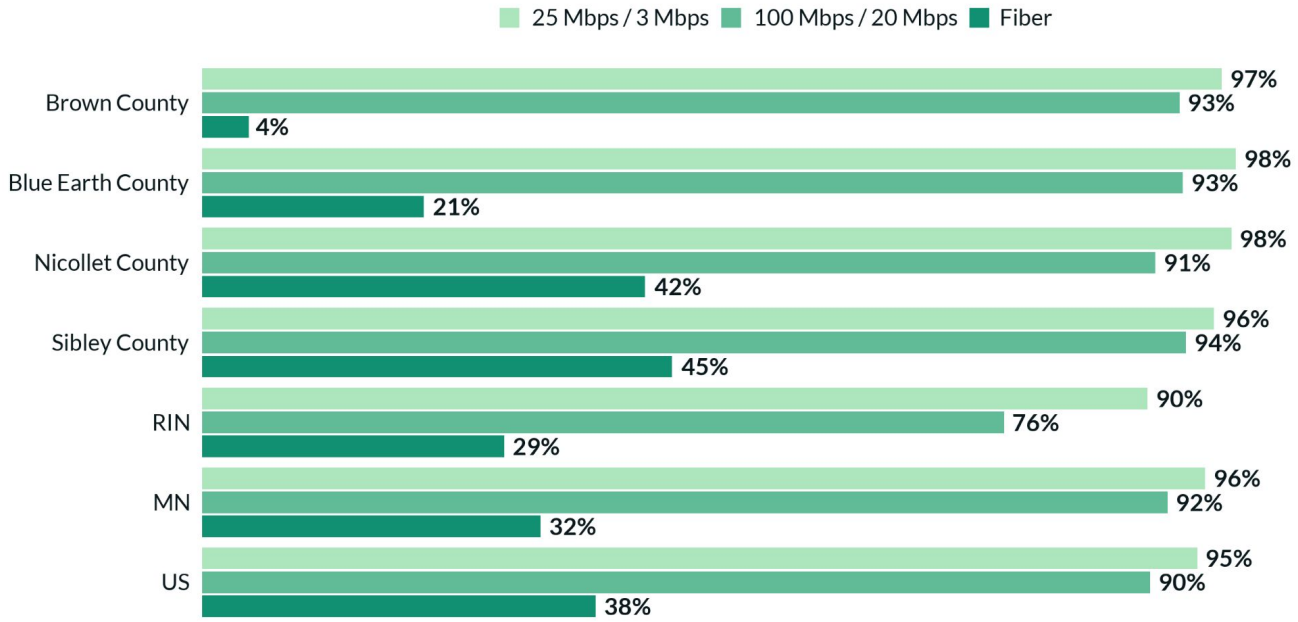
Implications

- Non-traditional tech skilling initiatives like bootcamps, certificates, or other short duration but high impact training opportunities may appeal to residents without degrees
- Retaining graduates from regional higher ed institutions could be a key strategy

Brown County has exceptional high-speed internet availability

Broadband access - Residential services

Percent of broadband serviceable locations for FCC service tiers or technology



Source: FCC National Broadband Map - 2022 Release

Takeaways

- Per FCC data, 97% of Brown County residents are served by high speed internet
- This is on par with all comparison geographies

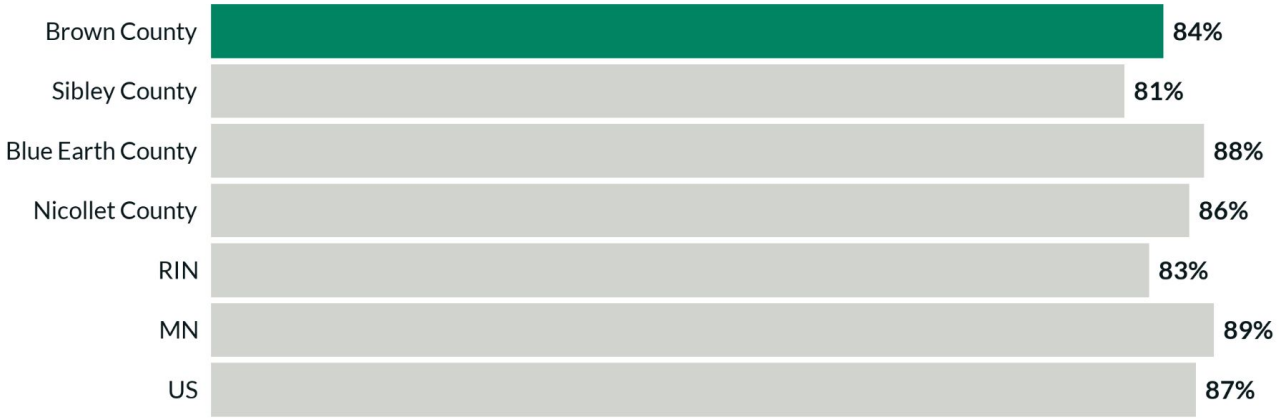
Implications

- As long as internet providers offer affordable services, residents should have the ability to participate in digital and tech skilling opportunities and employment

Most residents report adequate service

Broadband usage

Share of households with a broadband subscription of any type



Source: 2021 ACS 5-year estimates

Takeaways

- Per ACS self-reporting, 84% of residents in Brown County indicate they subscribe to some sort of internet service

