



The Digital Divide and Access to Access to Technology

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Three Dimensions of the Digital Divide

Access-based

- Marginalized groups have less access to internet and technology at home
- Rural areas have limited connectivity
- People with disabilities face barriers with expensive assistive technologies

Treatment-based

- Online targeted harassment rooted in racism, sexism, and queerphobia, especially in gaming
- Misinformation used for defamation
- Lack of content regulation allows and exacerbates this

Algorithm-based

- Biases in algorithmic programming reflect implicit human biases
- Negative content bias enables polarization
- Algorithms reinforce existing preferences



Access Inequality by Income

48%

High Connectivity

Of all households have high connectivity with laptop/desktop, smartphone, tablet, and broadband.

80%

Wealthy Households

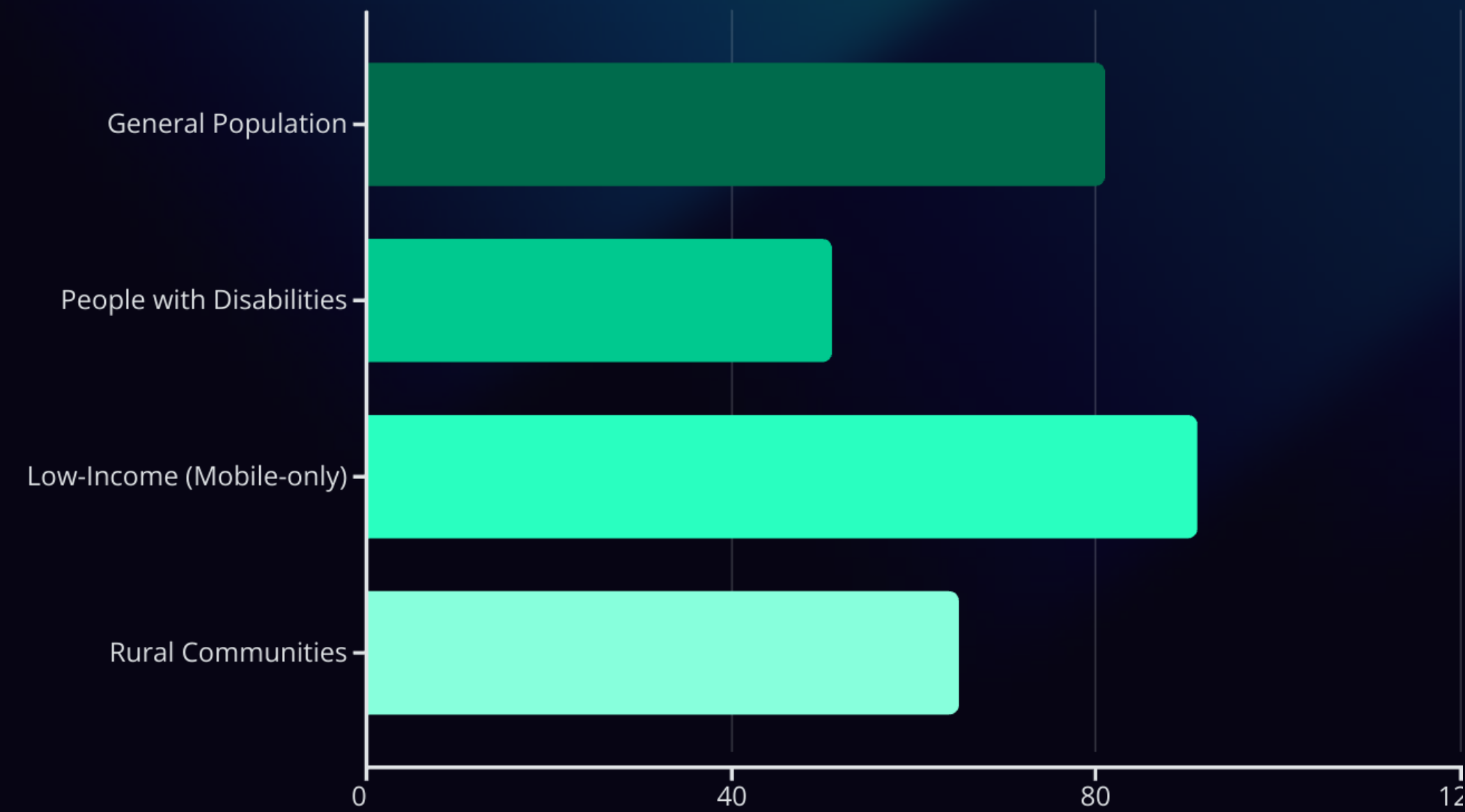
Of households with income over \$150,000 have high connectivity.

