

How does internet access vary per zip code?

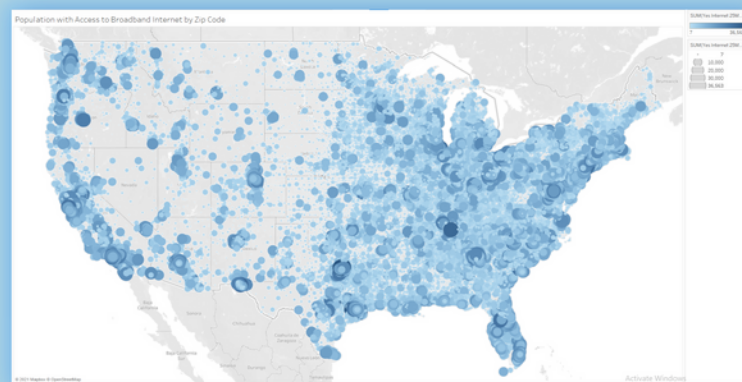
Highlights

- Internet access has different contributors outside of geographical location, including : race, education and poverty.
- Not all internet is created equal: broadband internet was our anchor variable used to measure internet access.
- Case studies: what is being done locally to make internet more accessible to their communities?

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Background

Over the past year, the pandemic has shown us how essential the internet is in our modern world. Without access to online tools and resources, **individuals are increasingly unable to fully participate in society.**



The digital divide is concerning because it further exacerbates issues arising from a number of factors. In order to work towards a more equitable world, we have to make sure **everyone has access to the tools of our digital world** and the resources to understand them.

Model

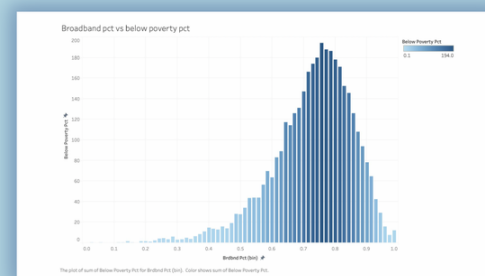
After prioritizing identifying a **variable of interest (Broadband Internet)** from our ACS datasets, **we sought data on internet access, race, income and poverty, employment, and education level.** Since ACS is itself a sample of the US population, there is a certain margin of error for each of the figures reported, especially low-population ZCTAs - these became the margins of error in our analysis. Finally, we ran some regression analysis to further explore the relationship between other variables of interest. Specifically, poverty levels and unemployment rates.

Data

-  ZCTA
-  U.S. Zip Code List
-  American Community Survey

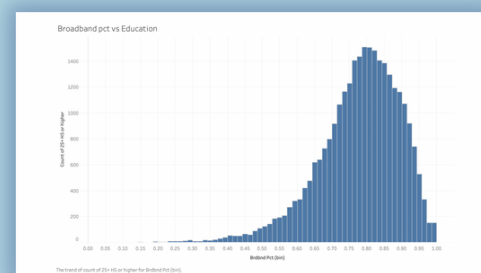
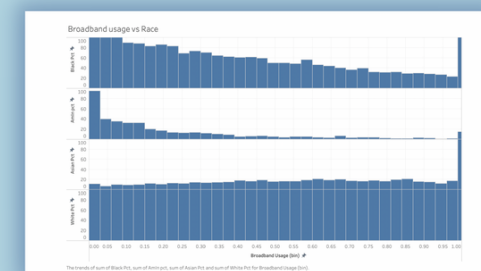
Broadband Internet Access Per Zip Code

(Alaska and Hawaii not included due to size limitations) We created a color-coded map displaying the percentage of broadband internet users in each zip code. Lighter shades of blue indicate a higher percentage, while darker shades indicate a lower percentage. A live version of this map would allow users to interact to browse the map, select specific zip codes, and drill into the data available. **This could help local government and internet service providers (ISPs) better pinpoint which areas to target for improvements in broadband internet access.**

