DATA ANALYTICS PORTFOLIO

Andrew Ingrassia

PROJECTS

1. **GameCo**
   Analyzing global video game sales
2. **Influenza Preparation**
   Planning for an upcoming flu season
3. **Rockbuster**
   Designing a strategy for the launch of a new online video service
4. **Instacart**
   Analyzing sales data for insights and improved segmentation strategies
5. **Pig E. Bank**
   Supporting anti-money laundering compliance with analytical insights
6. **Exploring World Happiness**
   Analysis of data from the World Happiness Report

GAMECO

Tools Used
Excel, Pivot Tables, PowerPoint

Goal
To perform a descriptive analysis of video game sales data in order to help leadership understand how newer games are likely to fare in the market.

Data Source
VGChartz

SKILLS DEMONSTRATED

Grouping Data

Summarizing Data

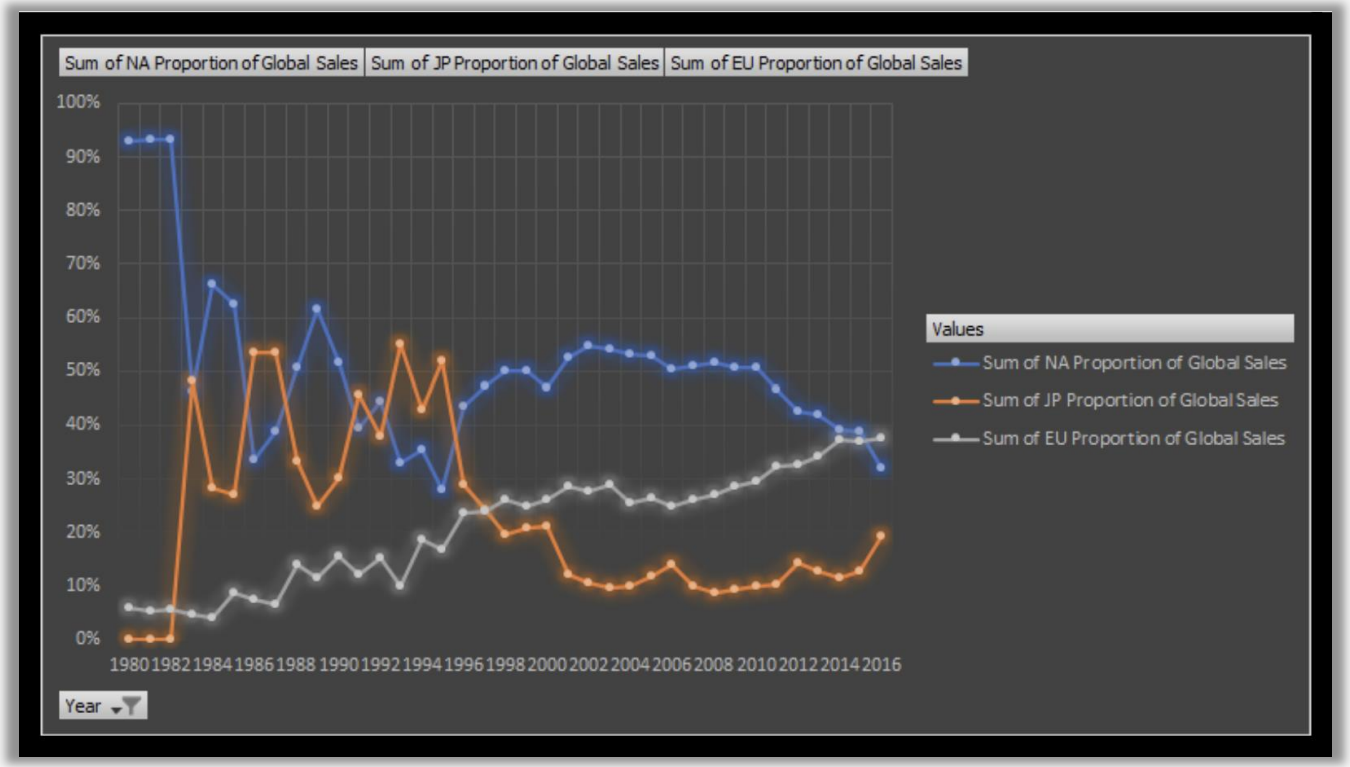
Descriptive Analysis

Visualizing Results in Excel

Presenting Results

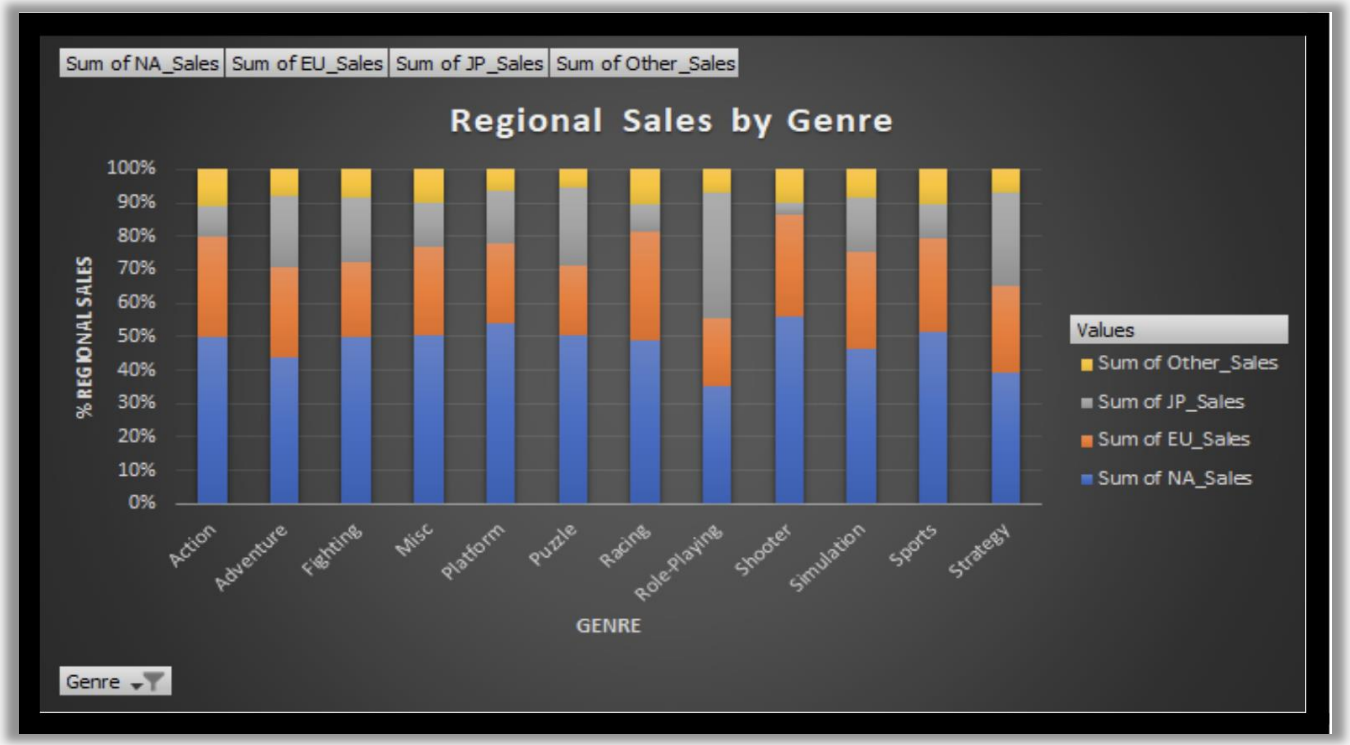
KEY TAKEAWAY #1

- Video game sales within North America, Europe, and Japan have changed significantly over time.
- The increasing popularity of video games as well as changes in population size appear to be the major drivers of these changes.



KEY TAKEAWAY #2

- Regional video game genre preferences are not universal - the data indicates that they vary significantly.
- This information can be used to determine how marketing funds are spent within a specific region.



PROJECT LINKS

Project Brief

Final Report

PowerPoint Presentation

INFLUENZA PREPARATION

Tools Used
Excel, Tableau, PowerPoint

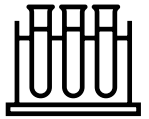
Goal
To help a medical staffing agency determine when to send staff, and how many, to each state during an upcoming flu season.