21%

Low-Income Households

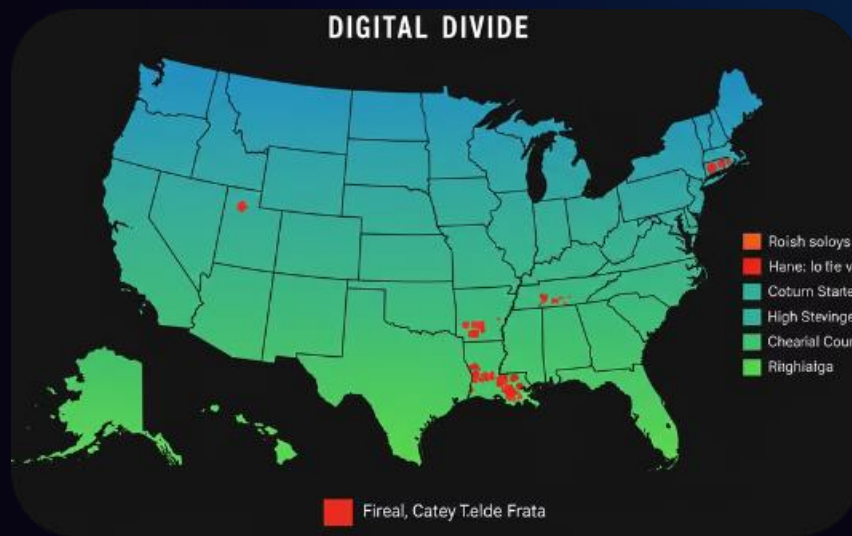
Of households with income under \$25,000 have high connectivity.

Digital Divide Impact



Access varies significantly across demographics. People with disabilities face the largest gap. Rural communities struggle with high-speed access. Low-income families rely more on mobile-only access, limiting their online activities.

Geographic Digital Divide



Urban vs. Rural

72% of counties with low digital divide are urban. Only 17.5% of counties with high digital divide are urban.



Infrastructure Gap

Rural communities have significantly less access to high-speed internet due to limited infrastructure investment.



