Propensity Score Weighting using Machine Learning

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Abstract

Generally, we estimate propensity score using logistic regression model. In this report, we try to implement machine learning methods - random forests and SVM. In some simulation scheme, we evaluate the result with averate standardized absolute mean distance and empirical distribution of average treatment effect. Additionally, we compare inverse probability weighting (IPW) with stabilized IPW. We provide an R package for this experiment in this link.[1]

Contents

[1] https://github.com/ygeunkim/propensityml

1 Introduction

```
library(propensityml)
```

2 Monte Carlo Simulation

2.1 Setting

2.2 Evaluation

3 Conclusion

References

A Appendix: Codes

A.1 Loading Packages

```
# tidyverse family----------------------
library(tidyverse)
# large data frame----------------------
library(data.table)
# parallel-----------------------------
library(foreach)
library(parallel)
# custom packages----------------------
library(rmdtool) # install_github("ygeunkim/rmdtool")
# kable--------------------------------
library(knitr)
library(kableExtra)
# set seed for report -----------------
set.seed(1)
```