Data Source
CDC Website

SKILLS DEMONSTRATED

Translating Business Requirements

Data Integration



Statistical Hypothesis Testing

Data Cleaning

Data Transformation

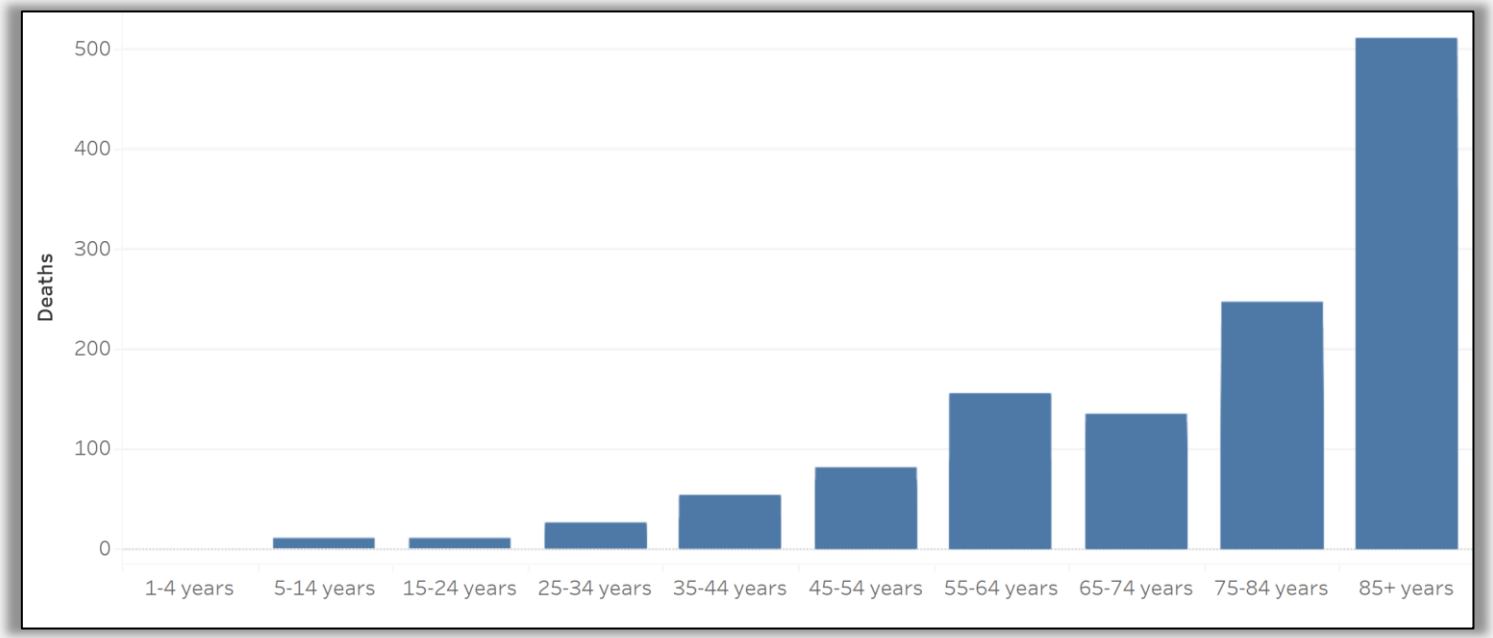
Visual Analysis & Forecasting

Storytelling with Tableau

Presenting Results to an Audience

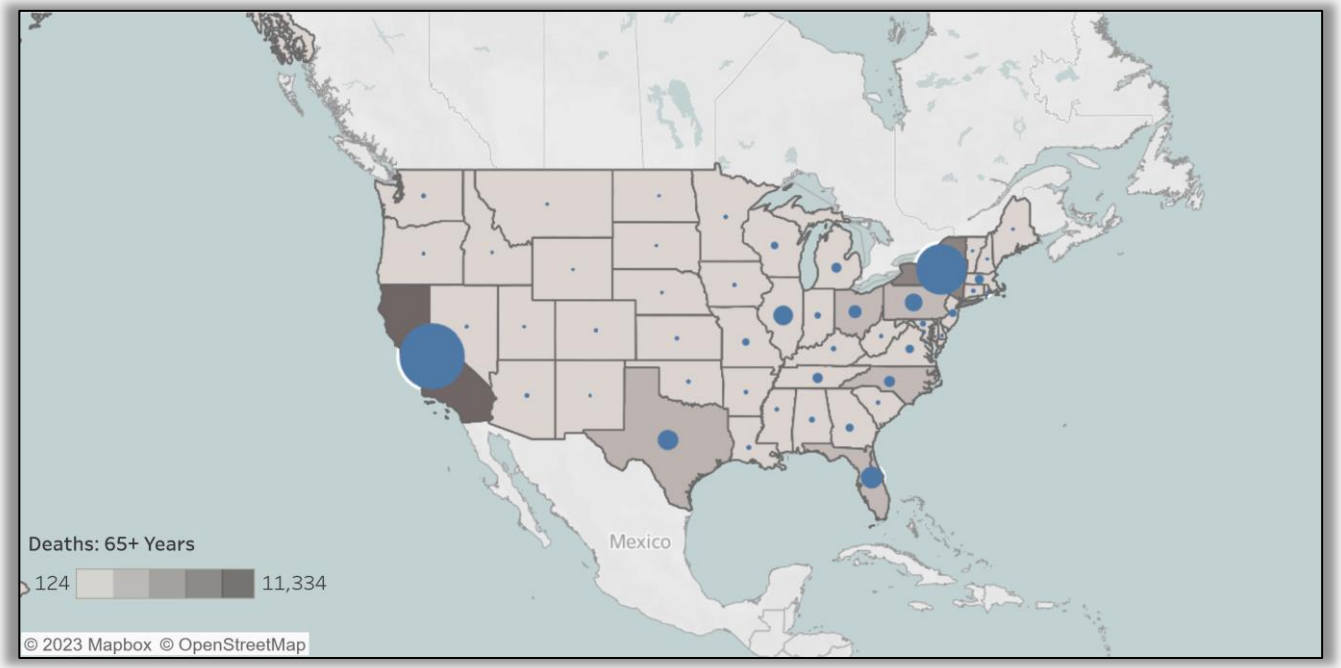
KEY TAKEAWAY #1

