Mini Project #1 - Data Trends and Visualizations
Business Analytics
EN.661.380 (03)

Due: Friday, February 14, 2020 in class

Project Outline
In any analytical problem, it's important to distill large amounts of data and their resulting metrics into concise and understandable solutions, guidelines, and visuals for audiences who aren't as familiar with the data so they can understand its importance and take some sort of action as a result of your work. Additionally, when we develop business solutions, we often use past experiences either from our personal lives or from noteable news or other reliable sources to build proof-of-concept or case reports that show how a given metric or program will work. However, how can we know that a new initiative or policy will translate to different specialties, demographics, or regions?

In this project, we'll work with open data from the Opportunity Insights team's Opportunity Atlas, which uses anonymous data following 20 million Americans from childhood to their mid-30s to show which areas in the United States provide the best and worst social mobility (e.g. providing opportunity for children to rise out of poverty and attain the "American Dream"). Explore the Opportunity Atlas data, and conduct two identical analyses for Baltimore City and for your hometown city comparing any set of metrics that you are interested in that are available on the Opportunity Atlas website. If you didn't grow up in the US, use the city where you've spent the most time, where you are familiar with, or would like to live in the future. You'll share the similarities and differences with your classmates and create a GitHub repository to house your Excel data analysis, findings summary, and any relevant website links or other information as part of your "data portfolio."

Project Objectives
1. Apply Excel or Google Sheets data analysis tools discussed in class (including, but not limited to Pivot Tables, VLOOKUP, chart generation, basic calculations, IF and other logic statements, and data reorganization) to data downloaded from the Opportunity Atlas.
2. Compare any outcome data results and/or visualizations at the census tract level from Baltimore City with your hometown (or city where you've spent or would like to spend time)
3. Evaluate and interpret what the differences and similarities in your data analysis show and how you might want to monitor your own biases if you were to develop some sort of solution for Baltimore City.

Project Deliverables
- **GitHub repository**: Create a public GitHub repository with a name that describes your data analysis (for example: *comparing-baltimore-orange-county-household-income*, NOT something like *mini-project-1*) and email a link to your repository to Melanie and Yixin before class on Friday, February 14, 2020. Your GitHub repository should contain:
    - Excel files of the original data used for your analysis
    - Excel files that contain your analysis. If this is too large, save this in a Google Drive and provide a link to the data in your README.
    - README.md file that provides:
        - A brief description of your findings and background data with at least one data visualization
        - Website links to the Opportunity Atlas and Excel files in your repository
        - Simple step-by-step descriptions on how you manipulated the Excel data (you may also upload this as a separate document in the repository)

- **90-second Pitch**: Summarize your work and findings in a 90-second talk to the class on Friday, February 14, 2020. Make sure to highlight which cities you chose and why (if not your hometown), the similarities and differences, and what this shows you about how you personally may need to approach Baltimore-centric solutions.

Resources

- Opportunity Atlas: https://www.opportunityatlas.org/
- Opportunity Atlas in *New York Times:* *https://www.nytimes.com/2015/05/04/upshot/an-atlas-of-upward-mobility-shows-paths-out-of-poverty.html*
- Project Rubric: https://docs.google.com/document/d/1QKmjeUscF5XwppbsWy-yPXGIOe2E2Lj2TR4I_cc2IOE/edit?usp=sharing