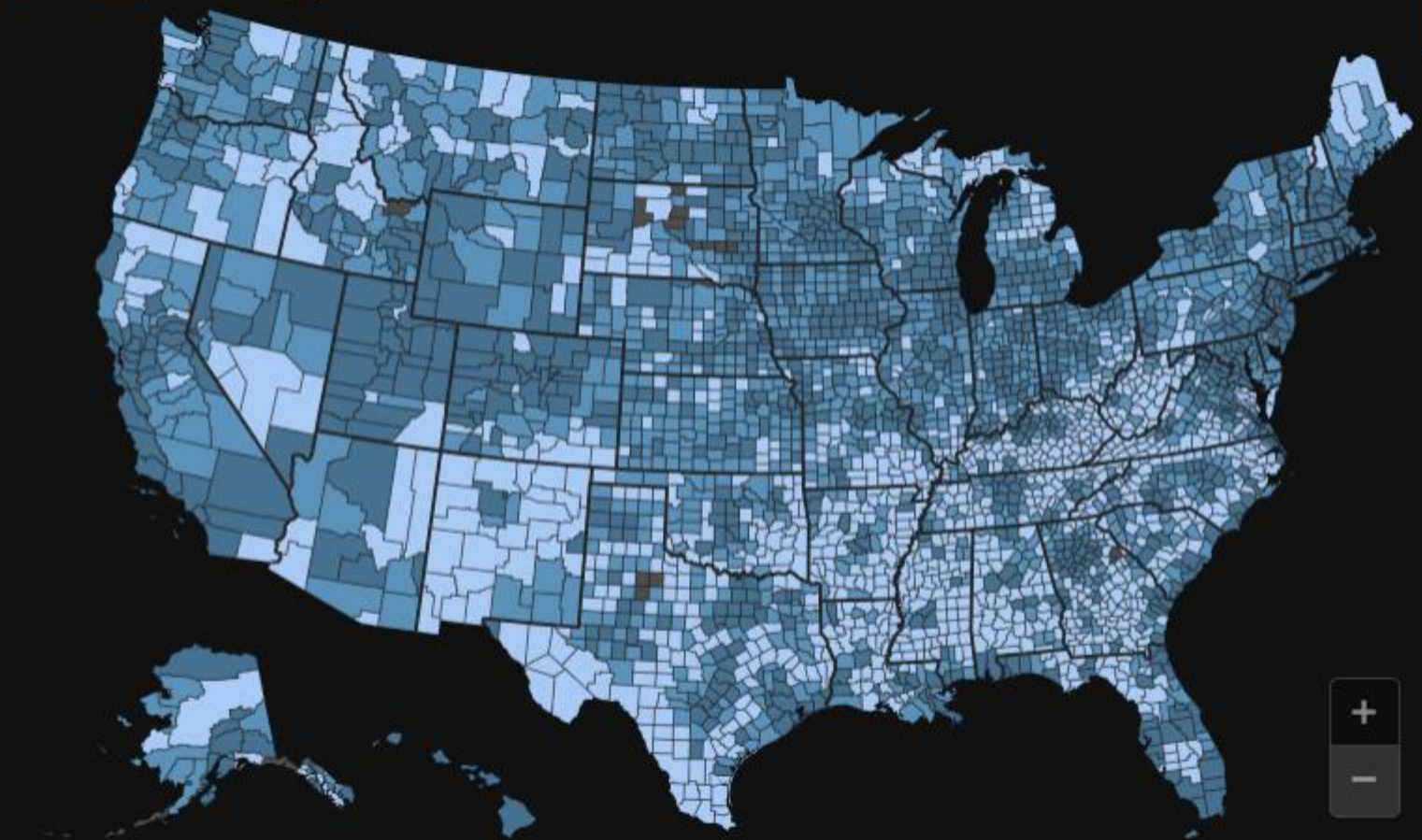
Educational Impact

One quarter of children in Pre-K through 4th grade in high digital divide counties lack computer or internet access.

