

"The best way to predict the future is to create it." - Peter Druckert



Data Analytics Portfolio

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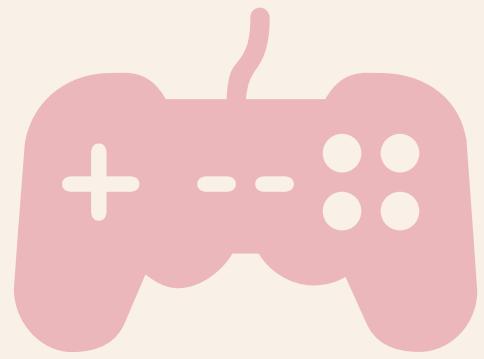


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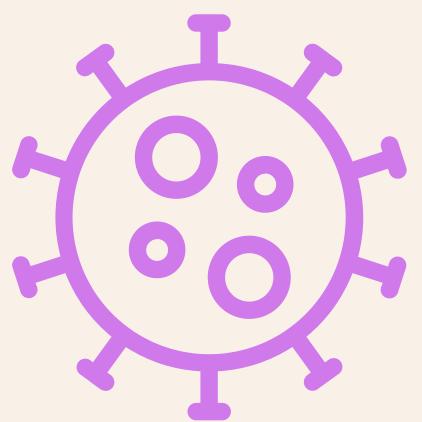
[jhttps://www.linkedin.com/in/jennifersousa5/](https://www.linkedin.com/in/jennifersousa5/)

Projects Overview



Marketing Analysis

Maximizing marketing budget with sales analysis for higher ROI.



Forecasting

Optimizing resource allocation based on demand forecasting.



Visualization Analysis

Enhancing decision-making processes through data-driven visualization reports.



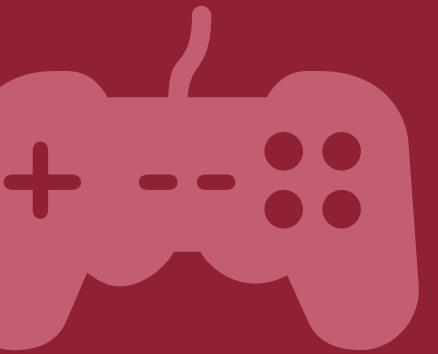
Sales Optimization

Optimizing sales with statistical analysis on customer behavior data.



Machine Learning

Leveraging machine learning for sales trends and consumer behavior analysis.



GameCo.

Maximizing marketing budget with sales analysis for higher ROI.

Background

OBJECTIVE

- GameCo is a fictitious video game company that aims to utilize data for the purpose of guiding the creation of novel games.
- Goal: Direct marketing budget to maximize return on investment.

[Project Brief Link](#)

DATA SET

- Dataset includes number of video game units sold from 1980-2016
- Dataset link
- VGChartz's methodology

