**BRM Homework - Solution Guide**

# Introduction

Previous research indicates a relationship between early childhood health conditions and outcomes throughout life (health, education, labor market, and socioeconomic indicators). Such outcomes are costly for governments and could end impacting long-term development.

One of the proxies to assess infant health is birthweight. In this exercise, we will investigate the following question: **How does maternal smoking affect birthweight ?**.

In order to provide an answer to this question each group will use the **2016 wave** of the [**Vital Statistics Natality Birth Data**.](https://www.nber.org/research/data/vital-statistics-natality-birth-data) We will use only the information for **June**. You can find in the web page the raw data in different formats, and the associated codebook. In this exercise you will download, clean and analyze the data, providing statistical evidence that support your analysis.

To answer to the research question you are going to investigate the relationship between the birthweight (variable dbwt) and several variables related to smoking available in the data (i.e. cig\_0, cig\_1, cig\_2, cig\_3).

Please feel free to use other relevant variables in your data set that can be important to explain the research question. For example, you can use the demographic variables, pre-natal care variables, or other variables that you consider could enrich the analysis.

You can structure the assignment as you wish. Take into consideration the exercise guide below. We expect to see a proper and complete analysis that sheds light on the research question.

# Bibliography

* Abrevaya, J. (2001). The effects of demographics and maternal behavior on the distribution of birth outcomes. Empirical Economics, 26(1), 247–257. <https://doi.org/10.1007/s001810000052>
* Abrevaya, J., & Dahl, C. M. (2008). The Effects of Birth Inputs on Birthweight. Journal of Business & Economic Statistics, 26(4), 379–397. doi:10.1198/073500107000000269 [(https://doi.org/10.1198/ 073500107000000269)](https://doi.org/10.1198/073500107000000269)
* Lhila, A., & Long, S. (2012). What is driving the black–white difference in low birthweight in the US? Health Economics, 21(3), 301–315. <https://doi.org/10.1002/hec.1715>
* Bache, S. H. M., Dahl, C. M., & Kristensen, J. T. (2013). Headlights on tobacco road to low birthweight outcomes. Empirical Economics, 44(3), 1593–1633. <https://doi.org/10.1007/s00181-012-0570-8>