2020 Digital Divide Index

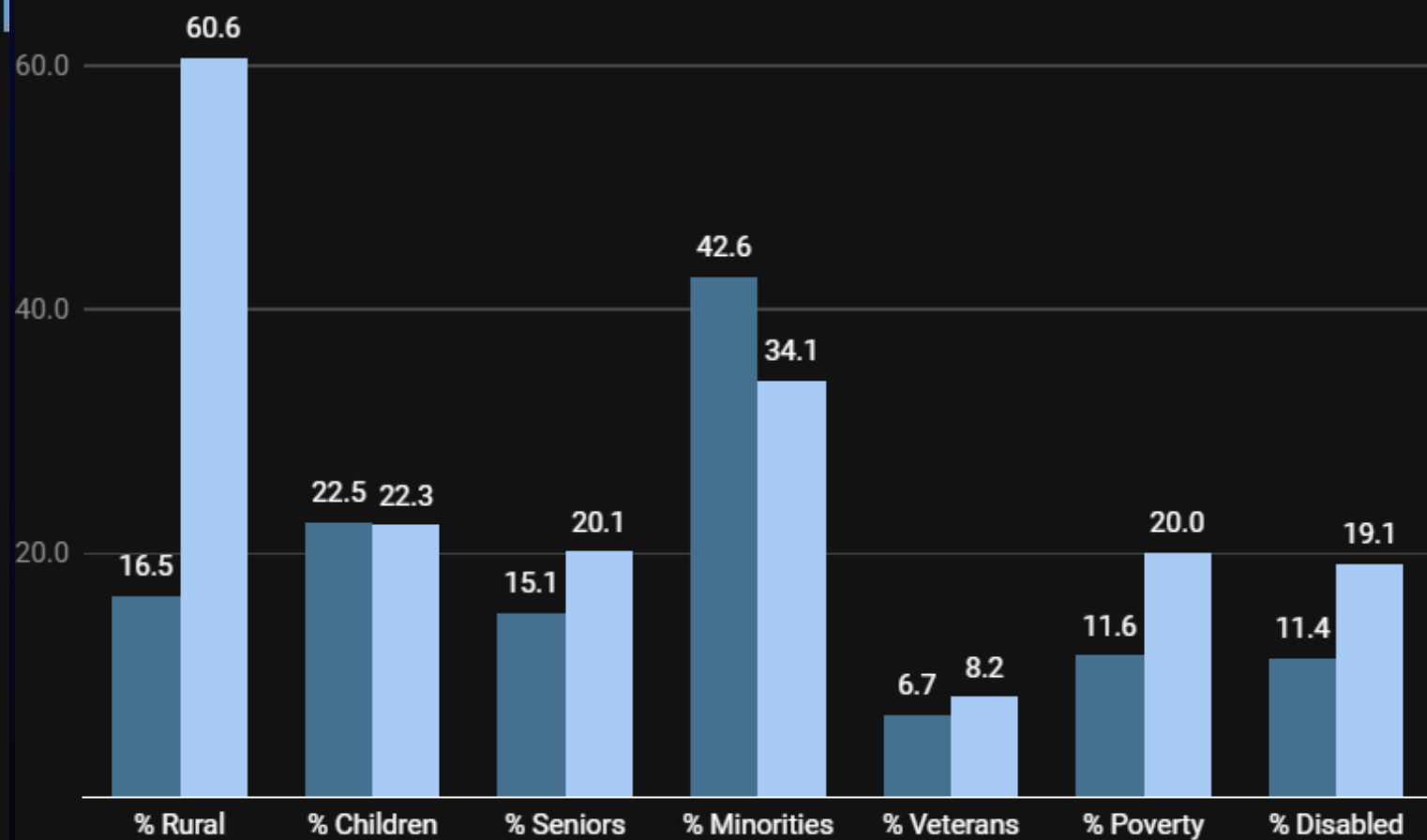
This map shows counties and their digital divide level: low, moderate, or high.

Low Moderate High



% Population by Selected Demographic Characteristics in Low & High Digital Divide Counties

Low High





Treatment-Based Digital Divide



Gaming Harassment

Women and marginalized genders face sexist harassment in gaming communities, including verbal abuse and threats.



Online Abuse

Marginalized groups experience disproportionate levels of harassment, abuse, hate speech, and exclusion online.



Policy Gaps

Lack of inclusive policies and regulations further entrench the digital divide.

Algorithm-Based Digital Divide

Medical AI Bias

AI systems show lower accuracy for African-American patients compared to white patients.