SKILLS

- Data set preparation
- Descriptive Analysis
- Visual Presentation

TOOLS

Excel

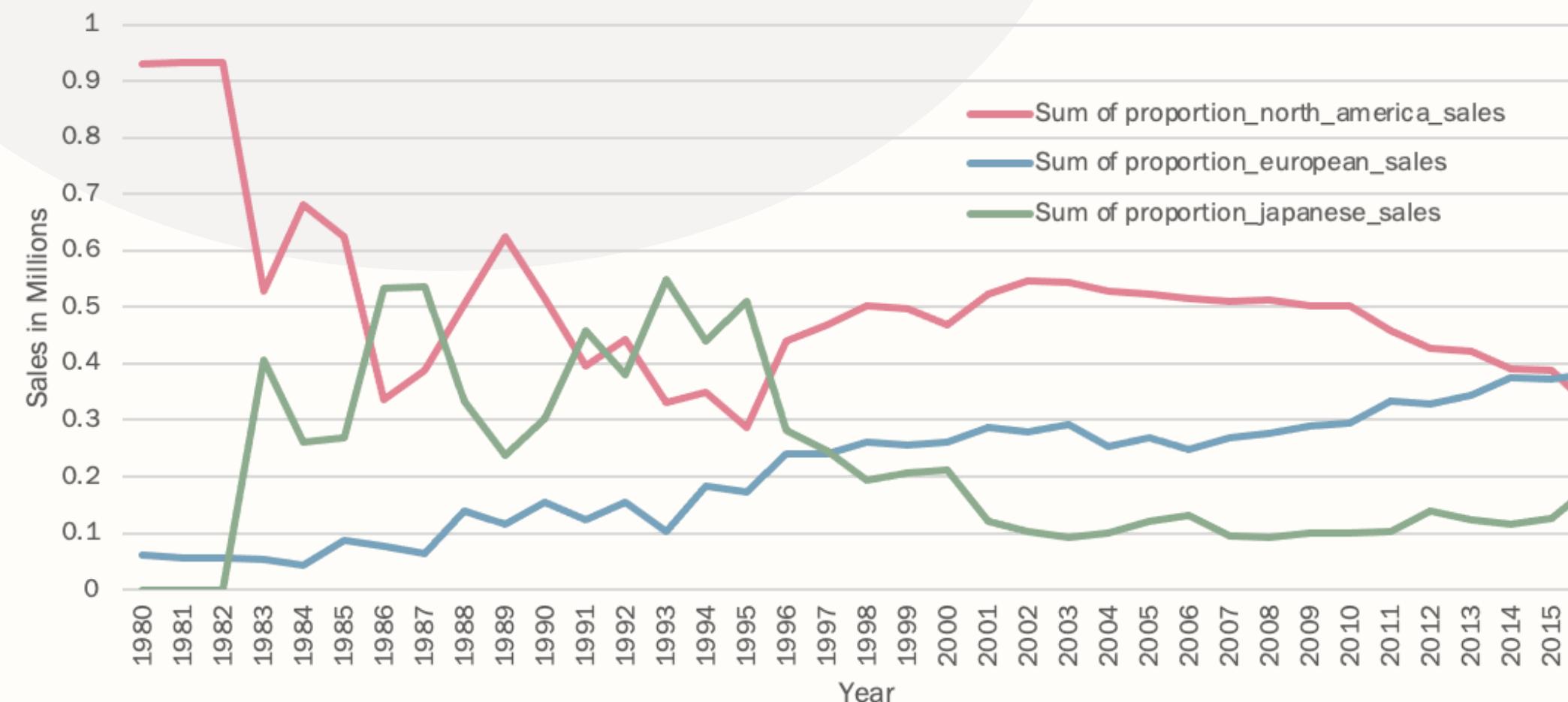
Powerpoint

Analysis

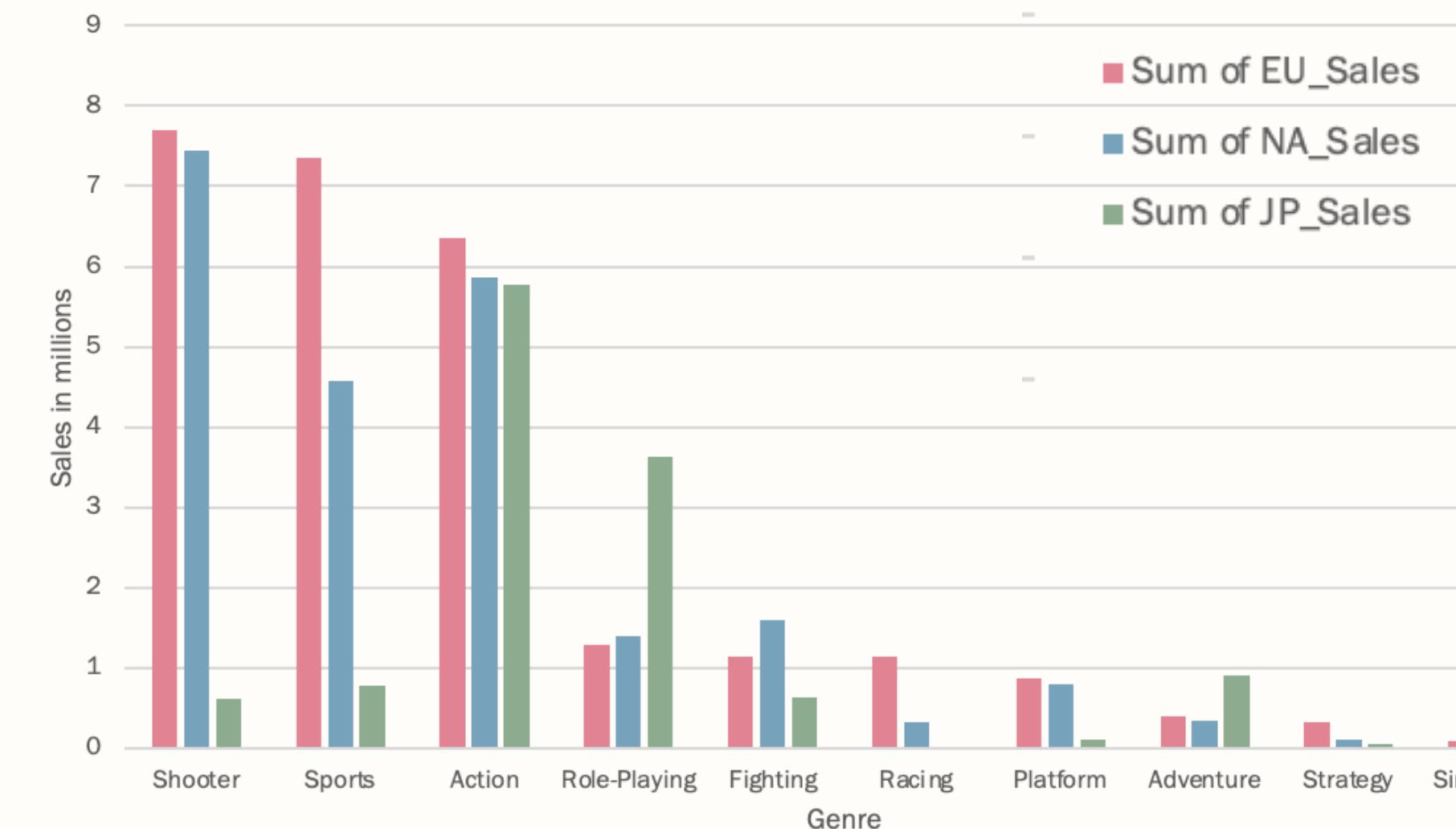
Skills Used in Excel:

Pivot tables, cross tabulation,
logical functions, COUNT, IF,
VLOOKUP, and INDEX-MATCH

Sales Proportions Per Region



Popular Genres in 2016

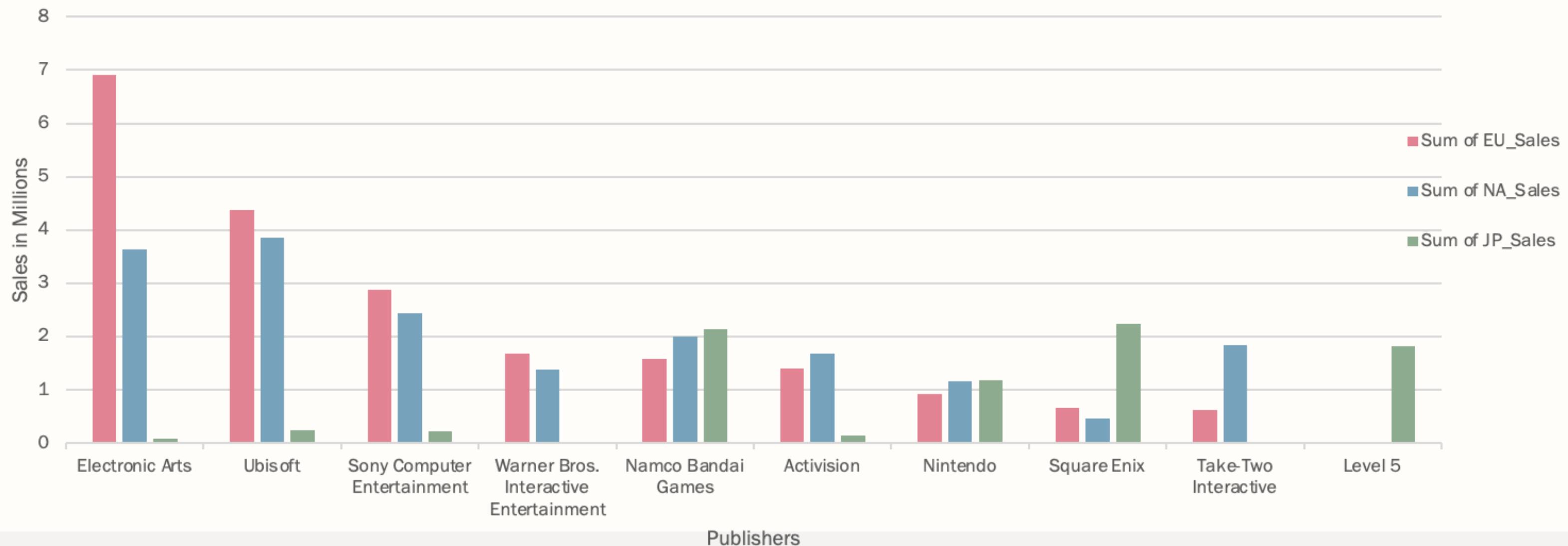


The top 5 genres
globally in 2016 were:

1. Action
2. Shooter
3. Sports
4. Role-Playing
5. Fighting

Analysis

Top 10 Publishers in 2016



Main Publisher Competition:

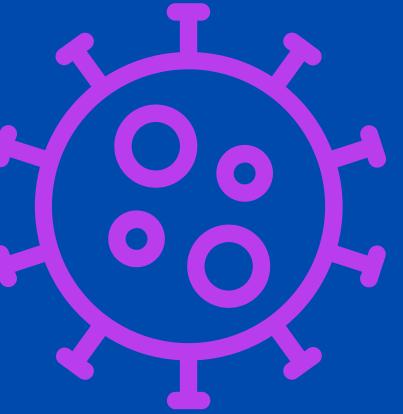
Electronic Arts, Ubisoft, and Sony in North America and Europe; and Namco Bandai Games and Square Enix in Japan.