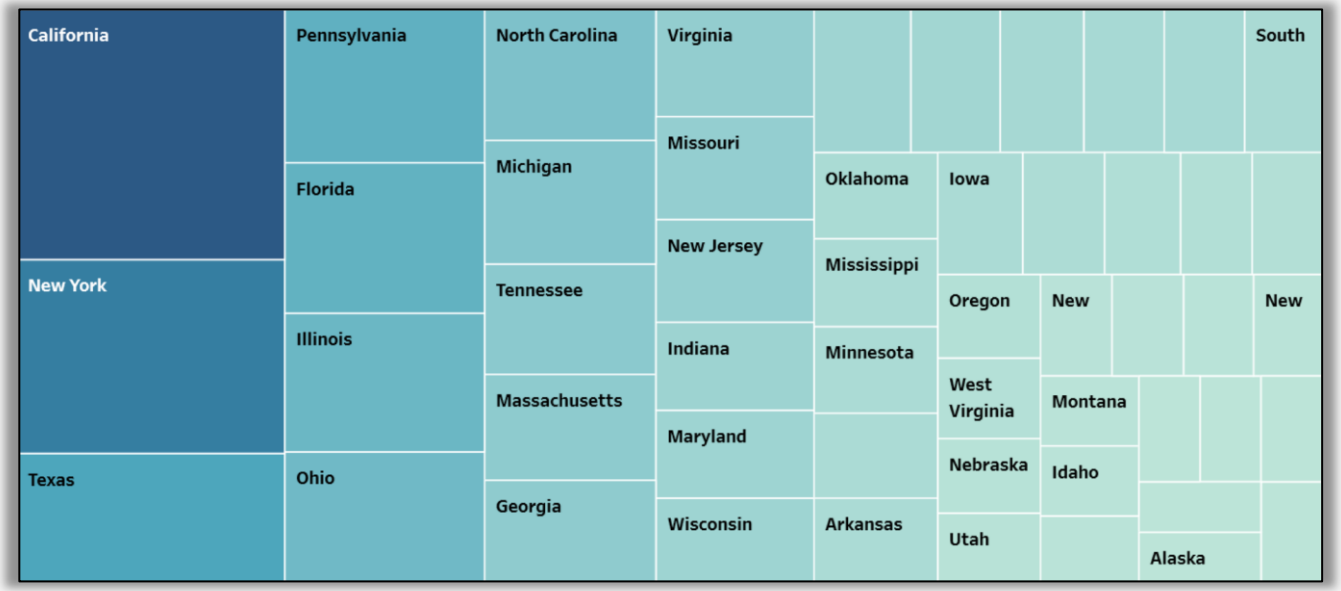
Individuals aged 65 years and older experience the greatest impact during an outbreak of influenza.

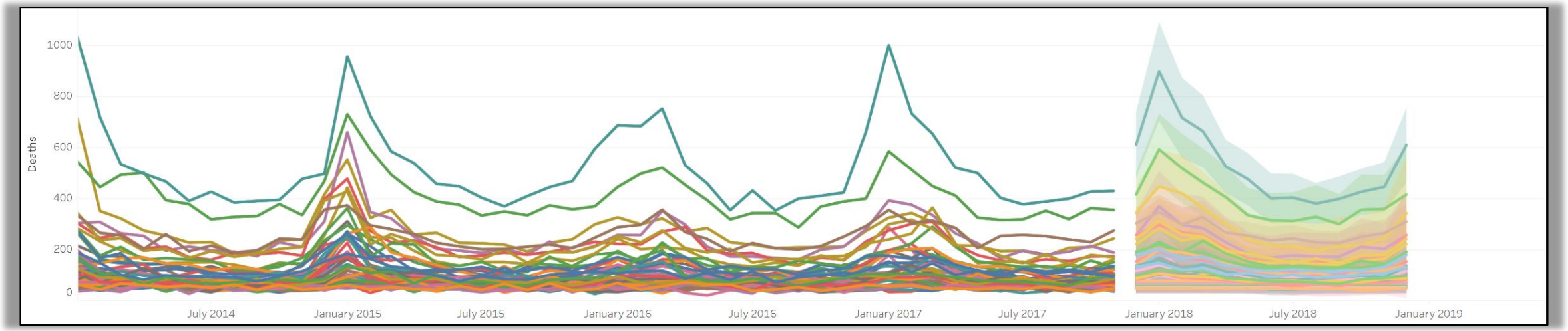


KEY TAKEAWAY #2

- Some states are more impacted than others.
- The states most impacted by influenza outbreaks between 2009 – 2017 were California, New York, Texas, Pennsylvania, and Florida.







