

Abstract

The incidence of in-home Internet subscriptions varies meaningfully across households, with poorer households less likely to purchase the Internet than rich households; rural households less likely than urban households; and Native American households less likely than other households. The lack of universality, given the value that may be accrued to households from online education, health, and work activities, has, potentially, enormous consequences for households not subscribing to the Internet. Using descriptive statistics and an Oaxaca-Blinder decomposition we find that while economic benefits exist, lack of interest and cost remain major inhibiting factors for Native American households purchasing the service. Rural tribal locations, on average, may also present a greater challenge vis-à-vis other rural locations.

Introduction

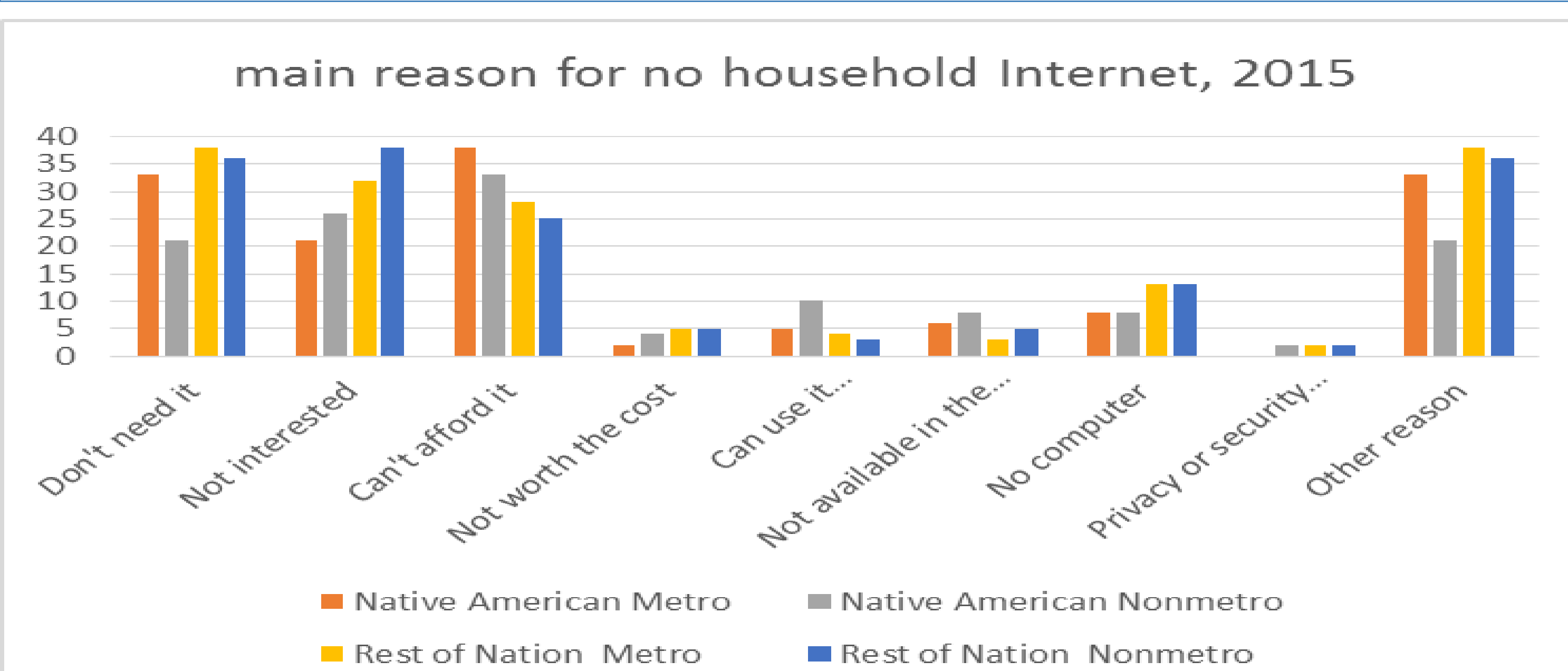
While household Internet use is widely known for its social media activities as well as gaming and movie download undertakings, households are also using it for more far-reaching pursuits that contribute to their socio-economic well-being. For example, households conduct research on medical issues, complete school homework assignments, participate in continuing education, apply for jobs, file taxes online, and deal with their government using online services. Given the Internet's increasing contribution to a household's socio-economic well-being, those households remaining offline may be put to an ever increasing disadvantage vis-à-vis online households, widening the economic gulf between households.

Although household broadband Internet subscriptions have increased markedly since early in the millennium, the rate of growth in new subscriptions has declined greatly over the last 10 years and actually was negative between 2012 and 2015. This has left approximately 25 percent of all U.S. households still without in-home service. Native American households in the U.S. are even more likely to remain without in-home access than the general population. The research here explores the relatively low rate of uptake in Native American households. The existence of differences offers one argument for taking nuanced policy approaches for Native American households.