Recommendations



- **Invest in digital copies** and streaming platforms due to the declining demand for physical video game copies.
- **Understand factors behind the success of the top-selling video game genres** in 2016, namely Action, Shooter, and Sports, is crucial for informed marketing budget allocation and effective audience targeting to drive sales in 2017.
- **Focus marketing efforts on the growing European market** will positively impact the 2017 sales metrics due to its potential for capturing the largest global sales share.





Medical Staffing Agency

Optimizing resource allocation based on demand forecasting.

Background

DATA SET

- Influenza deaths by geography, time, age, and gender. Source: CDC
- Population data by geography. Source: US Census Bureau.
- The datasets contain data from 2009-2017

SKILLS

- Business requirement interpretation
- Data connection & integration
- Geographical & Spatial Analysis
- Tableau dashboard design

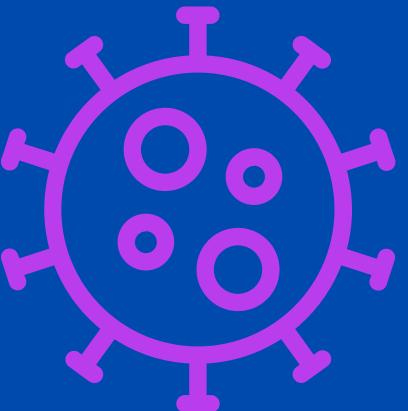
TOOLS

Excel

Tableau

[Project Brief Link](#)

Background



Goal

To help a medical staffing agency that provides temporary workers to clinics and hospitals on an as-needed basis. The analysis will help plan for influenza season, a time when additional staff are in high demand. The final results will examine trends in influenza and how they can be used to proactively plan for staffing needs across the country.

Motivation

The United States has an influenza season where more people than usual suffer from the flu. Some people, particularly those in vulnerable populations, develop serious complications and end up in the hospital. Hospitals and clinics need additional staff to adequately treat these extra patients. The medical staffing agency provides this temporary staff.

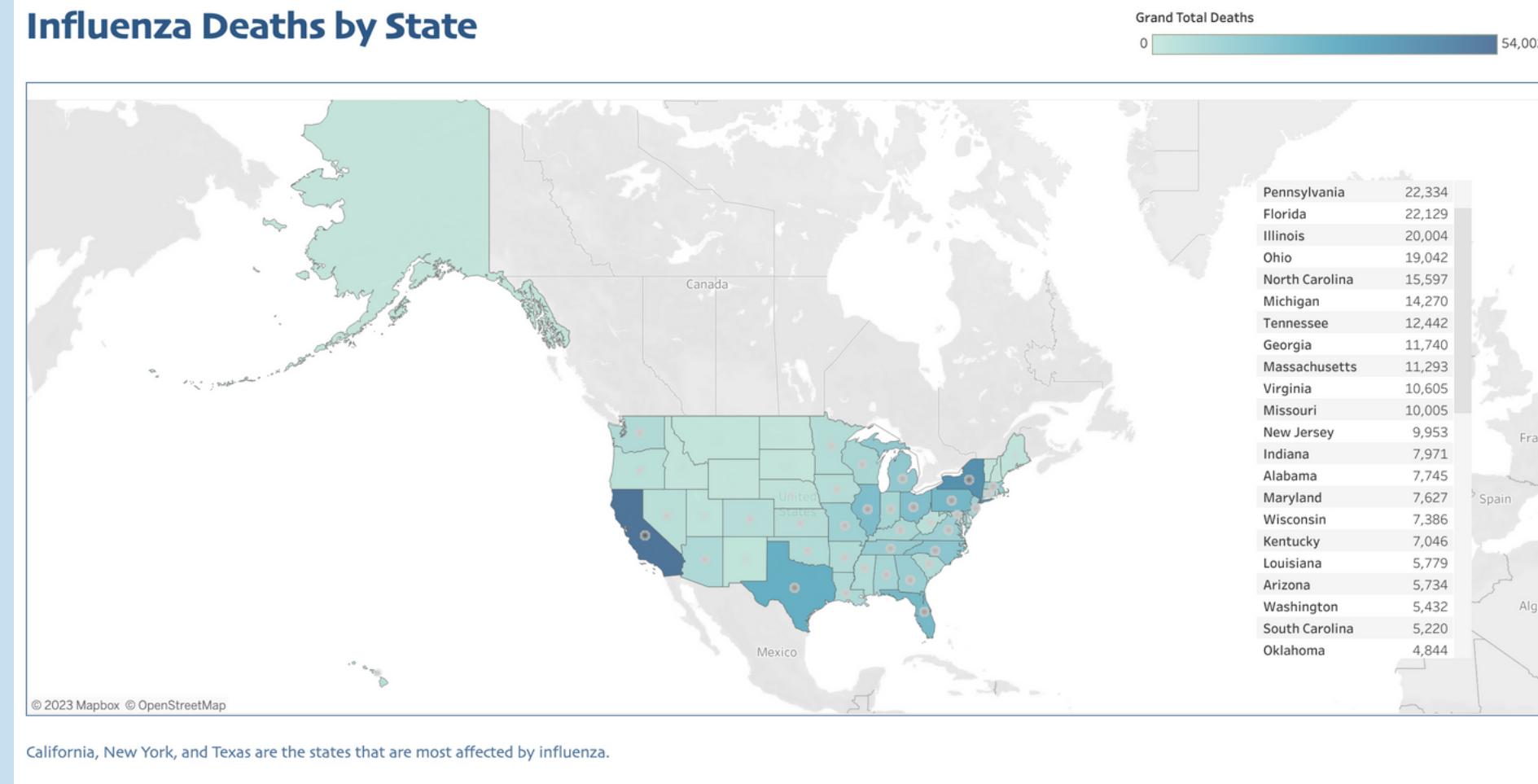
Objective

Determine when to send staff, and how many, to each state.