Hiring Discrimination

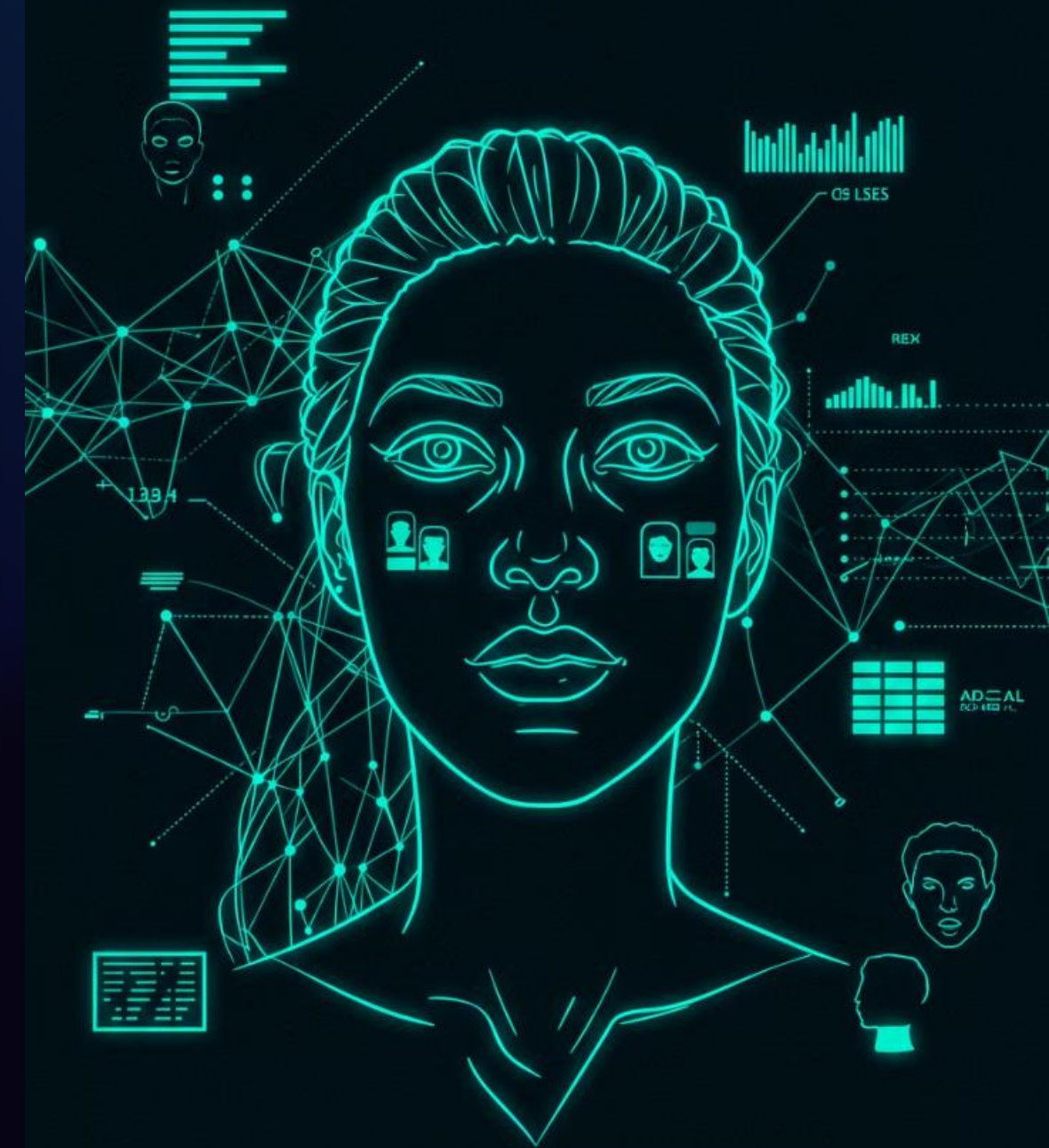
AI resume screening tools inadvertently favor certain groups.

Image Generation Stereotypes

AI image generators depict CEOs as white males and rarely represent women as doctors, lawyers, or judges.

Facial Recognition Errors

Facial recognition systems misidentify Black faces at higher rates than white faces.



Key Dilemmas

1

Access as a Right?

Should internet access be considered a human right? How do we ensure equal opportunities?

2

Privacy vs. Access

Does the digital divide increase risk of data exploitation for vulnerable populations?

3

Economic Inequality

How should governments and corporations ensure equal economic opportunities?

4

Health Disparities

How can we make digital healthcare equitable?



The Digital Equity Act of 2021

1

Funding

Allocates \$2.75 billion for digital equity and inclusion grants to states, territories, and tribal communities.

2

State Plans

Requires states to develop comprehensive Digital Equity Plans to identify barriers to internet access.

3

Prioritization

Focuses on low-income households, minorities, rural communities, aging populations, and people with disabilities.

4

Skills & Devices

Provides funding for digital literacy programs and affordable device distribution.



EU and Industry Initiatives

EU Digital Compass 2030

Aims for 100% broadband coverage and improved digital skills for all Europeans.

Telecom Programs

AT&T, Verizon, and T-Mobile offer low-cost internet plans for low-income families.