KEY TAKEAWAY #3

Based on influenza seasonality patterns observed between 2009 – 2017, it is projected that the most severe impact of the upcoming flu season will take place between December 2017 and March 2018.

PROJECT LINKS

Project Brief

Final Report

(Tableau)

Final Presentation

(YouTube)

ROCKBUSTER

Tools Used

Excel, SQL, Tableau, PowerPoint

Goal

Analyze a fictional movie company's data, answer key business questions related to movie revenue, customer behavior, and regional sales, and present the findings in order to aid the company's 2020 strategy

Data Source

Rockbuster Data Set

SKILLS DEMONSTRATED

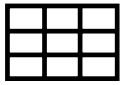
Relational Databases

Database Querying

Filtering

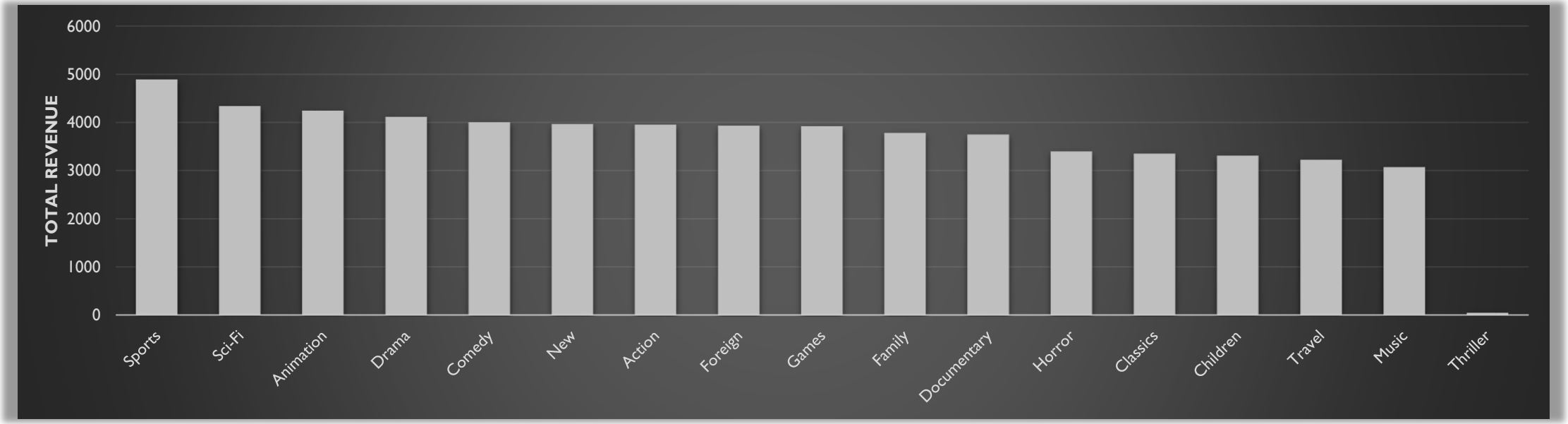
Cleaning & Summarizing

Subqueries



Common Table Expressions

