Doing Democratic Data Analysis

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Preface

I believe that data, *in the hands of public administrators and policy analysts*[1], has the power to transform the way government works.

Big questions will, and should, be asked of big data— the role of government in regulating algorithmic bias, facial recognition, and consumer data privacy is a vital conversation. However, these topics should not detract or deter public administrators and policy analysts from leaning into **small data** for decision-making purposes.

Public administrators and analysts who are data literate will be able to make and inform better decisions while avoiding the pitfalls posed by the latest technological trends. This book represents an opportunity for public administrators and policy analysts to join their subject matter expertise with foundation principles and practices of democratic data analysis— data analysis that is **transparent, relevant, and grounded in the context of ethical and effective governance**.

Who is this guide for?

This guide is for:

- the budget analyst at the Department of Fish and Wildlife who has to compile a monthly report analyzing revenues,
- the manager at the Department of Social and Health Services who is tracking inventory, and
- the research analyst working for the state Legislature who wants to incorporate data into her work session on the latest policy debate.

[1] *Not IT departments*

What will I learn?

You will learn an opinionated framework for data analysis in public sector organizations. By opinionated, I mean that I will teach you what I think is the right way to do things given my own experience as a public sector policy and data analyst. Your experience might differ– and that's great. I hope that where you can use your experience in place of mine, you do to the fullest extent. With that in mind, it is often said that you have to know the rules to break them, so I will teach you the "rules" as I understand them.

Chapter 1

Introduction

1.1 What is democratic data analysis?

This is little-d democracy here, people. Not a guide to data analysis for Democrats[1], but an approach to data that empowers the subject matter experts within public organizations to do their best work.

1.2 Do I need to be an Excel god before I begin?

No.

1.3 What tools should I use?

This guide is written to be technology-agnostic. The changing nature of technology and the *ahem* lag of state agencies to pick up tools means that the principles outlined in this book supersede specific technologies.

However, you should start somewhere. This guide will include examples for both Excel and `R`. Government runs on Excel, so all of the examples and exercises will be Excel compatible. If you are comfortable with Excel[2] and want to challenge yourself, boost your resume, and become a data wizard[3], I would highly recommend learning `R`. This guide will walk you through all the steps

[1] *but if campaign folks are listening, don't forget about Wisconson*

[2] aka you use `vlookup`, `index(match)`, pivot tables, or *Get & Transform* on a somewhat regular basis

[3] For example, I used R to create this entire website

necessary to learn how to analyze data democratically using both tools, but focusing on the principles and practices that are vital regardless of technology.

1.4 Getting Started with Excel

All examples

1.5 Getting Started with R

I would **HIGHLY** recommend you take an afternoon to work through Chapters 1, 2, and 3 of "*R for Excel Users*". You will thank me later.

Chapter 2

Tidy Data

Here is a review of existing methods.

Chapter 3

Reproducible Analysis

We describe our methods in this chapter.

Chapter 4

Data Modeling

Some *significant* applications are demonstrated in this chapter.

4.1 Example one

4.2 Example two

Chapter 5

Visualization

We have finished a nice book.

Chapter 6

Applications