

Newspapers in Times of Low Advertising Revenues^{*}

Reproduce the Paper: A Difference-in-Differences Analysis

Xi Cheng

December 9th, 2020

Abstract

In 2019, researchers Charles Angelucci and Julia Cagé have done the analysis of the relationship between the newspapers' content and the reduction in advertising revenues. They found robust evidence which demonstrated that a reduction in advertising revenues lowers newspapers' incentives to produce journalistic-intensive content through difference-in-differences analysis. In this work, the same dataset and the difference-in-differences analysis was applied as well. As a result, similar results were obtained as the published paper.

Keywords: Newspapers; Difference-in-Differences Analysis; Causal-Inference; Newspapers' Content; Advertising Revenues;

Introduction

broader context more detail about what you're interested in, what you did, what you found, why it's important

the research

the outline and summary results

Methods

Data

The characteristics of data through tables (Table 1. and Table 2.).

Table. 1: Characteristics Summary of

Table. 2: Characteristics Summary of

Model

Model Details

The complete model was shown here:

^{*}Code are available at: <https://github.com/>

$$Revenue \sim Normal(\frac{1}{1 + \exp(-(a + b_i x_i))}) \quad (1)$$

where the a is the intercept, b representing coefficients of different variables. Particularly, b_i and x_i

Equation (1) represents the complete model, and Equation (2) represents our final model, which did not include employment status.

Model is appropriate

Discussion on features selection.

All work were done in **R** (version 4.0.2) (R Core Team 2020) and **Rstudio** (version 1.3.1093). **Tidyverse** (version 1.3.0) was used for data wrangling and visualization (Wickham et al. 2019). R package **forcats** (version 0.5.0) was also used for data pre-processing (Wickham 2020). There are other packages used such as **captioner**, **gridExtra**, **broom**, **Haven**, **magrittr**, **knitr**, **labelled** and **arsenal** (Alathea 2015; Hlavac 2018; Heinzen et al. 2020; Xie 2020; Wickham and Miller 2020; Auguie 2017; Robinson, Hayes, and Couch 2020; Bache and Wickham 2014; Larmarange 2020). Code are available at: <https://github.com/>.

Results

Discussion

Interpretation of results

What have we learnt from the model

Detailed information of the final model fitting can be found in the **Appendix**.

All statistical modeling has two frames: the small world of the model itself and the large world we hope to deploy the model in.

The sex and gender problem in modern survey

It is worthwhile mentioning that

Weaknesses and next steps

As we mentioned above,

Appendix

```
# the model broom::tidy(lg_employment) # there are 50 states  
# plus 1 distric survey_data$state %>% levels() # barplots  
# barplot(table(survey_data$gender ) )  
# barplot(table(survey_data$education ) )  
# barplot(table(survey_data$employment ) )  
# barplot(table(survey_data$race ) )  
# barplot(table(survey_data$household_income ) )  
# barplot(table(survey_data$age ) ) # doule check the  
# distribution of data, categorical  
# barplot(table(census_data$gender ) )  
# barplot(table(census_data$race ) )  
# barplot(table(census_data$household_income ) )  
# barplot(table(census_data$employment ) )  
# barplot(table(census_data$age ) )  
# barplot(table(census_data$education ) )
```

References

- Alathea, Letaw. 2015. *Captioner: Numbers Figures and Creates Simple Captions*. <https://CRAN.R-project.org/package=captioner>.
- Auguie, Baptiste. 2017. *GridExtra: Miscellaneous Functions for "Grid" Graphics*. <https://CRAN.R-project.org/package=gridExtra>.
- Bache, Stefan Milton, and Hadley Wickham. 2014. *Magrittr: A Forward-Pipe Operator for R*. <https://CRAN.R-project.org/package=magrittr>.
- Heinzen, Ethan, Jason Sinnwell, Elizabeth Atkinson, Tina Gunderson, and Gregory Dougherty. 2020. *Arsenal: An Arsenal of 'R' Functions for Large-Scale Statisticalsummaries*. <https://CRAN.R-project.org/package=arsenal>.
- Hlavac, Marek. 2018. *Stargazer: Well-Formatted Regression and Summary Statistics Tables*. Bratislava, Slovakia: Central European Labour Studies Institute (CELSI). <https://CRAN.R-project.org/package=stargazer>.
- Larmarange, Joseph. 2020. *Labelled: Manipulating Labelled Data*. <https://CRAN.R-project.org/package=labelled>.
- R Core Team. 2020. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Robinson, David, Alex Hayes, and Simon Couch. 2020. *Broom: Convert Statistical Objects into Tidy Tibbles*. <https://CRAN.R-project.org/package=broom>.
- Wickham, Hadley. 2020. *Forcats: Tools for Working with Categorical Variables (Factors)*. <https://CRAN.R-project.org/package=forcats>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Wickham, Hadley, and Evan Miller. 2020. *Haven: Import and Export 'Spss', 'Stata' and 'Sas' Files*. <https://CRAN.R-project.org/package=haven>.
- Xie, Yihui. 2020. *Knitr: A General-Purpose Package for Dynamic Report Generation in R*.