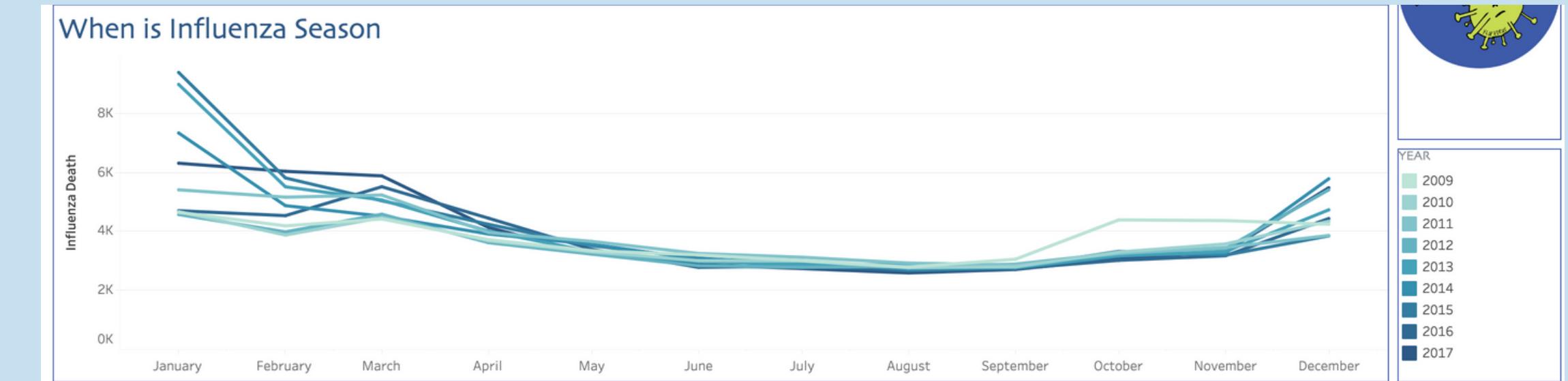
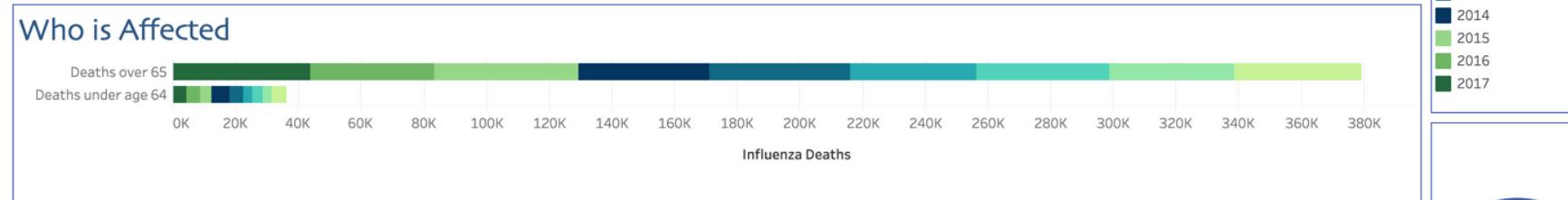
Scope

The agency covers all hospitals in each of the 50 states of the United States, and this project will plan for the upcoming influenza season.

Analysis



Influenza Trends



Recommendations



- **Conduct annual staff surveys** in hotspot and non-hotspot areas to gather valuable insights on resource allocation and identify regional disparities.
- **Elderly population is most effected** by influenza deaths, therefore a vaccine incentive must be put in place for that age group.
- Analyze 2018 flu death predictions for staffing needs insight.

For an In-depth look at this project, please visit the following link:

[Tableau Storyboard](#)

[Presentation Recording](#)





Rockbuster Stealth

Enhancing decision-making processes through data-driven visualization reports.

Background

Context

- Rockbuster Stealth is a fictitious movie rental company planning to use its existing movie licenses to launch an online video rental service.

[Project Brief Link](#)

TOOLS

SQL

PowerPoint

SKILLS

- Understanding how data is structured in relational database.
- Performing foundational and complex queries against a given database in SQL.
- Joining tables, creating subqueries, creating common table expressions

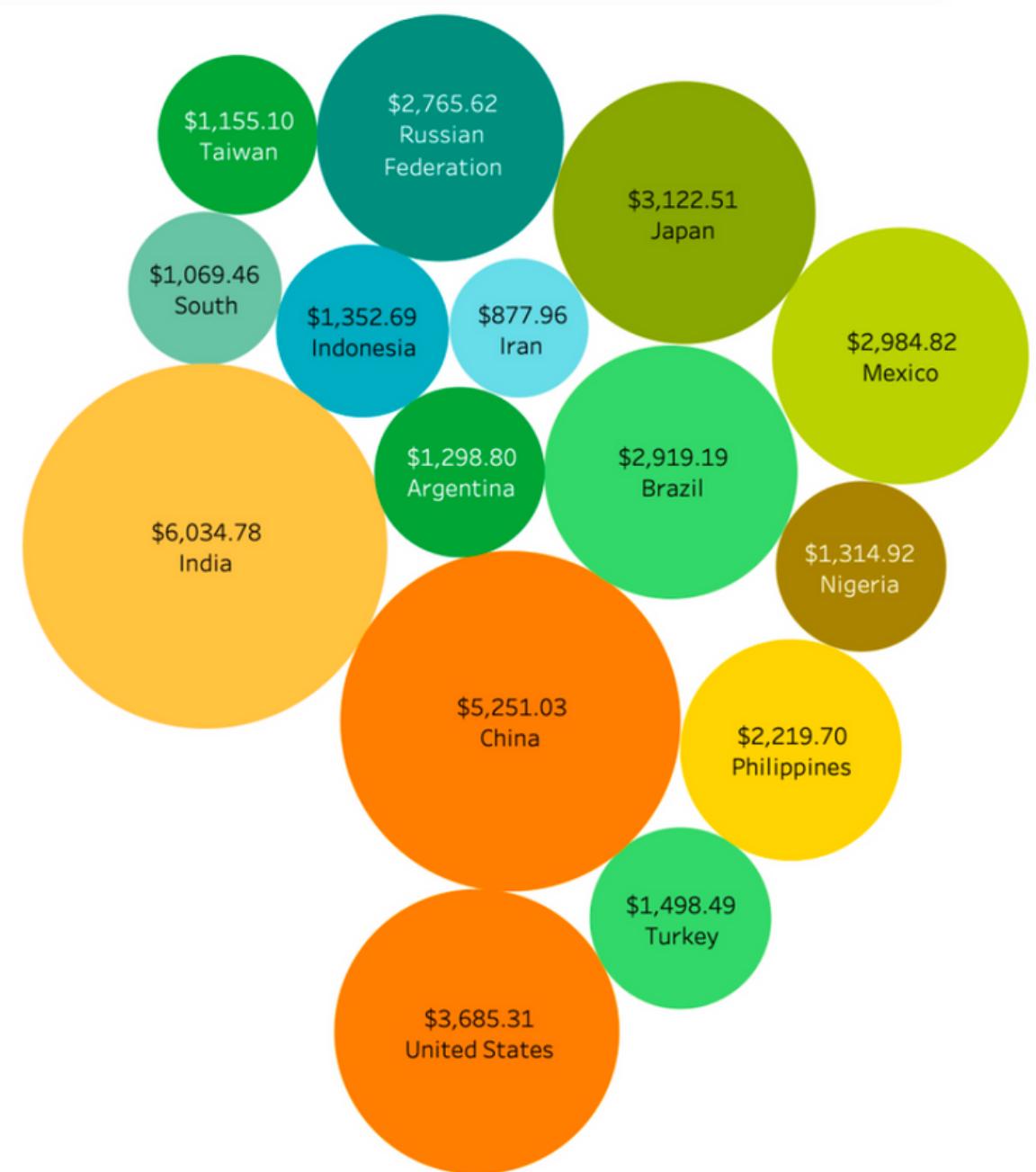
Dataset

[Link to relationship diagram](#)