Query Optimization

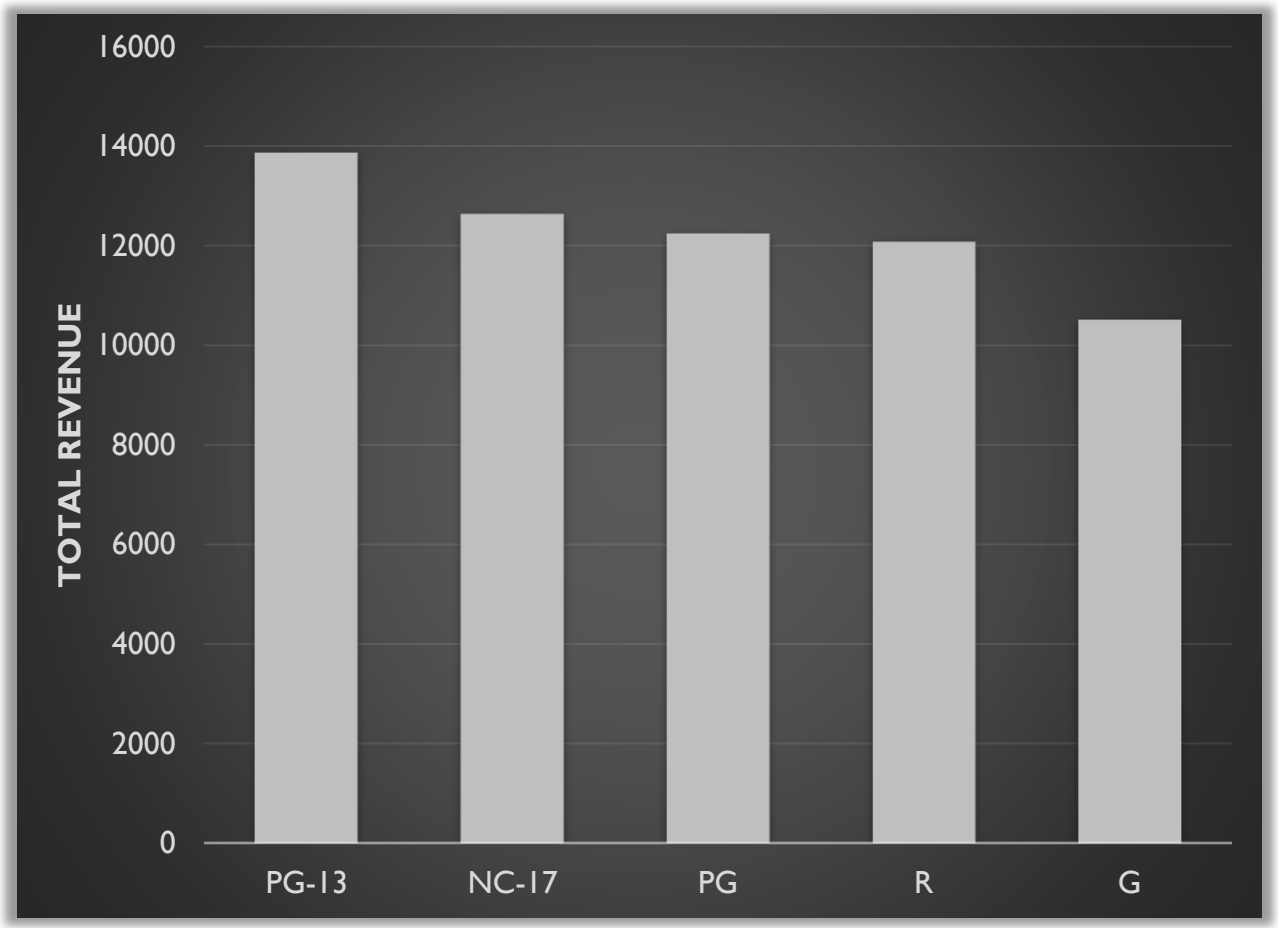


KEY TAKEAWAY #1

The highest revenue movie genres are sports, sci-fi, animation, drama, and comedy.

KEY TAKEAWAY #2

Movies with a PG-13 MPAA rating bring in the most revenue.



KEY TAKEAWAY #3

The highest revenue countries are India, China, The United States, Japan, and Mexico (in that order).

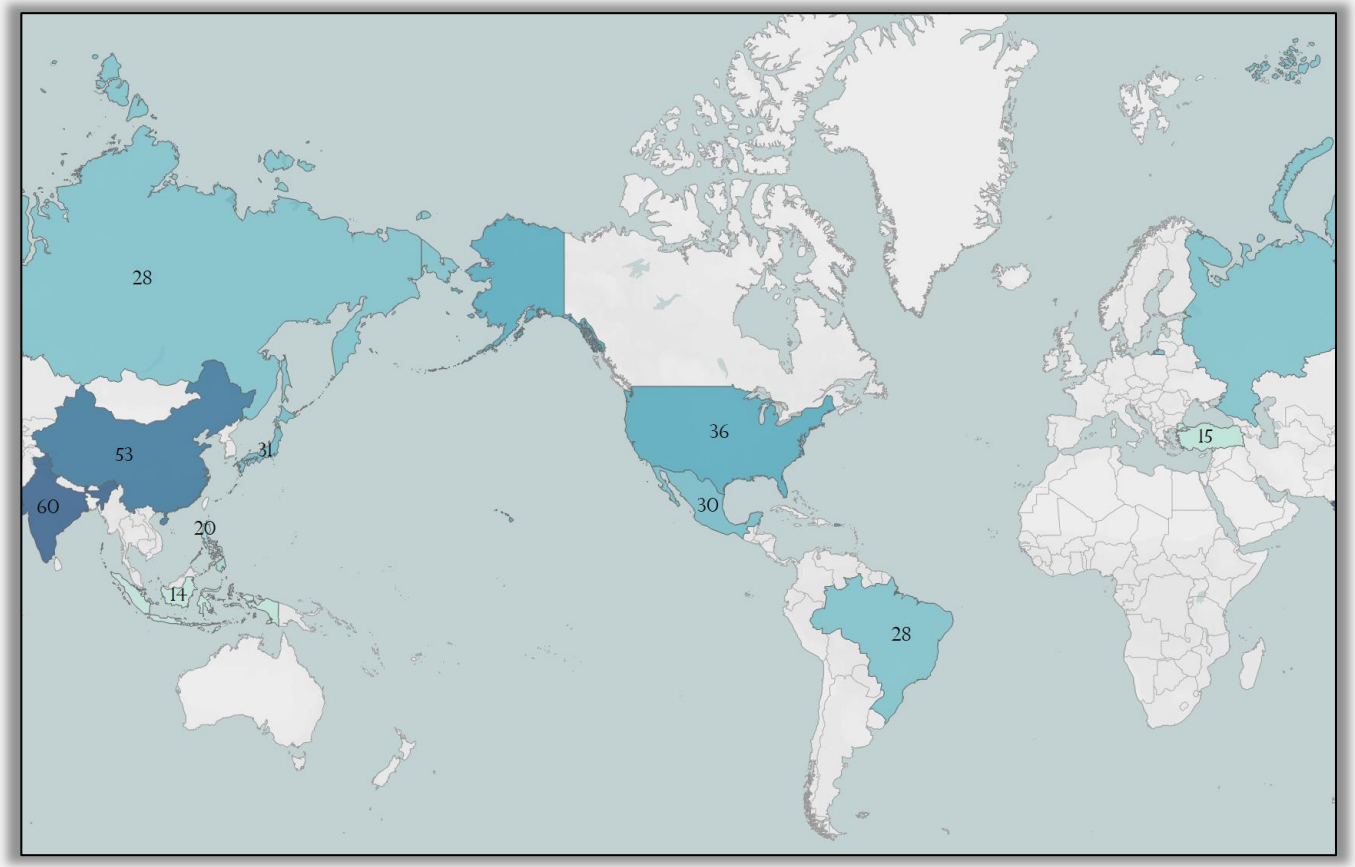
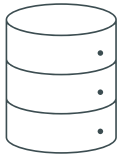


Tableau Link

PROJECT LINKS

Project Brief

Data Dictionary



Example SQL Queries

Final Presentation

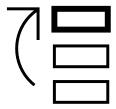
INSTACART

Tools Used
Python, Pandas, Jupyter, Excel, PowerPoint

Goal
Analyze Instacart's data, derive insights, and suggest strategies for marketing based on customer segmentation to improve sales and customer targeting.