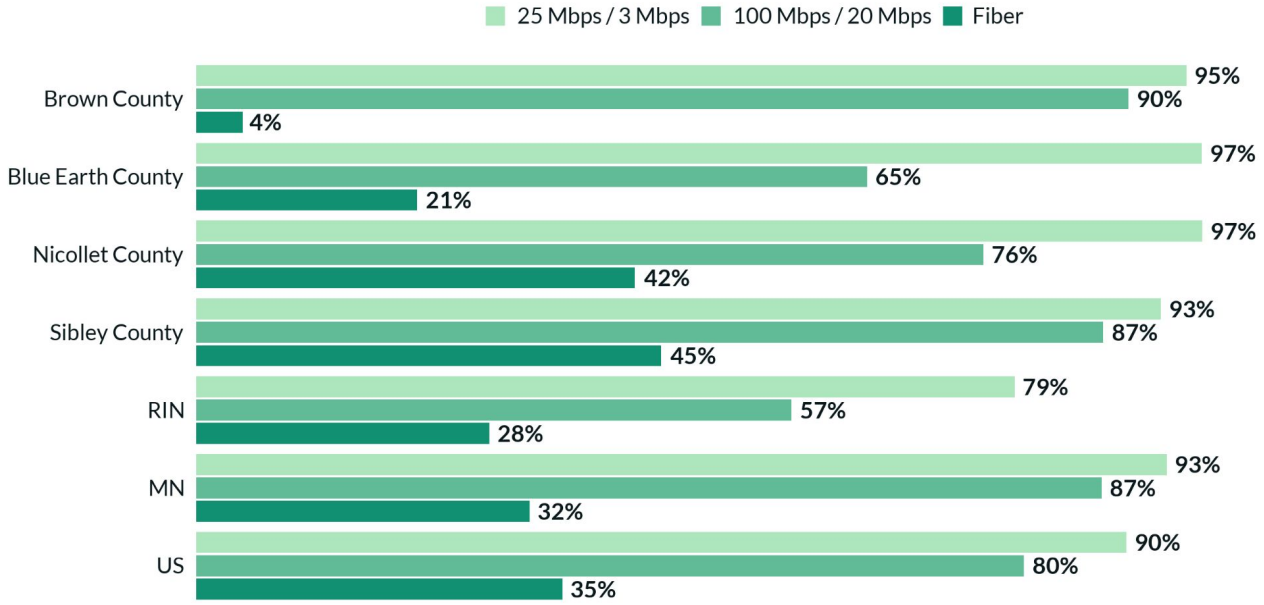
Implications

- Some residents may have difficulty participating in digital and tech skilling opportunities and employment without internet

Businesses also have access to high speed internet

Broadband access - Business services

Percent of broadband serviceable locations for FCC service tiers or technology



Source: FCC National Broadband Map - 2022 Release

Takeaways

- Per FCC data, 95% of business locations in Brown County are served by internet with speeds greater than 25Mbps up and 3Mbps down

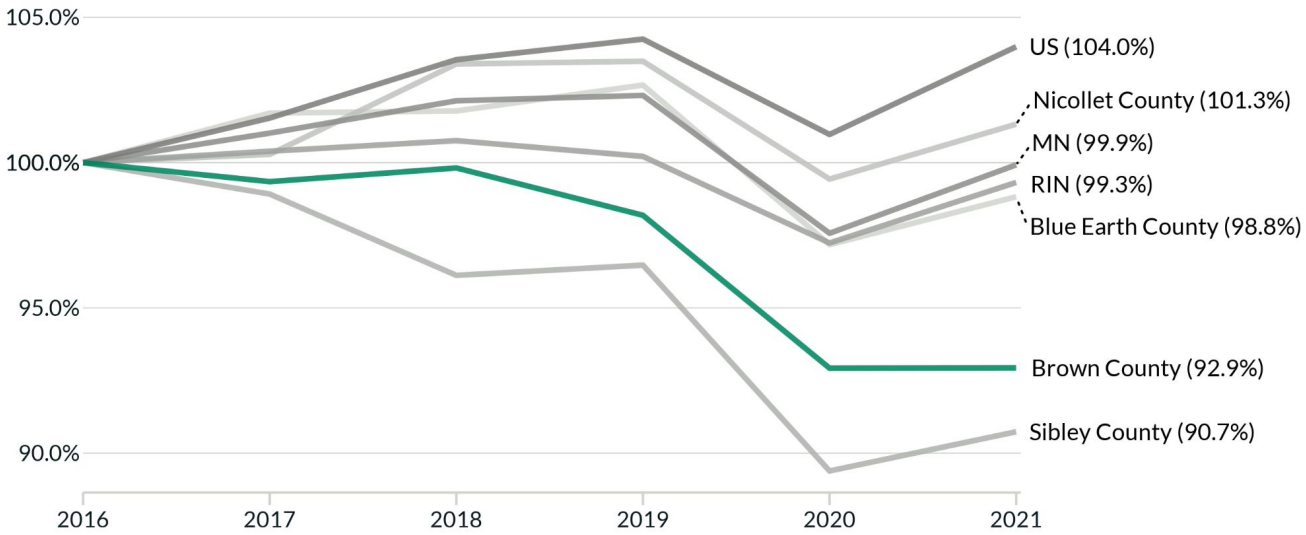
Implications

- Tech businesses are likely able to freely locate in the region without worrying about connectivity challenges

Less people are employed than in 2016

Employment change in the last five years

Employment indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 US Bureau of Economic Analysis.