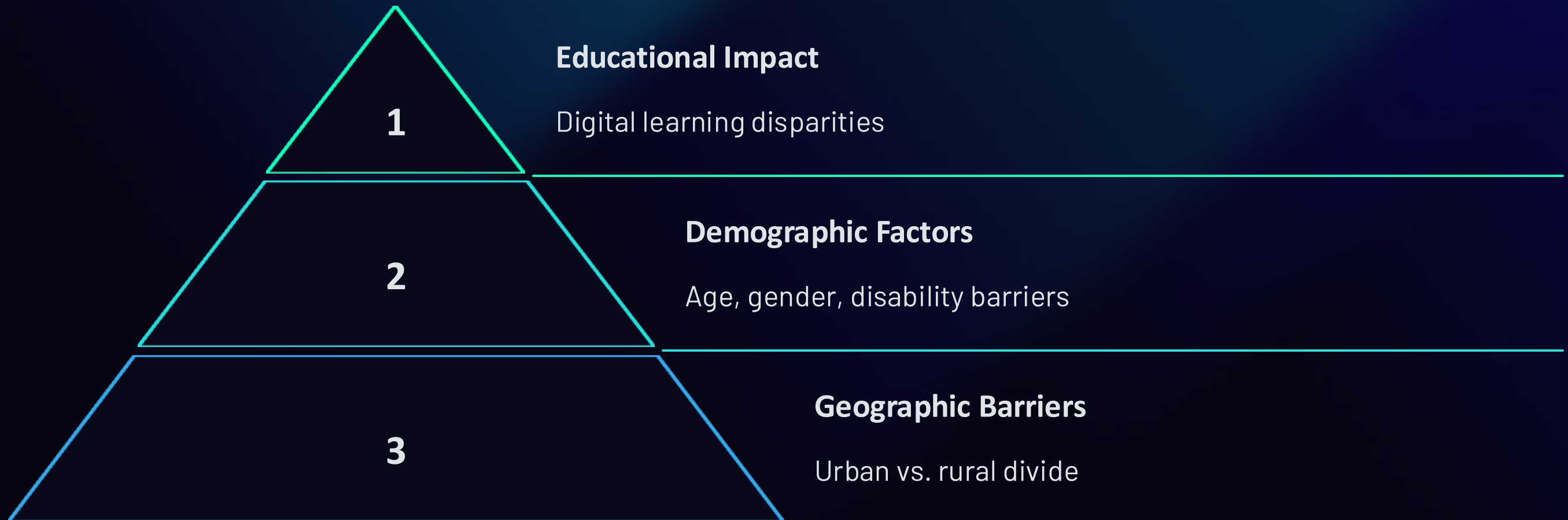
GDPR Protection

Ensures data privacy for all EU citizens, including marginalized communities.

Microsoft Airband

Expands rural broadband access using TV white spaces technology.

Social Context



Students without reliable internet fall behind in digital learning environments. Older adults often have less digital literacy and access. In some regions, cultural norms limit women's access to technology. People with disabilities face additional barriers due to lack of accessible technology.

Economic Context



Income Inequality

High costs exclude many

Employment Barriers

Digital skills required for jobs

Global Disparities

Developed vs. developing nations

High costs of devices, internet subscriptions, and maintenance exclude low-income individuals. Many job applications and remote work opportunities require internet access. Lack of digital skills limits job opportunities, contributing to long-term unemployment.

Technological Context



Urban areas often have advanced broadband and 5G networks, while rural regions lack basic connectivity. Affordable devices vary widely in availability. Technological obsolescence means older devices may not support current software. Access alone is insufficient; digital literacy is essential.