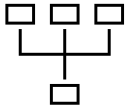
Data Source
Instacart Data Set

SKILLS DEMONSTRATED

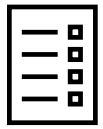


Data Wrangling

Data Merging



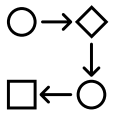
Deriving Variables



Cleaning & Summarizing

Aggregating Data

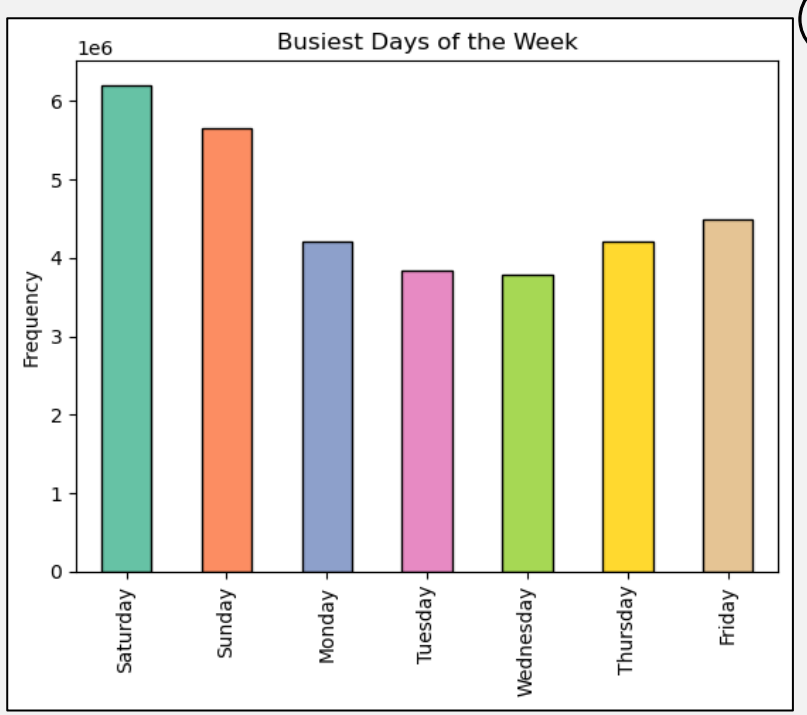
Reporting

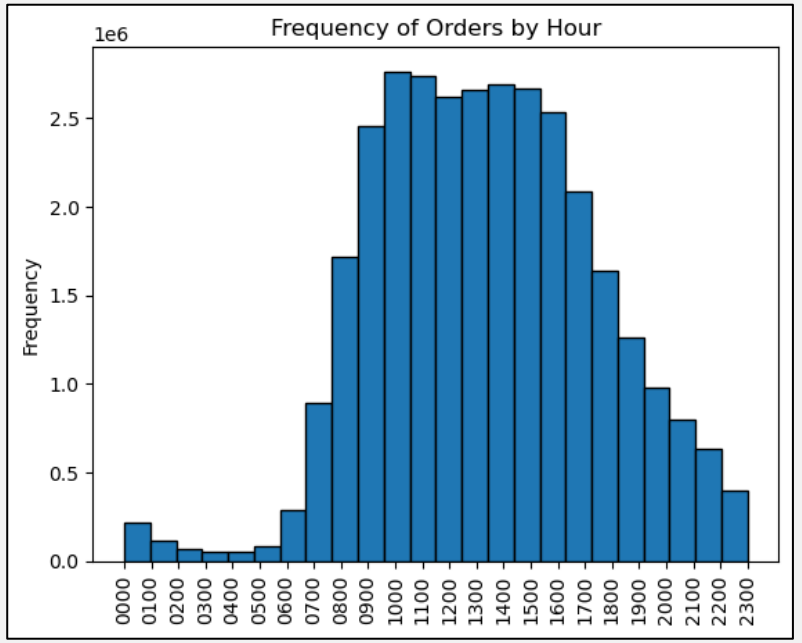


Population Flows

KEY TAKEAWAY #1

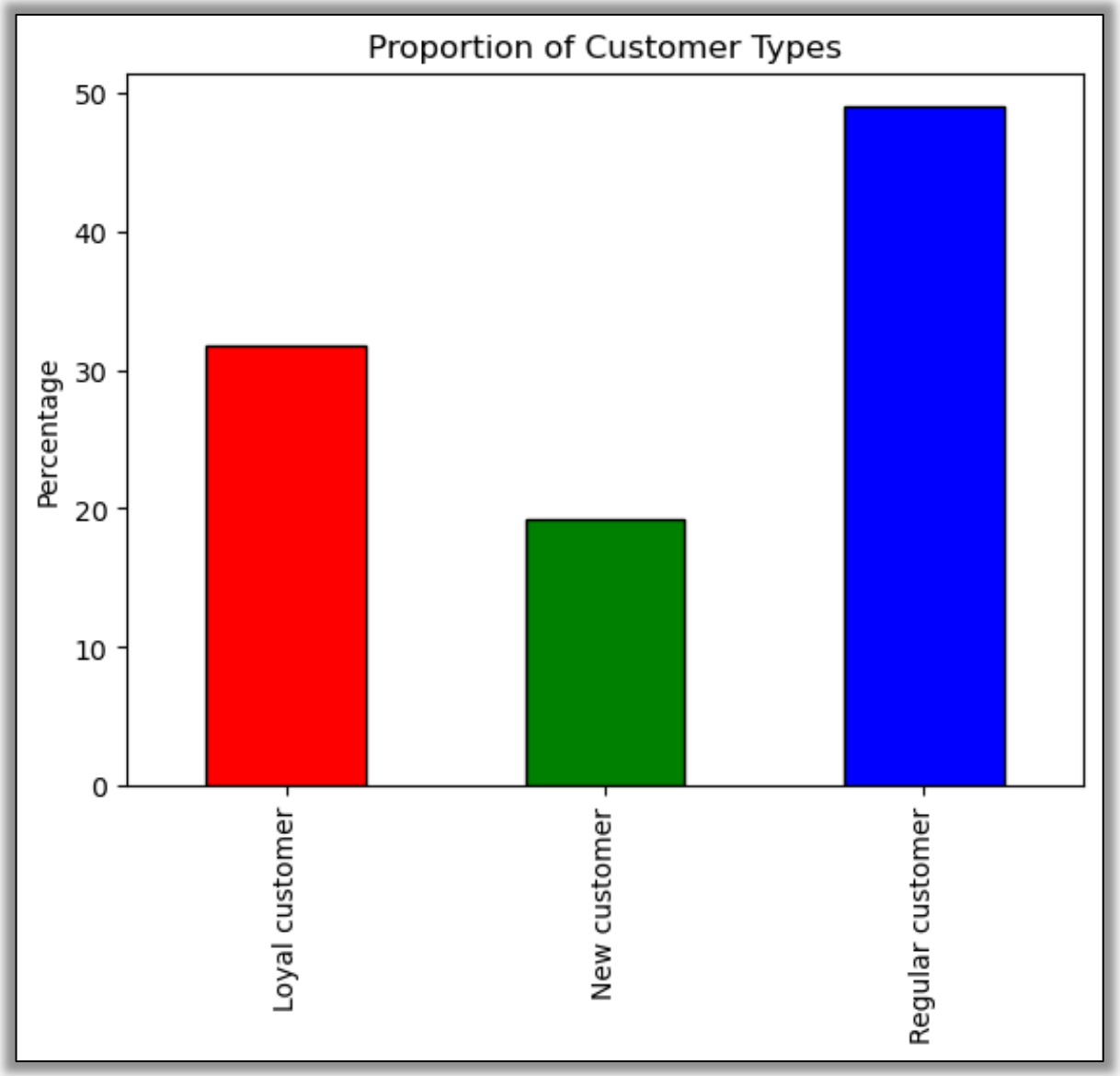
- Instacart experiences the highest order frequency on the weekend, with Saturday being the busiest day.
- Tuesdays and Wednesdays are the least busy.
- Highest order frequency occurs between 9am and 5pm.
- **Recommendation:** Schedule ads on Tuesdays and Wednesdays after 3pm.