[Link to dataset](#)

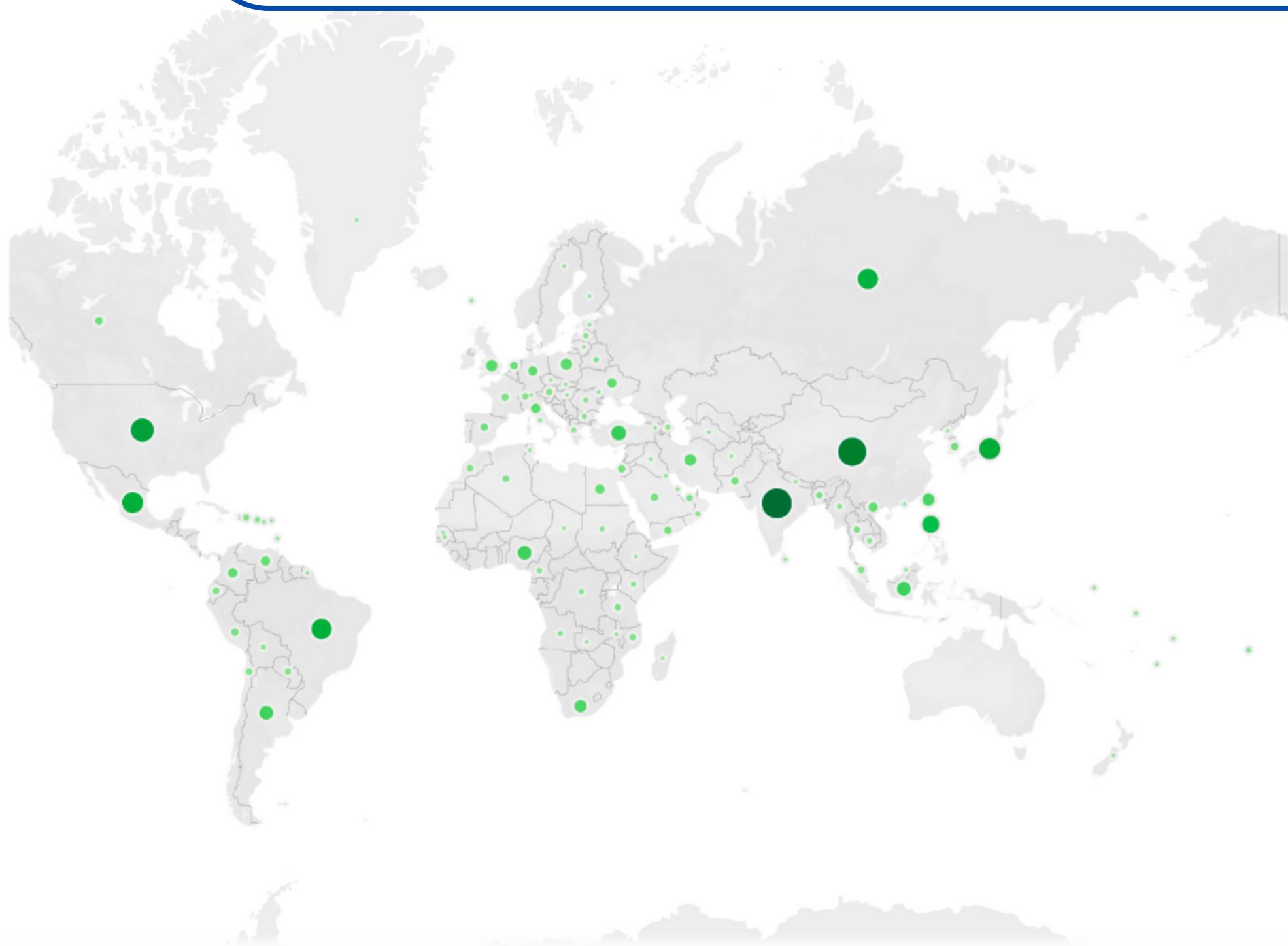
Analysis

ROCKBUSTER'S CUSTOMERS

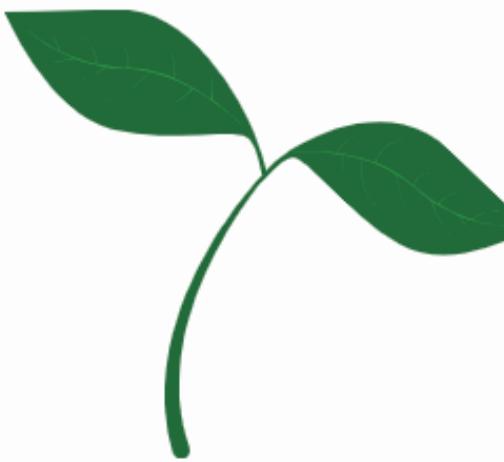


Skills used in Tableau:

Dashboard development, data story-telling, mapping, performance optimization, geographic and spatial analysis.



RECOMMENDATIONS



Invest

Allocate additional marketing budget toward Europe and Africa since they're generating the lowest revenue.
Continue to invest the same value in top grossing countries such as India, China, USA, Japan, Brazil, Mexico and Russia.



Market

Market Sports, Sci-Fi, and Animation genres in Asia, North & South America, and Russia.
Market Drama, Comedy, and Fantasy in Europe and Africa.



Reward

Start a point rewards system to incentivize customers to rent more films and increase loyalty. Encourage new guests to sign up to the membership program with a free movie rental.

For a closer look at the project visit the following links:

[Project Report](#)

[Data Dictionary](#)

[Github Repository](#)



Instacart

Optimizing sales with statistical analysis on customer behavior data.

Background

Context & Goal

- The App Instacart is interested in the variety of customers in their database along with their purchasing behaviors.

Goal: Guide Instacart's marketing efforts to effectively target the appropriate customers with suitable products.