The Problem

1 Limited Access

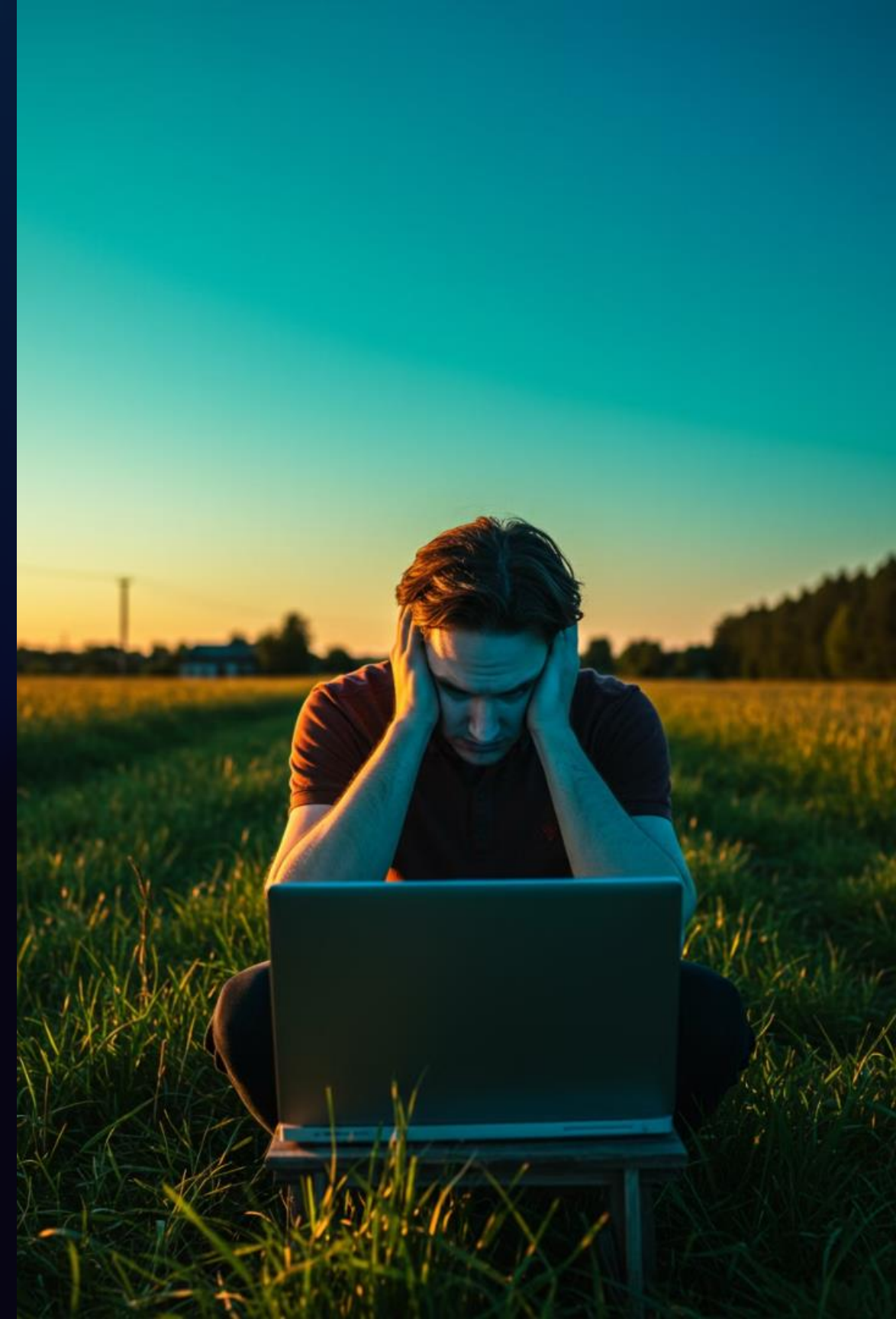
High-speed internet and digital technology access disproportionately affects rural, low-income, and marginalized communities.

2 Restricted Opportunities

This limits opportunities in education, employment, healthcare, and civic participation.

3 Deepening Inequalities

Poor infrastructure, high costs, and lack of public access points deepen existing social and economic inequalities.





Policy Proposals

Affordable Connectivity

Expand subsidy programs like ACP. Require low-cost internet plans with minimum speed standards. Encourage community broadband networks.

Device Accessibility

Provide low-income students with affordable devices. Promote electronic recycling programs. Partner with tech companies for low-cost device development.

Digital Literacy

Develop community-based literacy initiatives. Incorporate digital training in schools and workforce programs. Provide grants for non-profits offering digital skills training.