Analysis of food insecurity statistics for the United States of America from 2010-2021.

For completion of the Final Project requirement of the Entity Academy, Southern Career’s Institute, and Woz-U Data Science curriculum.

A collaborative project by A. Nicole Mosley, Ivette Sierra, and Natalin Williams Sipes

**Phase 1: Dataset Collection**

**(Completed February 20, 2021)**

The datasets were collected and wrangled via Microsoft Excel, RStudio, and Python from Feeding America, the U.S. Census Bureau, the U.S. Department of Agriculture-Economic Research Service (USDA-ERS), the Bureau of Economic Analysis (BEA), and the Bureau of Labor Statistics (BLS)

**Datasets from Feeding America, U.S. Census Bureau, USDA-ERS, BEA, BLS:**

[Billboard 200 Top Albums 2017](https://open.spotify.com/playlist/1N9WQ0C6m7n1TVeLXdUoNb)  
[Billboard 200 Top Albums 2018](https://open.spotify.com/playlist/34KSLHLGSNqeK6UfxKnLuM)  
[Billboard 200 Top Albums 2019](https://open.spotify.com/playlist/0n3V7u9sMRV7sCDMhWxDtL)  
[Billboard 200 Top Albums 2020](https://open.spotify.com/playlist/1EEazdcjH0keT4sttGvH8c)  
[Billboard 200 Top Albums 2021](https://open.spotify.com/playlist/3avCwQPH6DkhMTRsizon7N)

**Included variables:**

* Population percentage below poverty
* Cost per meal and regional price parities
* State and regional
* Food insecurity
* Unemployment
* Inflation
* Child food insecurity

**Dataset creation:**

[Master Chart Table Creation](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/main/notebooks/Master_Chart_Table_Creation.ipynb)  
[All Album Track Table Creation](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/main/notebooks/All_Album_Track_Table_Creation.ipynb)

**Phase 2: Data Wrangling, Cleaning, and Recoding**

**(Completed February 27, 2022)**

Data was cleaned and recoded for analysis using RStudio and Python.

**Data Wrangling and Cleaning: (RPP’s, State Data all years, Unemployment, and others)**

[Wrangling Cleaning and Recoding](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/98de175eefebacf049b39f2e9fc0c55db6dda8a7/notebooks/WranglingCleaningAndRecoding.ipynb)

**Phase 3: Exploratory Analysis**

**(Completed March 6, 2022)**

Exploratory analyses included visualization and standardization of audio feature variables, as well as correlation analysis and plotting.

**Exploratory Analysis in RStudio and Python: (Python heatmaps Ivette did, RPP’s from Nicole, State projections Ivette, nat what you did in Rstudio that week)**

[Exploratory Analysis Notebook](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/65a2542ac09d7c534856f8994fbce64e0ed52d98/notebooks/ExploratoryAnalysis.ipynb)  
[Exploratory Analysis RScript](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/65a2542ac09d7c534856f8994fbce64e0ed52d98/rscripts/Exploratory_Analysis.R)

**Phase 4: Data Analysis**

**(Completed March 13, 2022)**

Dependent t-tests and histograms were used to analyze the variables and make correlations between them. The best use of our time was to create new spreadsheets in Microsoft Excel and Google Sheets. Once the spreadsheets had been created, we imported our data into RStudio and Python for analysis. We also continued to work with datasets and notebooks which analyzed regional price parities and state unemployment rates.

**Data Analysis in RStudio and Python: (Dependent t-tests, histograms for 300 set)**

[Data Analysis and Machine Learning Notebook](https://github.com/katieravenwood/Spotify-Five-Year-Analysis-Project/blob/65a2542ac09d7c534856f8994fbce64e0ed52d98/notebooks/DataAnalysis.ipynb)  
[Data Analysis RScript](https://github.com/Nuevachimi/Spotify-Five-Year-Analysis-Project/blob/main)

**Phase 5: Data Visualization**

**(Completed March 20, 2022)**

Visualizations were created in Python and R for analyses. (Nat heatmaps, histograms nat for 2010 and 2016 only, maps cost per meal of US and linegraph Ivette made, charts combining stats 2010 and 2016-2020 Nicole)

**Phase 6: Presentation, Food Insecurity in the United States of America**

**(Presented March 25, 2022)**

Project was presented via Zoom to Woz U faculty and students for internal review on March 25, 2022.  
  
View the project presentation video on VIMEO:  
[Good Vibrations? Spotify x Billboard Top 200 Albums Five-Year Analysis Project](https://vimeo.com/672901078)