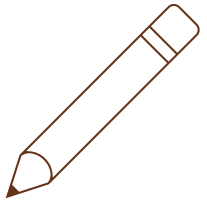


KEY TAKEAWAY #2

- Customers were divided into 3 categories according to the frequency with which they shopped at Instacart.
- "Loyal" customers have fewer days between orders than "Regular" customers.
- **Recommendation**: Consider offering benefits (such as a rewards program) to customers to encourage more frequent ordering



PROJECT LINKS



Project Brief

Final Report

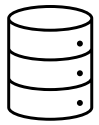
PIG E. BANK

Tools Used
Excel

Goal
To analyze bank data to find out which client characteristics can help predict if a particular client is likely to leave the bank. To achieve this, a decision tree will be created.

Data Source
Bank Data Set

SKILLS DEMONSTRATED

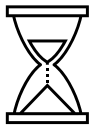


Big Data

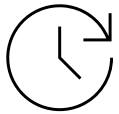
Data Ethics

Data Mining

Predictive Analysis



Time Series Analysis

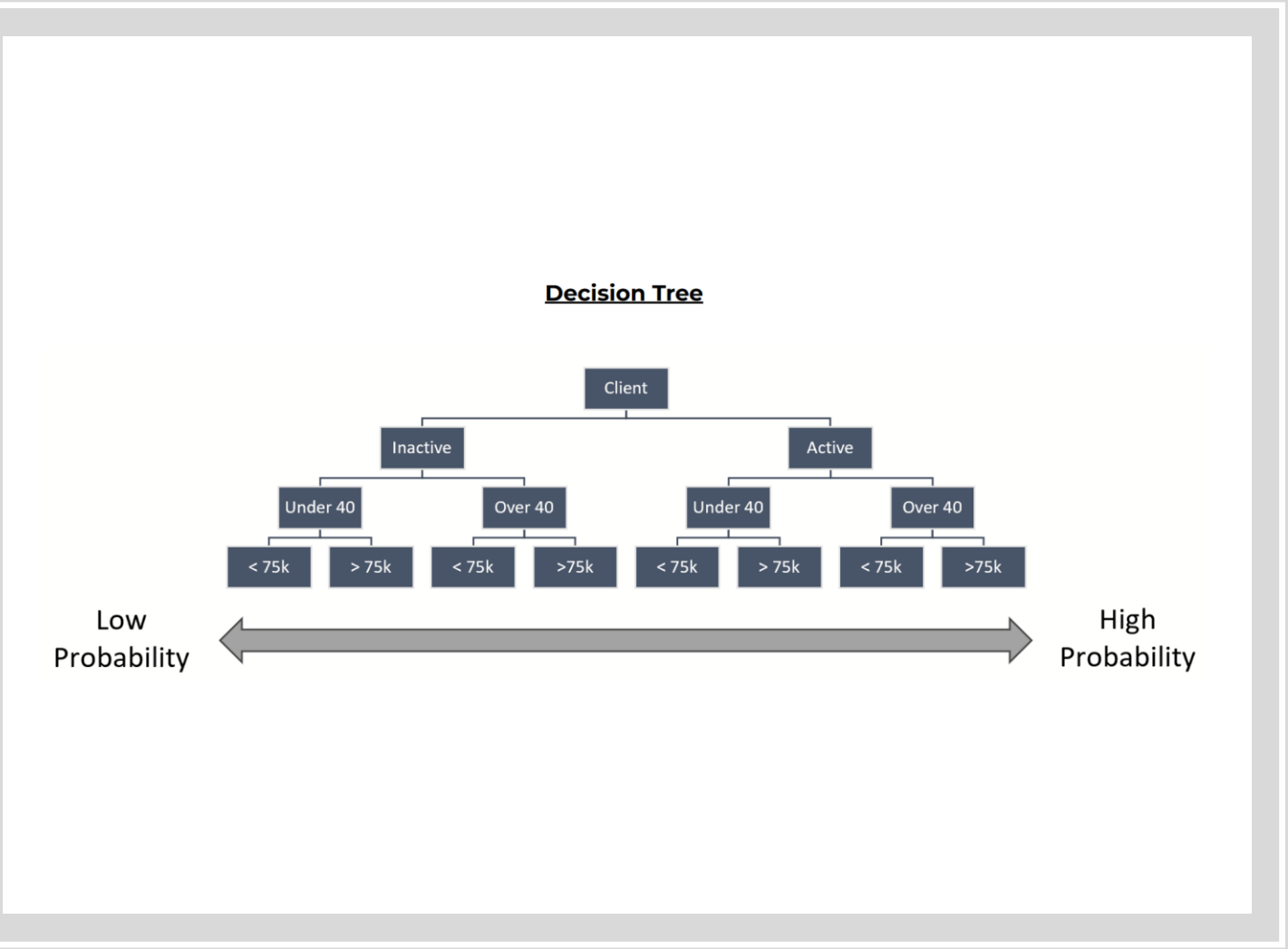


Forecasting

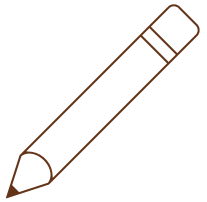
KEY TAKEAWAY

Criteria that determine the probability of a client leaving the bank

1) The frequency with which a given client interacts with the bank