[Project Brief Link](#)

TOOLS

Python

Excel

SKILLS

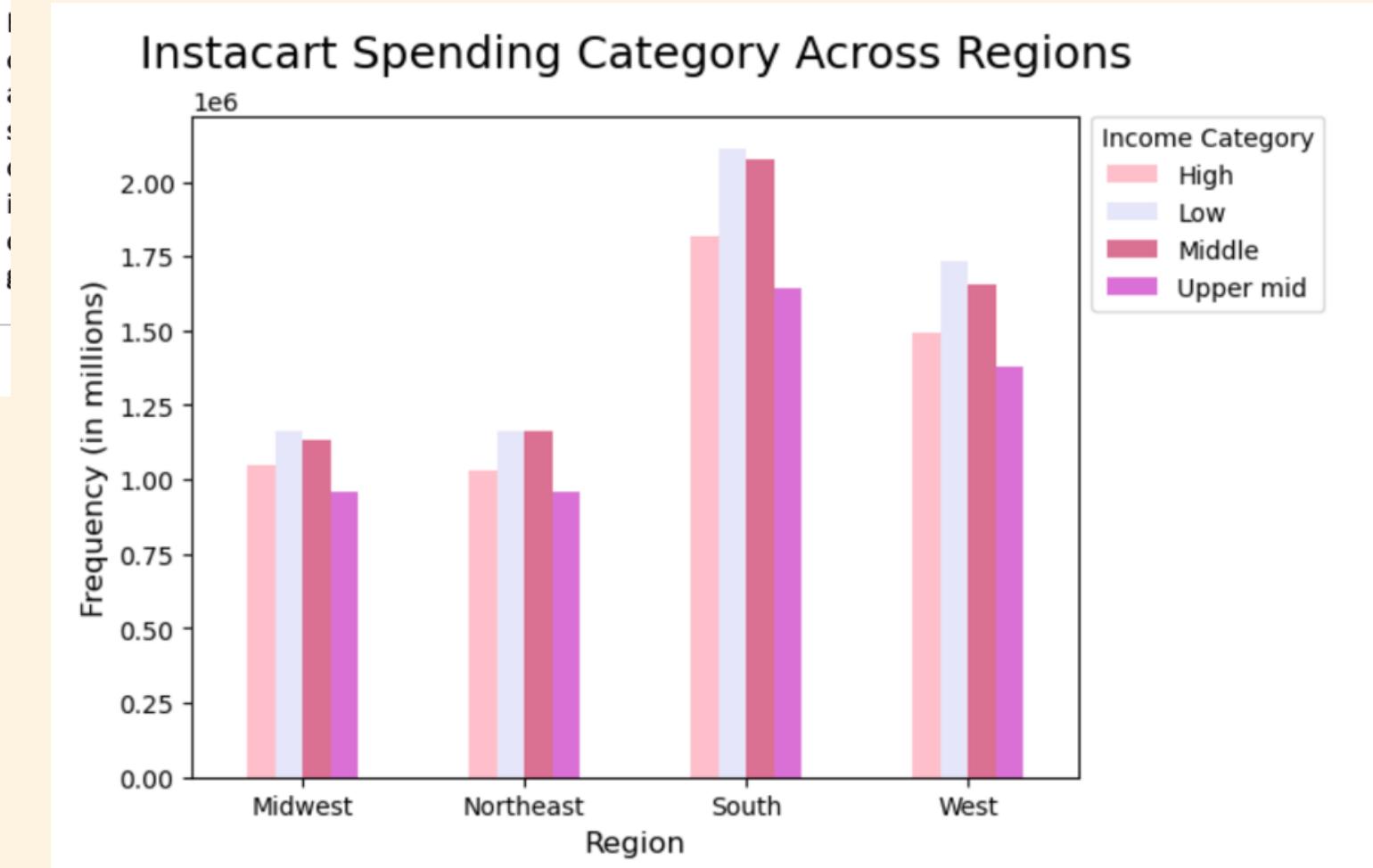
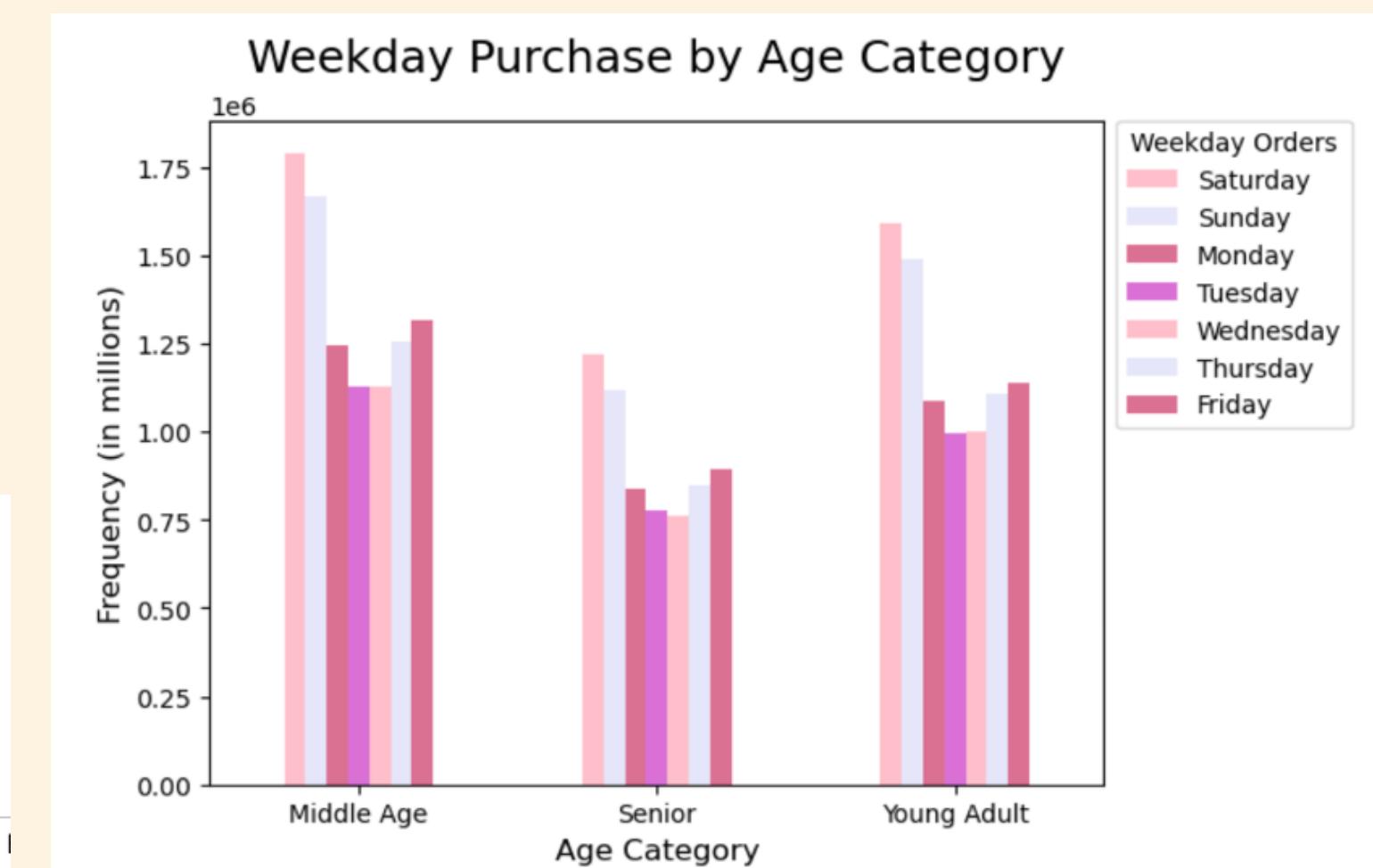
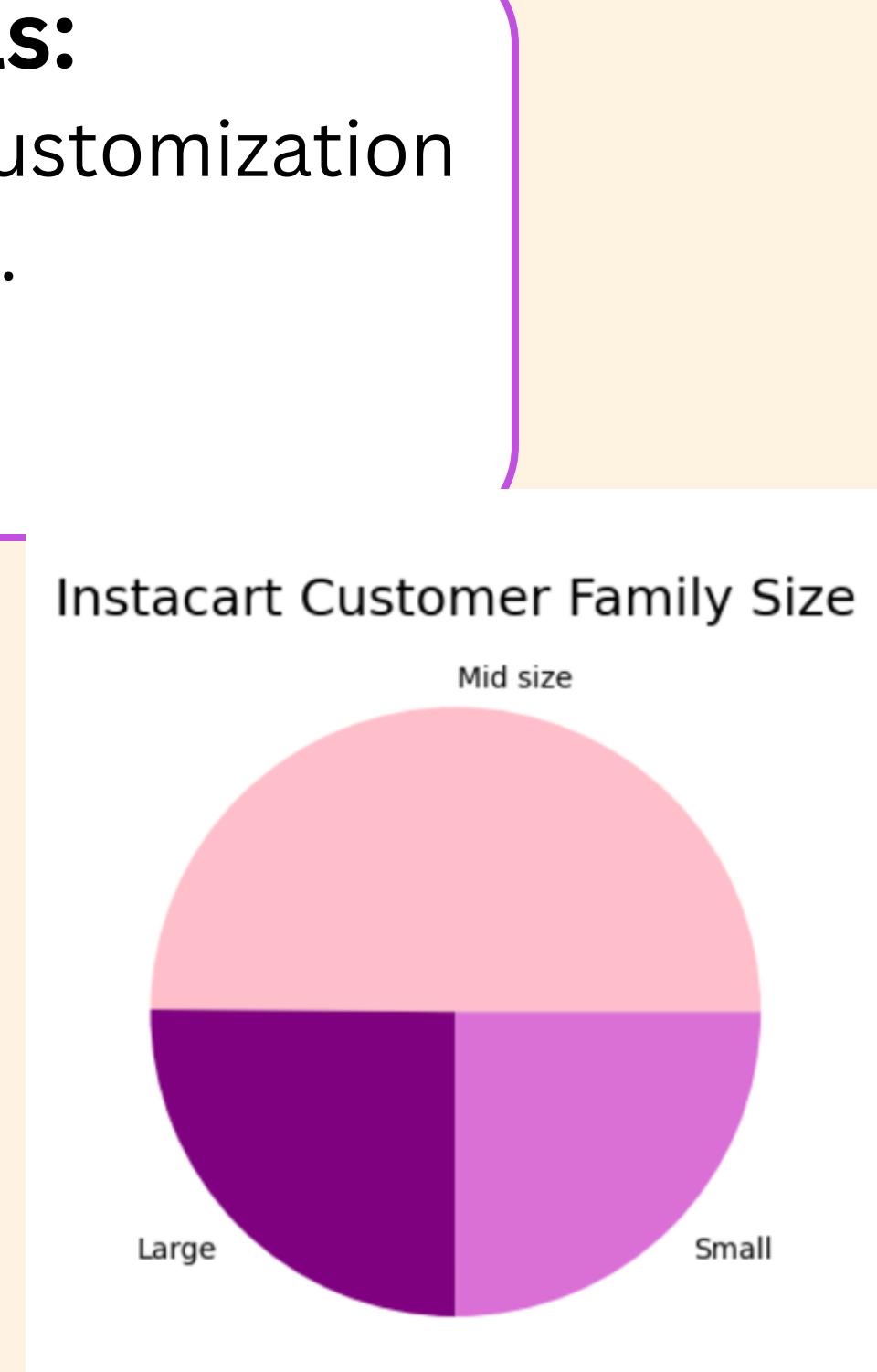
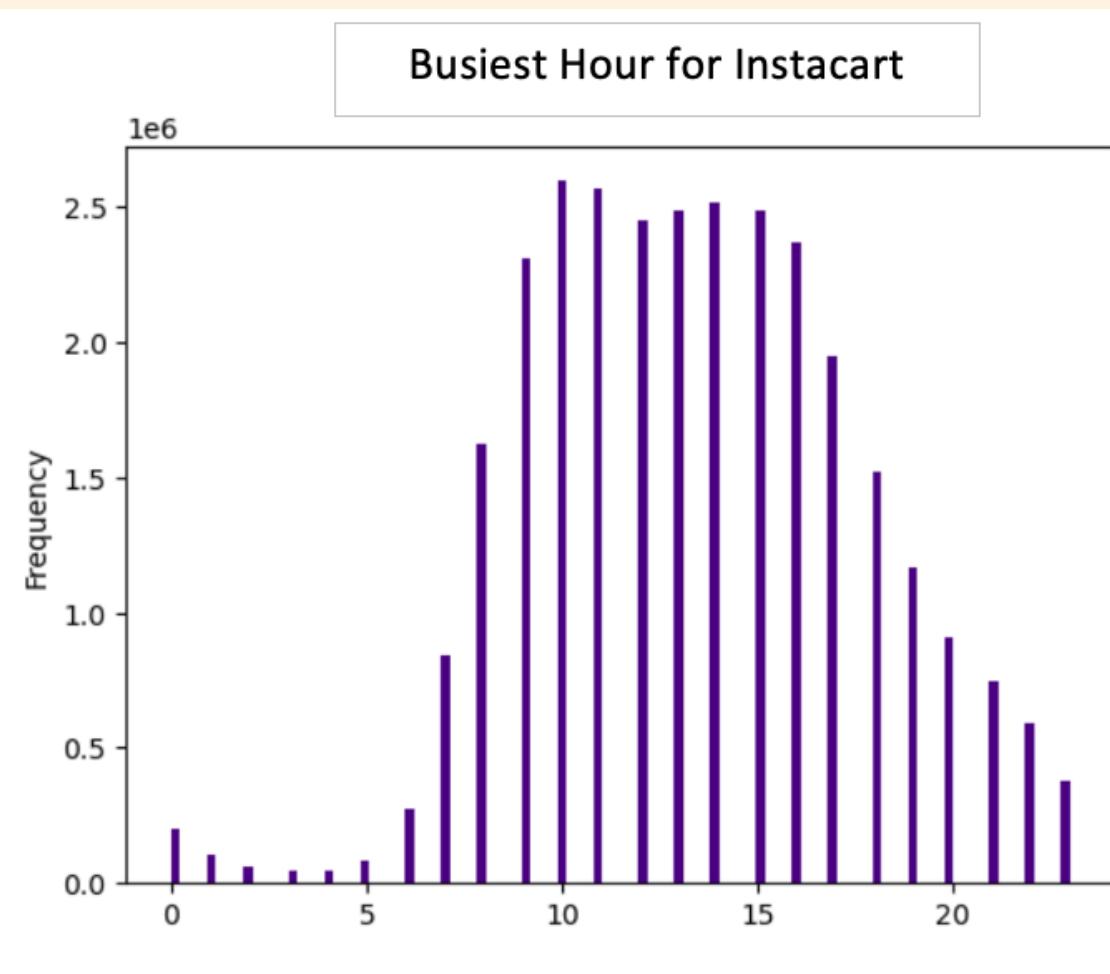
- Data wrangling, data merging, deriving variables, and grouping and aggregating data in Python.
- Using the following libraries: pandas, numpy, matplotlib, scipy, seaborn
- Creating visualizations within Python
- Aggregating Python analysis into an Excel report for stakeholders

