

An Examination of Broadband Internet Access in Tennessee

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INTRODUCTION

Geographically, Tennessee is an internet nightmare. The presence of mountains, hills, valleys, and trees impedes internet signal strength and makes installing and maintaining internet equipment costly.



The COVID-19 pandemic made it clear that internet access is vital when in-person communication or interaction is impossible. Those with access to the internet continued life with minimal interruption. The lack of internet access limited individuals' ability to receive social services, health information, and employment/educational opportunities. Law and policy are key in ensuring internet access is available in communities that lack such services. State law and policy can encourage or impede broadband internet expansion projects.

METHODS

Using census data, a Tennessee county-level database was compiled with the following information: Geographic Area classification, demographics (age, sex, race, income, and education levels), population counts, housing unit counts, and the level of households with/without broadband internet and with/without computer access.

Data from N = 95 counties was obtained. The database underwent a data-cleaning process and was transferred to SPSS. Source: <https://www.census.gov/quickfacts/table/TN/INC110221>

DESCRIPTIVE STATISTICS

Demographic	Overall (%)	Rural Counties	Urban Counties
Overall	95	81	14
Age			
Under 18	27.9%	26.1%	28.2%
19-64	55.1%	53.7%	55.6%
65+	17.0%	20.2%	16.2%
Sex			
Male	49.0%	50.2%	49.1%
Female	51.0%	49.8%	50.9%
Race			
White	78.2%	90.3%	80.6%
Non-White	21.8%	9.7%	19.4%
Access			
Households with internet	83.8%	76.8%	87.3%
Households without internet	16.2%	23.2%	12.7%
Households with computer	90.9%	85.7%	93.4%
Households without	9.1%	14.3%	6.6%
Education Level			
HS Diploma or GED	88.8%	84.2%	91.0%
Bachelor's degree (4-year) +	29.0%	18.3%	33.9%
Economic			
Median Household Income	\$58,516	\$49,039	\$67,325
Persons in Poverty	13.6%	16.2%	11.5%

CORRELATIONS

Item	Household w/ Internet	Location Area	Median Income	Bachelors Degree +
Household w/ Internet				
Pearson Correlation	1	-.60**	.72**	.37**
Location Area				
Pearson Correlation	-.60**	1	-.57**	-.43**
Median Household Income				
Pearson Correlation	.72**	-.57**	1	.48**
Bachelor's Degree +				
Pearson Correlation	.36**	-.43**	.48**	1
M	78.388	.85	51733.90	20.608
SD	6.2495	.356	11459.73	12.8195
Skewness	.95	.95	.95	.95

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

RESULTS

Tennessee has a significant digital divide, meaning there are gaps between demographics and regions with Internet and communications technology access. Previous studies have found that only 18 out of 95 Tennessee counties have no digital divide. These 18 counties were limited to metropolitan and surrounding areas. Researchers determined that many rural counties with high digital divide scores were associated with higher poverty levels, lower educational attainment, and higher proportions of senior citizens.

In this study, the data analysis of census-level data revealed significant correlations between geographic area (rural/urban), households with internet access, median household income, and education levels. Further analysis revealed that when controlling for the geographic area (rural/urban) and internet access, Tennessee counties with low-income levels and low education levels are more likely to have more significant digital divides than Tennessee counties with high-income levels and high education levels.

CONCLUSIONS

This study builds upon existing literature demonstrating that there is a digital divide in Tennessee and sheds light on the importance of the continued study of internet access.

Further research is needed to explore the association between disparities in internet access for low-income households, racial/ethnic minorities, and other social determinants.

REFERENCES

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