Takeaways

- Employment remained stagnant from 2016-2018, before declining from 2018-2021

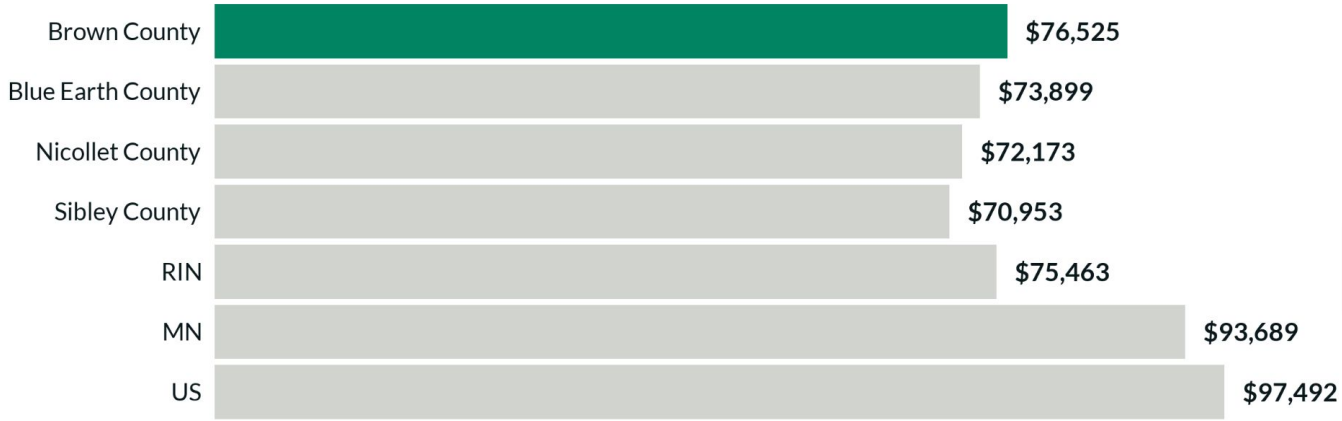
Implications

- Attracting new residents could increase the local talent pool

GDP per worker exceeds that of rural counterparts

Real GDP per worker

In chained 2012 dollars



Source: 2021 BEA estimates

*Chained dollars is a method of adjusting real dollar amounts for inflation over time, to allow the comparison of figures from different years. The U.S. Department of Commerce introduced the chained-dollar measure in 1996. It generally reflects dollar figures computed with 2012 as the base year.

Takeaways

- The 2021 GDP/worker in chained dollars in Brown County was $76,525
- This is greater than all rural comparison groups

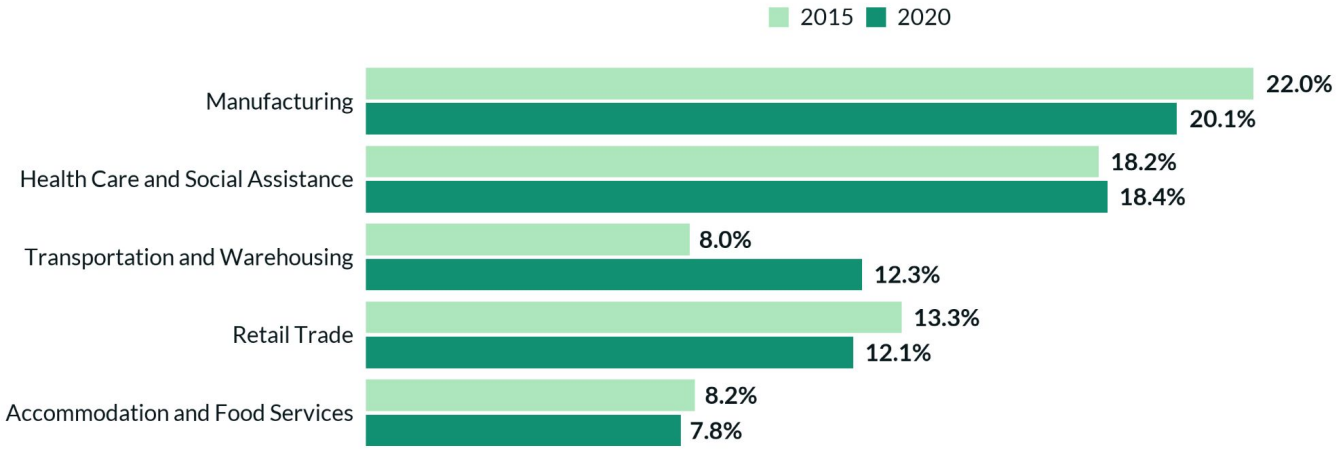
Implications

- A homegrown tech sector could contribute to additional gains in this metric - increasing both personal wealth and broader economic output in the region