2) Whether or not a client is over 40
3) Whether or not a client has an account balance greater than $75,000



PROJECT LINKS



Project Brief

Analysis
(Excel)

EXPLORING WORLD HAPPINESS

Tools Used

Python, Pandas, Numpy, Seaborn, Plotly, Matplotlib, Scipy, sykit-learn, statsmodels, geopandas, Tableau

Goal

To assess the relative impact of the 6 key variables measured in the World Happiness Report.

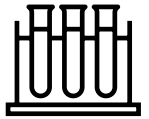
Data Source

World Happiness Report
+
Datahub

SKILLS DEMONSTRATED

Data Cleaning/Wrangling

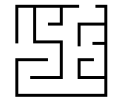
Principal Component Analysis



Statistical Testing

Linear Regression Modeling

Time Series Analysis



Exploratory Data Analysis

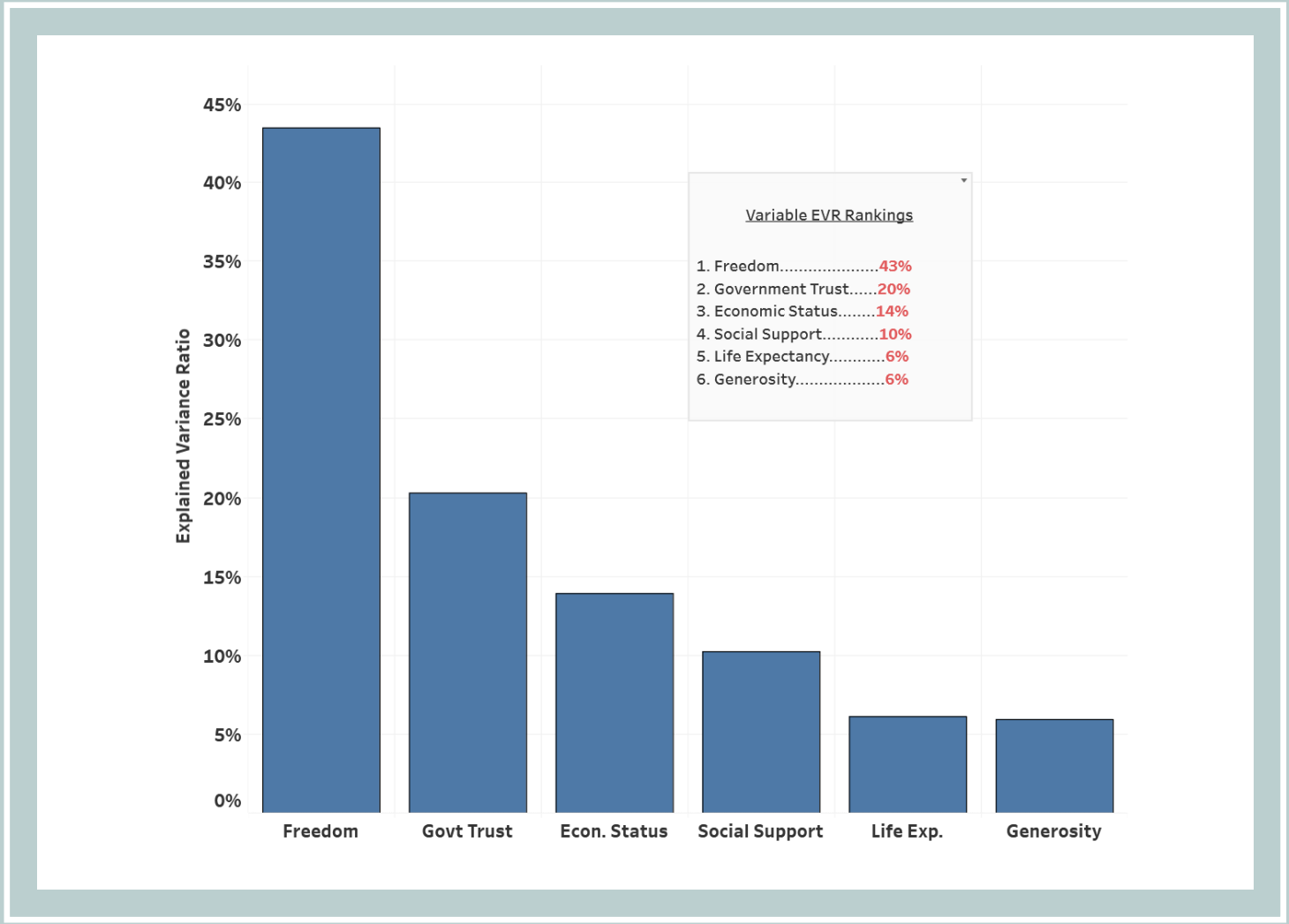
Storytelling with Tableau

Feature Engineering

Machine Learning

KEY TAKEAWAY

With an explained variance ratio of 43%, "Freedom" appears to be far and away the most impactful variable measure by the World Happiness Report.



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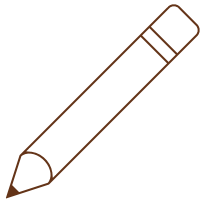

Project Brief

Analysis
(Tableau)

THANK YOU!

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