Single-Source Capture-Recapture Models With singleRcapture and singleRcaptureExtra

Piotr Chlebicki
Adam Mickiewicz University

Maciej Beręsewicz ⓘD
Poznań University of Economics
and Bisiness

Abstract

Estimating population size is an important issue in official statistics, social sciences and natural sciences. One way to approach this problem is to use capture-recapture methods, which can be classified according to the number of sources used, the main distinction being between methods based on one source and those based on two or more sources. In this presentation we will introduce the **singleRcapture** R package for fitting SSCR models. The package implements state-of-the-art models as well as some new models proposed by the authors (e.g. extensions of zero-truncated one-inflated and one-inflated zero-truncated models). The software is intended for users interested in estimating the size of populations, particularly those that are difficult to reach or for which information is available from only one source and dual/multiple system estimation cannot be used.

Keywords: population size estimation, truncated distributuons, count regression models, R.

1. Introduction

This template demonstrates some of the basic LaTeX that you need to know to create a JSS article.

1.1. Code formatting

In general, don't use Markdown, but use the more precise LaTeX commands instead:

- Java

- **plyr**

One exception is inline code, which can be written inside a pair of backticks (i.e., using the Markdown syntax).

If you want to use LaTeX commands in headers, you need to provide a `short-title` attribute. You can also provide a custom identifier if necessary. See the header of Section 2 for example.

2. R code

Can be inserted in regular R markdown blocks.

```
R> x <- 1:10
R> x
```

```
[1]  1  2  3  4  5  6  7  8  9 10
```

2.1. Features specific to rticles

- Adding short titles to section headers is a feature specific to **rticles** (implemented via a Pandoc Lua filter). This feature is currently not supported by Pandoc and we will update this template if it is officially supported in the future.
- Using the `\AND` syntax in the `author` field to add authors on a new line. This is a specific to the `rticles::jss_article` format.

Affiliation:

Piotr Chlebicki
Adam Mickiewicz University
Faculty of Mathetmatics and Informatics
Wieniawskiego 1
61-712 Poznań, Poland
E-mail: piochl@st.amu.edu.pl
URL: https://github.com/Kertoo

Maciej Beręsewicz
Statistical Office in Poznań
Poznań University of Economics and Business
Department of Statistics
Institute of Informatics and Quantitative Economics
Al. Niepodległosci 10
61-875 Poznań, Poland
E-mail: maciej.beresewicz@ue.poznan.pl