Brown County's top five industries

Share of employment

For the top 5 industries in the county



Source: 2015 and 2020 County Business Patterns

Takeaways

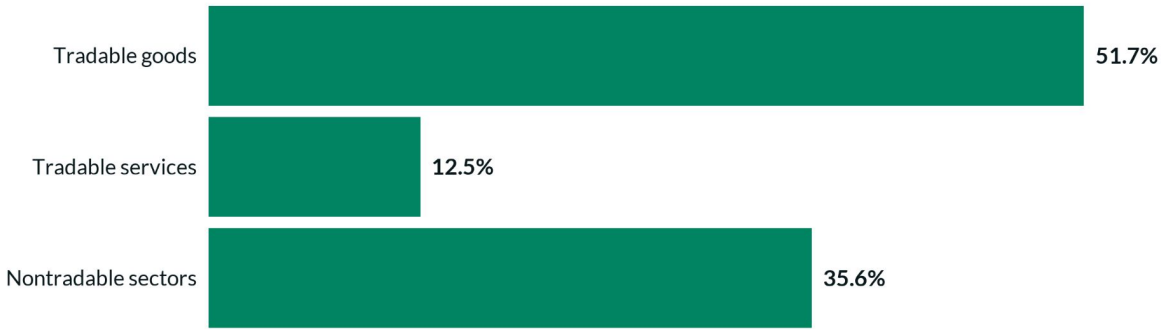
- 20.1% of workers are employed in Manufacturing in Brown County
- Health care and social assistance, Transportation and warehousing, Retail trade, and Accomodation and food services, round out the top five industries

Implications

- As automation continues to impact all sectors, jobs in these industries will likely decrease or evolve to become more reliant on digital and tech skills

The tradable goods sector accounts for over half of all employment

Share of employment by sector



Source: 2020 County Business Patterns

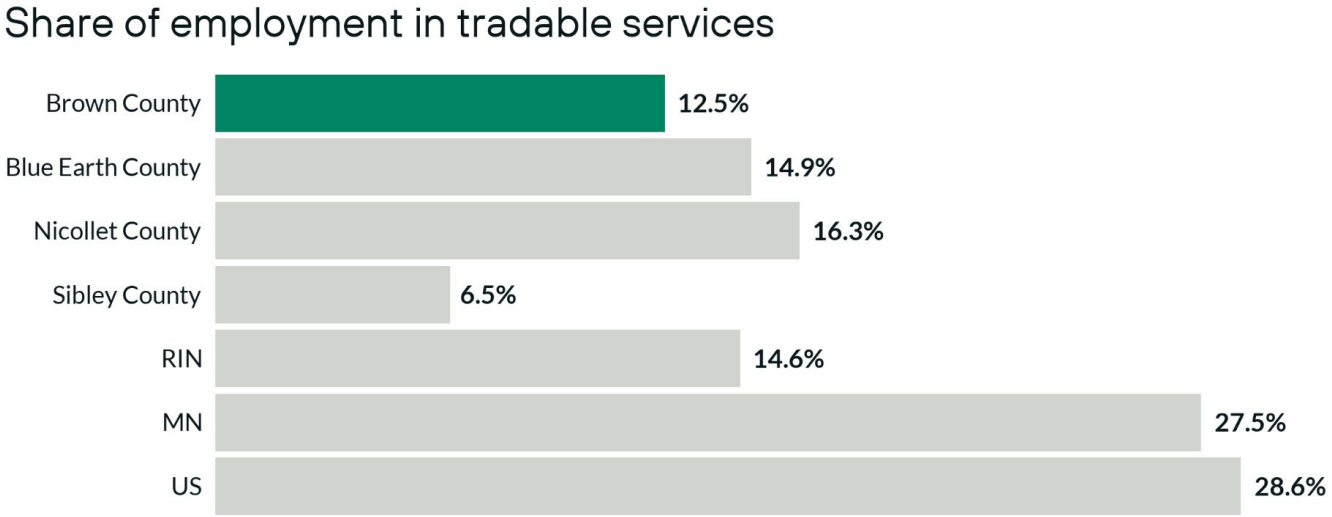
Takeaways

- Over half of Brown County's workforce is employed in the tradable goods sector
  - Likely attributable to to the strong manufacturing presence
- However, only 12.5% of residents are employed in tradable services such as banking and financial services, consulting, and tech

Implications

- Automation will continue to impact tradable goods sectors such as manufacturing, mining, and agriculture
- Fostering the growth of additional tradable services companies and jobs now will reduce the impact of future decline of jobs in the tradable goods sector

Percent of tradable services trails state and national comparators



Source: 2020 County Business Patterns

Takeaways

- Like its rural counterparts, Brown County trails state and national comparators in the percentage of residents employed in tradable services jobs

Implications

- Increasing the percentage of those employed in tradable services will create a more diversified, resilient, and prosperous local economy