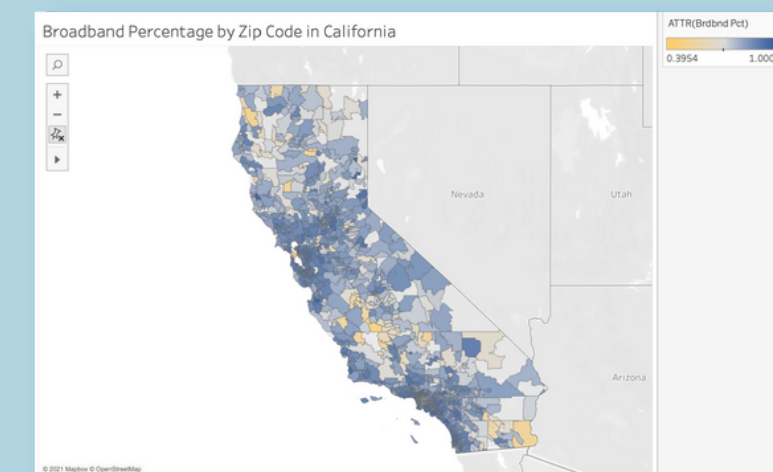
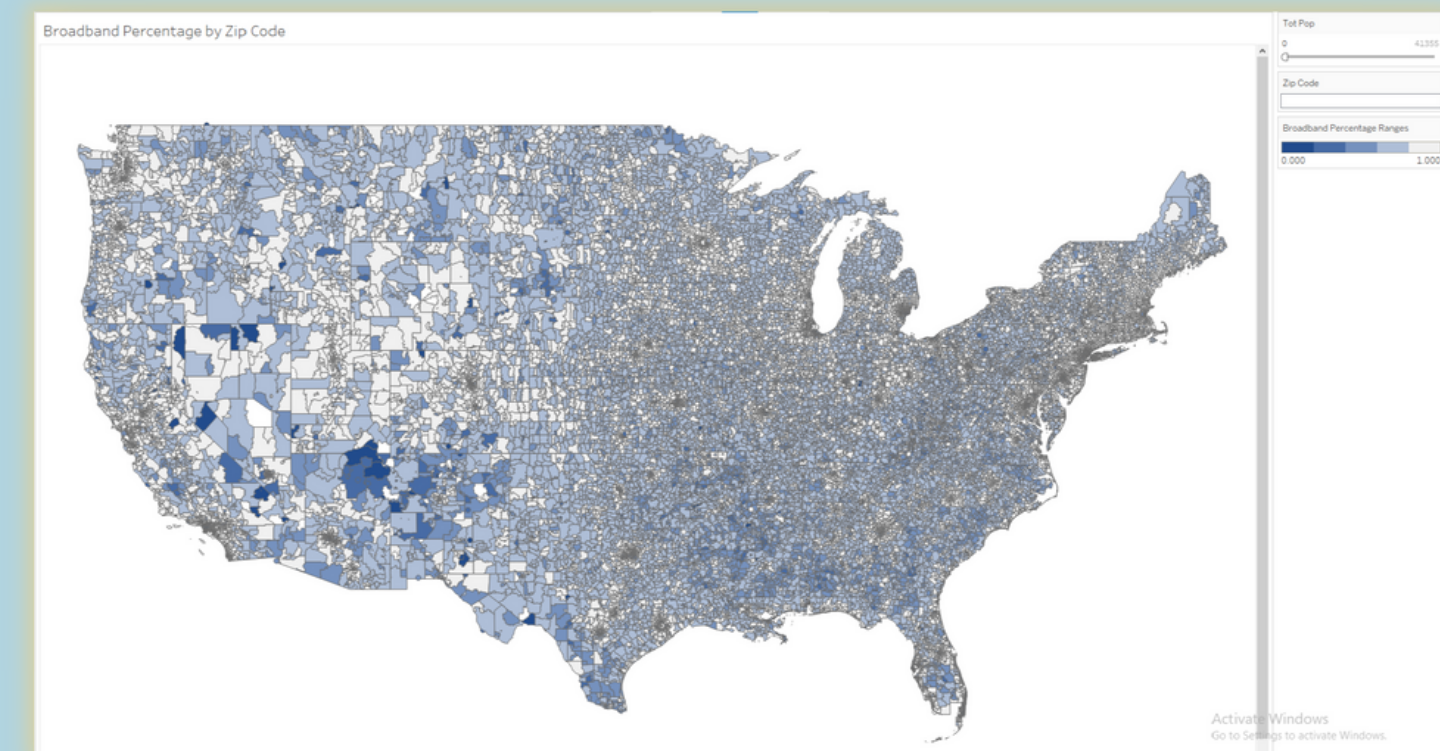


Contrary to our initial EDA projections, this graph shows that the **greater the proportion of residents below the poverty line, the higher the percentage that report broadband access.**

In this graph, we see that broadband usage and race are dependent on each other. For example, **predominantly white households have the highest broadband usage compared to their American Indian counterparts who have the least broadband usage.**



This graph shows that **the greater the proportion of residents educated, the higher the percentage that report broadband usage;** hence we can conclude that education levels are dependent on broadband usage.



Case Studies: in addition to studying broadband use nationwide, this project is using the state of **California as a case study to identify whether national trends are reflected in smaller geographies.**