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Working with the American Community Survey in R

A Guide to Using the acs Package

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Preface

The purpose of this monograph is twofold: first, to familiarize readers with the US Census American Community Survey, including both the potential strengths and the particular challenges of working with this dataset; and second, to introduce them to the `acs` package in the R statistical language, which provides a range of tools for demographic analysis with special attention to addressing these issues.

In particular, the `acs` package includes functions to allow users (a) to create custom geographies by combining existing ones provided by the Census, (b) to download and import demographic data from the American Community Survey (ACS) and Decennial Census (SF1/SF3), and (c) to manage, manipulate, analyze, plot, and present this data (including proper statistical techniques for dealing with estimates and standard errors). In addition, the package includes a pair of helpful "lookup" tools, one to help users identify the geographic units they want and the other to identify tables and variables from the ACS for the data they are looking for, and some additional convenience functions for working with Census data.

Acknowledgments

grateful for the graduate students in my "Quantitative Reasoning and Statistical Methods" classes over the years, who have been willing to experiment with R and have provided excellent feedback on the challenges of working with ACS at the local level.

The original coding for the `acs` package was completed with funding from the Puget Sound Regional Council, working with Public Planning, Research, & Implementation. Portions of this work have been previously presented at the Conference for Computers in Urban Planning and Urban Management (Banff, Alberta, 2011) and the ACS Data Users Conference (Hyattsville, MD, 2015), as well as at workshops and webinars of the Puget Sound Regional Council, the Mel King Institute for Community Building, the Central Massachusetts Regional Planning Agency, and the Orange County R User Group. I am indebted to the organizers and attendees of these sessions for their early input as well as to the excellent R user community and subscribers to the `acs` users listserv for their ongoing feedback.

Finally, a big thank you to my wife Melissa (for lending me her degree in statistics and public policy) and my children Linus, Tobit, and Mehitabel (for being such strong advocates of open-source software); all four have been patient while I tracked down bugs in the code and helpful as I worked through examples of how we make sense of data.

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