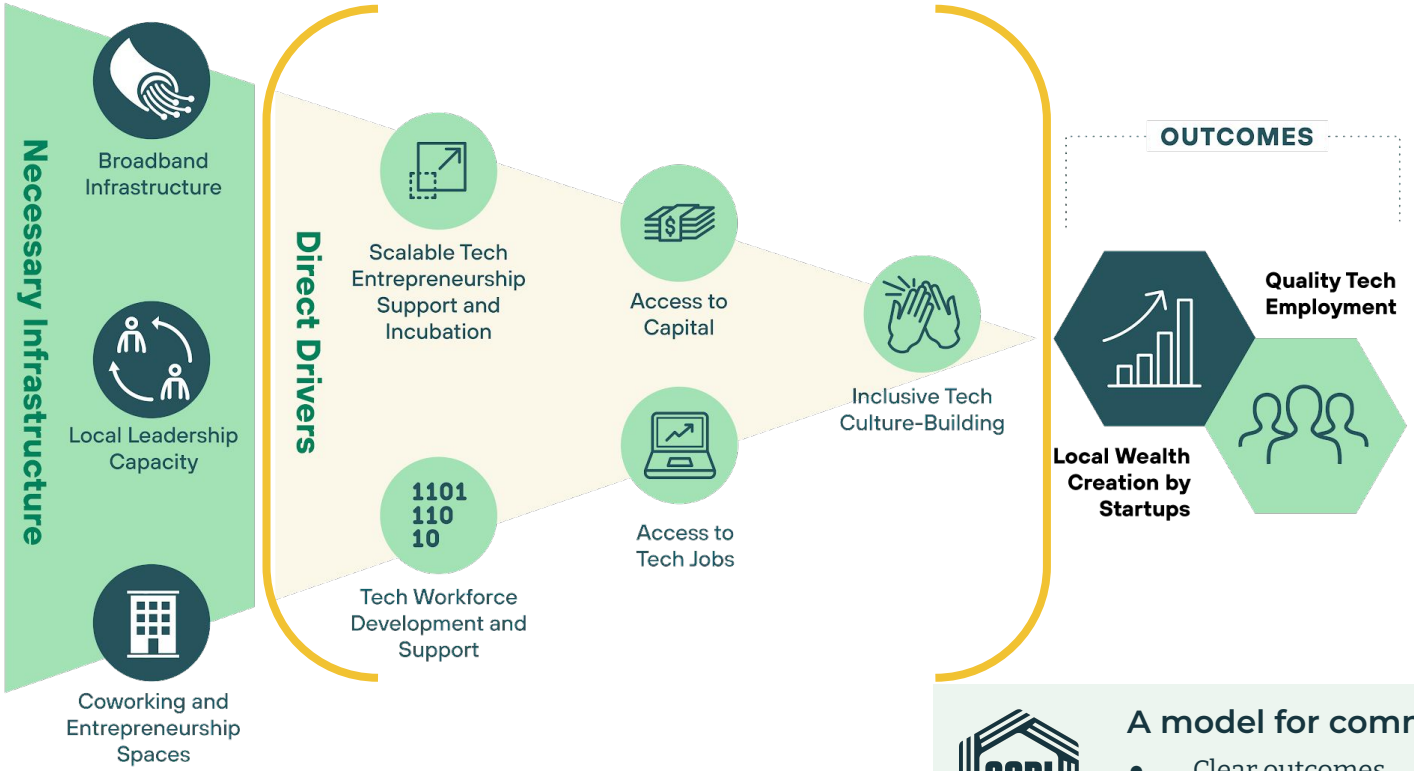
Local insights

What questions do you have so far?

Agenda

01. Introduction and context
02. Necessary infrastructure
03. **Tech economy drivers**

CORI's tech economy ecosystem model



A model for community progress:

- Clear outcomes
- Deep understanding of required elements
- Awareness of interdependence of all elements

Key direct driver takeaways

Favorable elements supporting tech economy growth:

- More than one in five residents self-identify as entrepreneurs or sole proprietors
- Most residents have a computer or laptop in the home

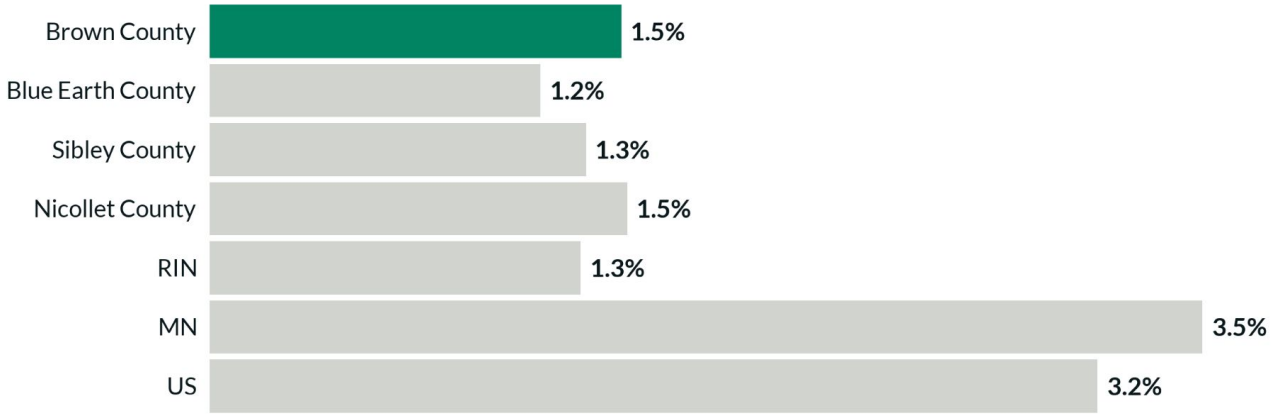
Key challenges that may limit tech economy growth:

- Self-employment decreased over the last five years
- Limited pool of potential angel investors

Only 1.5% of residents are employed in computer & math occupations

Tech employment

Share of workforce employed in computer and math occupations



Source: 2021 Lightcast

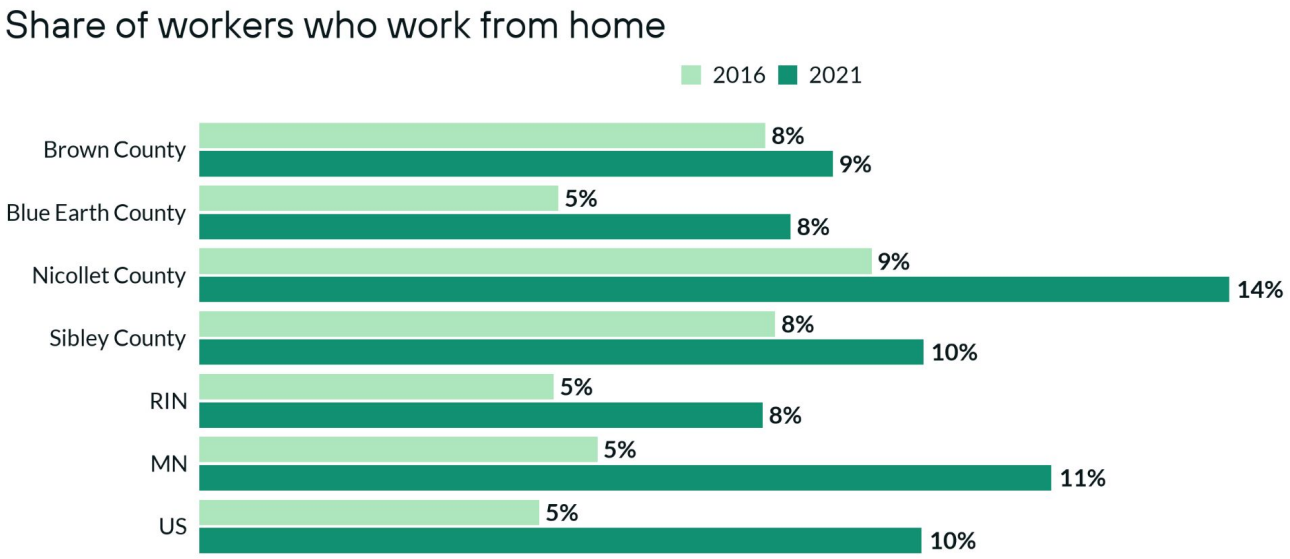
Takeaways

- Similar to rural peers workers in computer and math occupations accounted for 1.5% or less of all those employed in Brown County in 2021

Implications

- Working with local and regional major employers to identify the existing tech workforce and any employer needs for additional tech employees could be a good place to begin exploring the local tech talent landscape

Remote work was present prior to the COVID-19 pandemic



Source: 2016 and 2021 ACS 5-year estimates

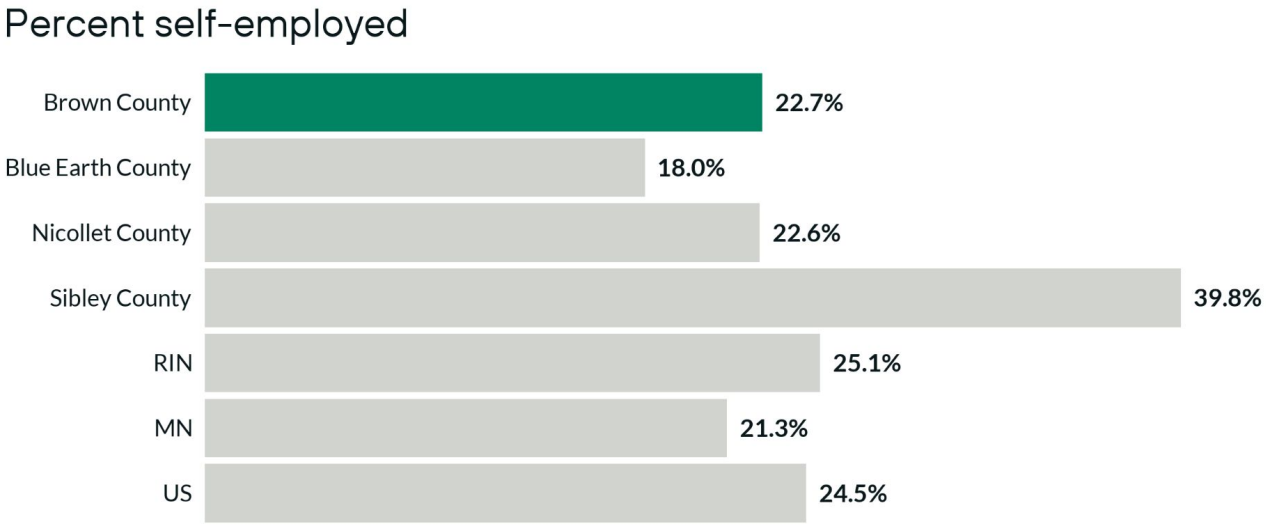
Takeaways

- Brown County had a larger than average remote workforce prior to the COVID-19 pandemic
- The percent of remote workers only increased minimally from 2016-2021 though