Methods and Data

The data here comes from the Bureau of the Census' Current Population Survey (CPS), a survey of roughly 54,000 households with over 500 Native American households. While the survey subjects are randomly drawn, the surveys are structured with over-sampling of some populations and under-sampling of others. Replicate weights are used to estimate the full population. The replicate weights used here were developed by the Economics Statistics Administration (ESA), U.S. Department of Commerce.

The model we employ to compare the two groups is called Oaxaca-Blinder decomposition model. The Oaxaca-Blinder decomposition is a statistical method that splits differences in mean outcomes across two groups into two parts. The model originated in separate labor market studies by Oaxaca (1973) and Blinder (1973). We use the Stata Blinder-Oaxaca decomposition adapted for logistic models by Jann (2008).



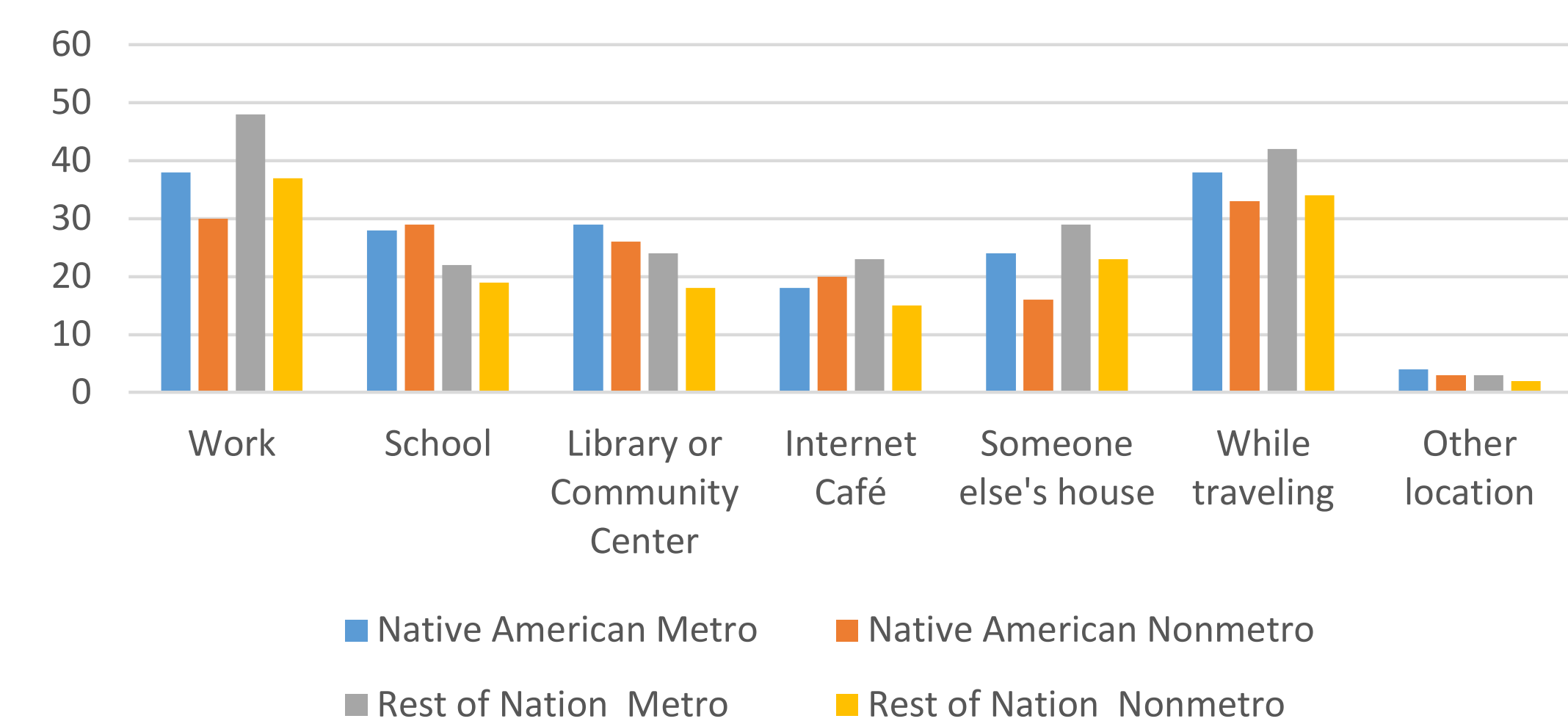
Contact

Peter L. Stenberg
Email: stenberg@ers.usda.gov
Phone: 1-202-694-5366

Descriptive Results

The results showed that rural residence was a much more challenging environment for Native Americans than for other rural households. The regional locations were nonfactors here as it seemed not to matter what part of the country the residence was in. The results suggest the need for further analysis, one where we can more directly compare the two sub-populations.

