Isaac Baca

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Github: https://github.com/Isaac110820

Linkedin: www.linkedin.com/in/IsaacBaca123

Portfolio: https://isaac110820.github.io/IsaacBaca/PortWebsite

Digital Resume: https://isaac110820.github.io/IsaacBaca/Resume_website

Relevant Skills and Experience

-Statistics: Statistical Inference, Regression, Multilevel Modeling, ANOVA, Multivariate Statistics
-Psychological Measurement: Psychometrics, Item Response Theory, Factor Analysis, Structural Equation Modeling
-Software: Python, R, SAS, SPSS, LISREL, Excel, SQL, Tableau

Education

Bachelor of Science, Dual Degree in Psychology and Sociology   May, 2020
Middle Tennessee State University   Murfreesboro, Tennessee
                                                                              3.81 GPA

M.Ed., Quantitative Methods   May, 2023
Vanderbilt University – Peabody college   Nashville, Tennessee
                                                                              3.93 GPA

Work History

Graduate Statistical Consultant for Peabody College   January 2023 – May, 2023
Vanderbilt University Medical Center   Nashville, Tennessee

As healthcare policy analyst my job was to analyze opioid cap laws and determine whether these laws had a causal effect on the quantity of opioid prescriptions during the postpartum period.

- Software used in this role included SAS and R.
- We followed a rigorous six-step process to create a pregnancy cohort from a large healthcare claims data base. SAS was used to create the pregnancy cohort, and subsequently, to aggregate opioid prescribing data by year.
- We used R to perform a Difference-in-Difference analysis with multiple time periods (years), and multiple groups (states), to determine if opioid cap laws passed between 2017 and 2019 in various states caused a change in the quantity of opioid prescriptions written for women during an eight week period after giving birth.

Graduate Statistical Consultant for Peabody College   January, 2022 – December, 2022
Vanderbilt University   Nashville, Tennessee

As a graduate statistical consultant for Peabody College, I utilized my knowledge of statistical modeling and scientific research design to support the research efforts of faculty members in the Peabody College at Vanderbilt. This work involved providing advice on statistics/methodology related questions on a range of projects including:

I. *Modeling the episodic and longitudinal growth of depression over time.*

The goal of the proposed project was to reconcile epidemiological (between-person) and episodic (within-person) approaches to modeling depression. The suggested modeling approach included using Hidden Markov Modeling to model the within-person episodicity of depressive episodes, and a growth curve model, fit within a Bayesian framework

to model the between-person longitudinal growth of depression over time. The intent was to use a Bayesian fit statistic to compare the two models and assess the relative model fit.

II. *Developing a data analysis plan for education policy research concerning students who are at high risk for emotional/behavioral disorders.*

The focus of this study was to determine if the *ratio* of relationship building to negative/restrictive practices in a classroom setting is predictive of relationship quality and engagement for students at high risk for emotional/behavioral disorders. The data analysis plan included advice on scientific methodology issues including: controlling for family-wise error rate/multiple regressions, handling nested data, and handling missing data.

Data Analysis Projects (see my digital resume for links to all projects)

A visualization of one users experience with dating apps in 2022:   **Project in R**
*   This is a data manipulation/data visualization project which utilizes the dplyr and ggplot2 packages in R to create a visualization of one users experience with three different dating apps in the year 2022.

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Correlation and Regression with movie data   **Project in Python**
*   This is a correlation and simple linear regression project in Python using movie data.

Nashville Housing Data   **Project in SQL**
*   This is a SQL data cleaning project using a data set containing information about the Nashville housing market.

Filtering, Summarizing, Sorting, and Grouping   **Project in SQL**
*   This project utilizes three data sets to demonstrate a series of basic SQL queries.

Covid-19 Global Infection and Death Rate   **Project in SQL**
*   This project utilizes various SQL queries to answer important questions concerning the infection and death rate in various countries around the world.

The impact of Covid-19 Around the World   **Project in Tableau**
*   This project contains a dashboard that demonstrates the impact of Covid-19 around the world.

Publications

Baca, I. (2021). Moral Reframing: A Perspective-Taking Approach to Political Arguments. Scientia et Humanitas, 11, 39-58