Implications

- Remote workers could be intentionally targeted to participate in meetups and other inclusive tech culture building activities that engage them in the local tech economy ecosystem

Entrepreneurship is part of the regional culture



Source: 2021 BEA estimates

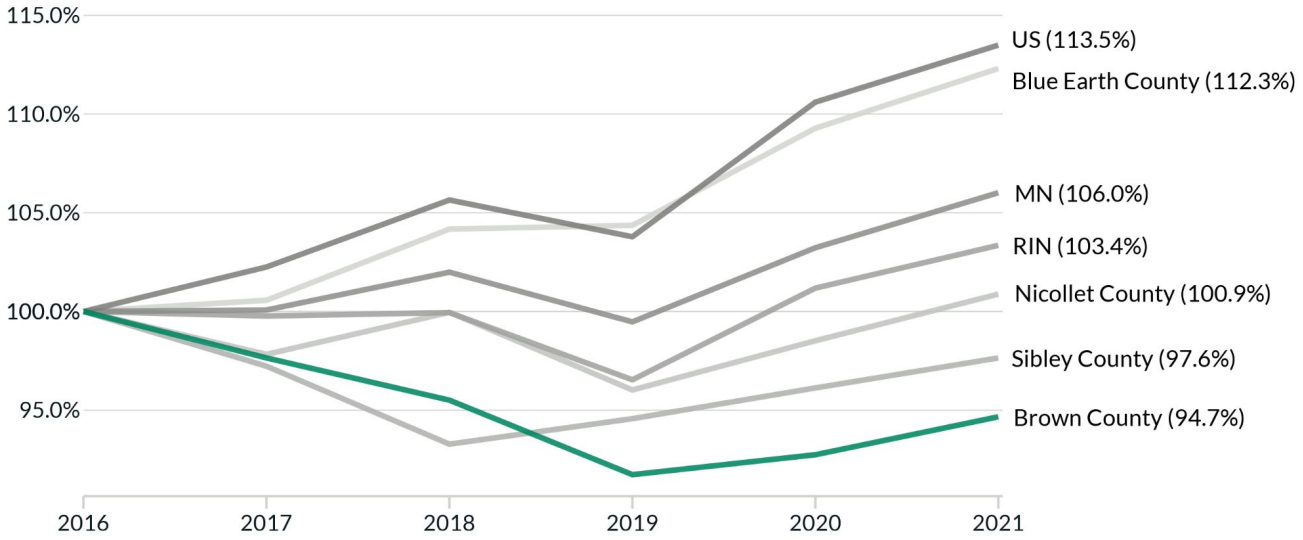
Takeaways

- Proprietors (small business owners / startup entrepreneurs / sole proprietors) account for nearly a quarter of all those working in Brown County
- There is an existing entrepreneurial & startup culture

However, self employment is less common than it was

Change in self-employment in the last five years

Employment indexed to the first year



Source: 2016, 2017, 2018, 2019, 2020, and 2021 US Bureau of Economic Analysis.

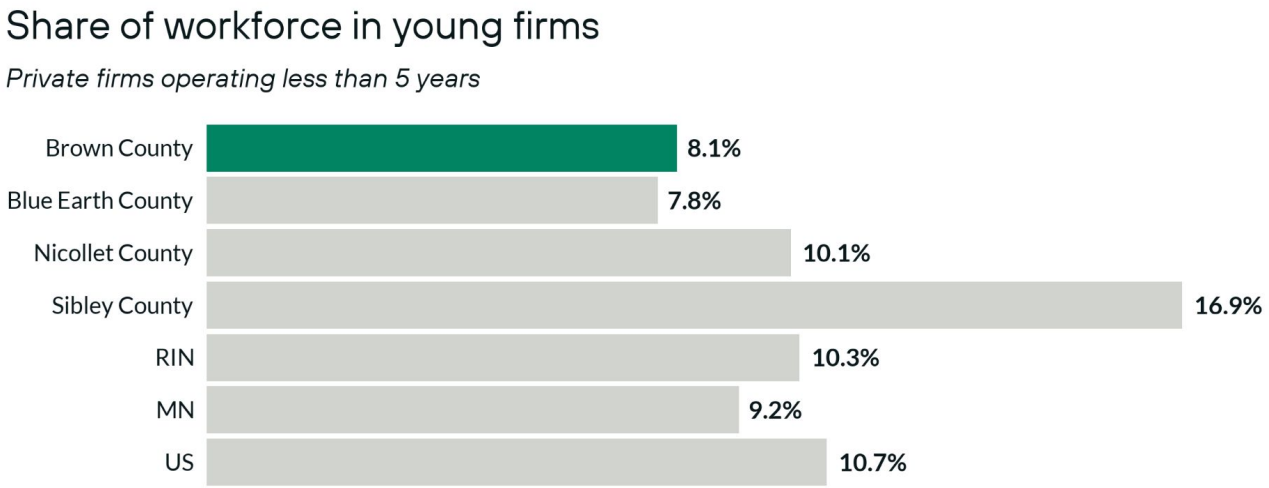
Takeaways

- 5.3% less individuals identified as self-employed in 2021 than did in 2016 in Brown County

Implications

- Proprietors could be a key demographic to target as future scalable entrepreneurship program participants

Employment in firms <5 years old trails comparators



Source: Quarterly Workforce Indicators.
Notes: Estimates represent the latest release available for each state as of 2022.

