DC2021 Abstract:

Team number: **DC21006**

This analysis of the Behavioral Changes during COVID-19 dataset from the UMD National Center for Smart Growth (NCSG) seeks to explore how the lockdown measures between April and July 2020 affected changes in the daily routines of the general population. In order to give further recommendations to help NCSG make decisions on handling the current situation, we used R as our analytics software to build three logistic models, regressing variables such as sex, age, employment type, household size, household type, and marital status on whether respondents changed their commute status, method of transportation, or exercise levels as a result of COVID-19 lockdown measures. The analysis also incorporates location data from the Smart Location Database to add more context to behavioral changes during the pandemic. The results of the logistic regression model confirmed the existing understanding that employment status was one of the most influential features, but also indicated that household type and number of children were important factors influencing our target variables. This report also considers various possible issues with how the provided dataset survey was conducted and how those responses affected our methodology and results.

This report is a representation of initial findings intended to set the stage for further study, so readers and reviewers should consider the potential of this analysis rather than view it as conclusive. Future work including a more expansive dataset that covers additional demographic factors like income level, behavioral changes after the lockdown ends, whether or not the respondent is employed in an essential field, and more detailed road network and transportation information would allow for greater insights.

Keywords: behavioral changes, logistic regression, correlations, COVID-19, survey data, precautionary behavior