Households going online outside of the home, 2015



Results

The results from the Oaxaca-Blinder model indicate that endowments explain much of the differences in the uptake of Internet subscriptions. Differences in income, education, and age between Native American and other households were significant factors in the exhibiting less uptake. The overall difference in coefficients indicate disadvantages faced by Native American households are also a factor in their lower uptake. Two factors jump out in the results: education and tribal regions. The former is an argument for further assistance in the provision of various education programs. The latter reflects the challenges faced by the rural environment of tribal areas.

	Coef.	Std. Err.	z	P> z	95% Conf. Interval
Internet at home overall					
Native American	0.5943	0.0271	21.92	0.00	0.541 0.647
Rest of Nation	0.7491	0.0021	357.67	0.00	0.745 0.753
difference	-0.1549	0.0272	-5.70	0.00	-0.208 -0.102
endowments coefficients	-0.0598	0.0124	-4.83	0.00	-0.084 -0.036
interaction	-0.0878	0.0267	-3.29	0.00	-0.140 -0.035
	-0.0072	0.0190	-0.38	0.70	-0.044 0.030
endowments					
household income	-0.0450	0.0075	-6.00	0.00	-0.060 -0.030
education attainment	-0.0332	0.0062	-5.34	0.00	-0.045 -0.021
age of household head	-0.0243	0.0045	-5.35	0.00	-0.033 -0.015
age-squared	0.0365	0.0054	6.69	0.00	0.026 0.047
school children at home	0.0116	0.0028	4.20	0.00	0.006 0.017
household size	0.0149	0.0033	4.55	0.00	0.008 0.021
school children times size	-0.0180	0.0043	-4.18	0.00	-0.026 -0.010
metro	-0.0022	0.0008	-2.77	0.01	-0.004 -0.001
coefficients					
household income	0.0094	0.0360	0.26	0.79	-0.061 0.080
education attainment	-0.0892	0.0367	-2.43	0.02	-0.161 -0.017
age of household head	-0.3007	0.3405	-0.88	0.38	-0.968 0.367
age-squared	0.1959	0.1971	0.99	0.32	-0.190 0.582
school children at home	0.0179	0.0229	0.78	0.44	-0.027 0.063
household size	0.0017	0.0449	0.04	0.97	-0.086 0.090
school children times size	0.0009	0.0253	0.04	0.97	-0.049 0.051
metro	0.0503	0.0292	1.72	0.09	-0.007 0.108
constant	0.0260	0.1633	0.16	0.87	-0.294 0.346
interaction					
household income	0.0020	0.0135	0.15	0.88	-0.024 0.028
education attainment	-0.0115	0.0430	-0.27	0.79	-0.096 0.073
age of household head	-0.0137	0.0611	-0.22	0.82	-0.134 0.106
age-squared	0.0177	0.0783	0.23	0.82	-0.136 0.171
school children at home	-0.0051	0.0198	-0.26	0.80	-0.044 0.034
household size	-0.0001	0.0035	-0.04	0.97	-0.007 0.007
school children times size	-0.0003	0.0071	-0.04	0.97	-0.014 0.014
metro	0.0038	0.0152	0.25	0.80	-0.026 0.033

Total number of observations = 53,647
Population size = 122,048,029
N of observations - Native American households = 546
N of observations - Rest of Nation households = 53101

Conclusions

Native American households are more likely not to have in-home access than the general population. Our research showed that there are distinct differences between Native American households and the rest of the population. Households in tribal areas do have a disadvantage compared to other rural areas. The results lend support to ongoing effort of public policy on tribal regions. Education also stood out and suggests an even stronger role that the primary, secondary, and postsecondary education systems may have on tribal lands than in the rest of the country.

References

- Greenstein, Shane, and Jeff Prince (2006). The Diffusion of the Internet and the Geography of the Digital Divide in the United States, National Bureau of Economic Research, NBER Working Paper Series, Working Paper 123182.
- Jann, Ben (2008). The Blinder-Oaxaca Decomposition for Linear Regression Models, The Stata Journal 8(4): 453-479.
- Oaxaca, Ronald (1973). Male-Female Wage Differentials in Urban Labor Markets, International Economic Review, 14:693-709.
- Prieger, James, Hu, W., 2008. The broadband digital divide and the nexus of race, competition, and quality. Information Economics and Policy 20(2): 150-167.
- Rosston, G. L., Savage, S. J., and Waldman, D. M. (2010). Household demand for broadband Internet in 2010. The B.E. Journal of Economic Analysis & Policy (Advances), 10(1), Article 79.
- Stenberg, P., and Morehart, M.(2011) "Toward Understanding U.S. Rural-Urban Differences in Broadband Internet Adoption and Use", Adoption, Usage, and Global Impact of Broadband Technologies: Diffusion, Practice and Policy, Yogesh K. Dwivedi (Eds.), IGI Global.
- Stenberg, Peter L. (2006). "Investment and Household Adoption of Communication and Information Services Across the United States" in The Emerging Digital Economy: Entrepreneurship, Clusters and Policy, Johansson, Borge, Charlie Karlsson, and Roger Stough (eds.), Springer, Berlin, Heidelberg, New York, pp. 263-76.