Takeaways

- 8.1% of workers in Brown County work in companies less than five years old
- This trails most comparison geographies

Implications

- Identifying these young firms and employees could provide a starting point for outreach to find participants for scalable tech entrepreneurship programming

Most residents have access to technology

Source: 2021 ACS 5-year estimates

91%

of residents have access to a computer in the home

Takeaways

- 9 in 10 residents have access to some form of computer in the home that could support their engagement in the digital economy

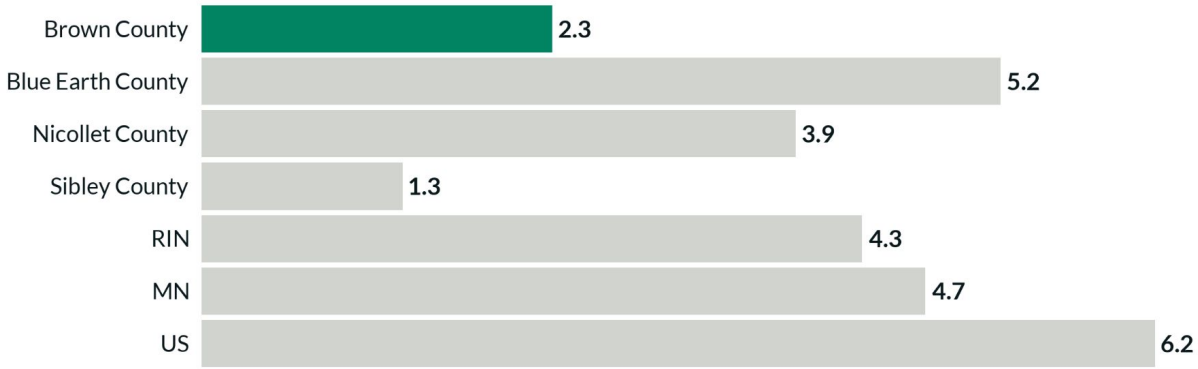
Implications

- However, not all devices may have the computing power necessary to engage in the digital economy. Additional resources may be needed for residents to engage in career fields like coding and data science.

Smaller number of business web domains

Digital technology utilization index

Business web domains per capita



Source: 2022 GoDaddy data

Takeaways

- Brown County trails most comparison geographies in the number of business web domains per capita

Implications

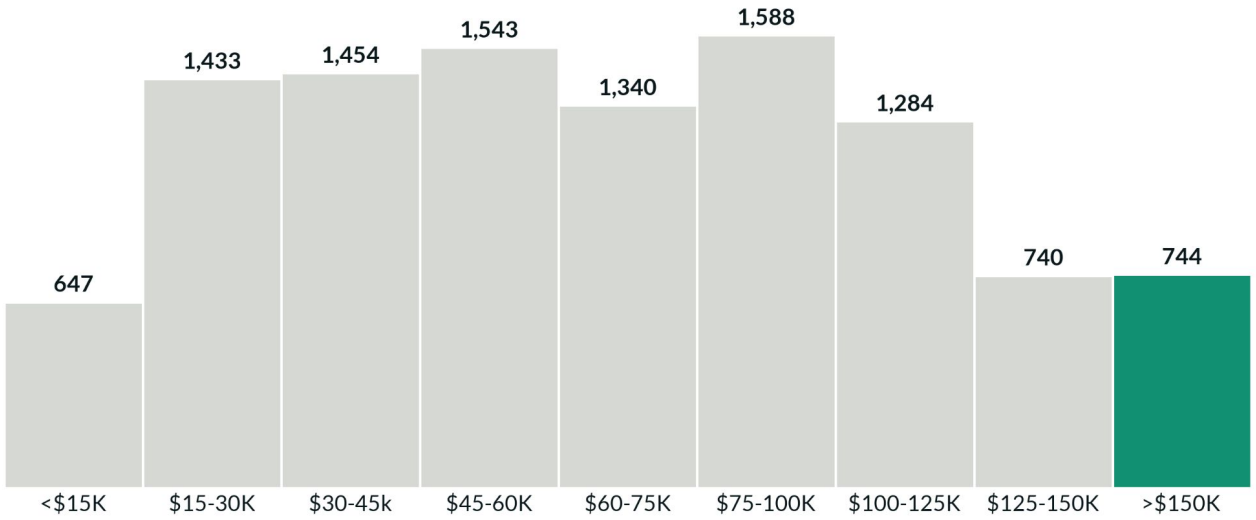
- Indicates an opportunity to grow a tech economy in the region
- It may be more difficult to find mentors or people who have "been there and done that" locally in the early days of building your tech economy ecosystem

Minnesota State University - Mankato Computer Science bachelor's degrees awarded 2021-2022

Limited pool of potential angel investors

Income distribution

Number of households in each income bracket



Source: 2021 ACS 5-year estimates

Takeaways

- 744 Brown County households may be eligible to become accredited angel investors

Implications

- These individuals could support startup growth and acceleration through equity-based lending

Thank you

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