Dataset

[Link to dataset](#)

Python Visualization skills:

Matplotlib, Seaborn, Pandas, customization & styling, storytelling with data.



Key Insights

The least number of orders occur between the hours of 11pm and 6am.

Middle income customers make the largest segment of customers when it comes to income.

The southern region makes up the largest segment of customers.

For a closer look at the project visit the following links:

[Project Report](#)

[Project Brief](#)

[Github Repository](#)





eCommerce

Leveraging machine learning for sales trends, seasonal patterns, and consumer behavior analysis.

Background

Context

- I analyzed a publicly available Brazilian ecommerce dataset on [Kaggle](#) comprising 100,000 orders made at the Olist Store. The dataset encompasses information from multiple marketplaces in Brazil, spanning the years 2016 to 2018.

[**Project Brief Link**](#)

TOOLS

Python

Tableau

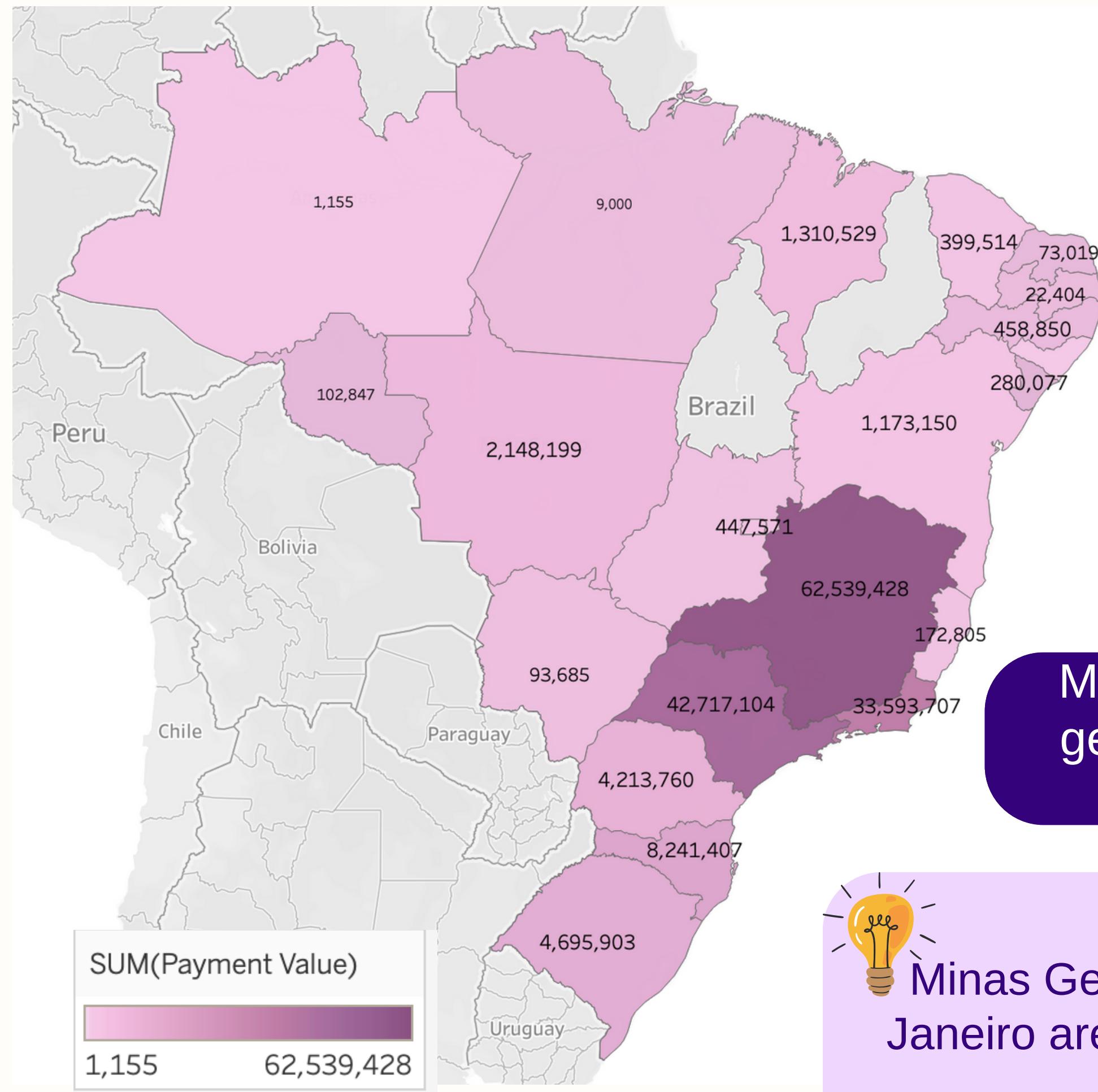
SKILLS

- Conducted regression analysis in Python using supervised machine learning.
- Conducted cluster analysis using unsupervised machine learning.
- Created engaging visuals to form an interactive data dashboard.

Dataset

[**Github Repository**](#)

[**Tableau Presentation**](#)



Hypothesis

1. States with larger population will generate a higher revenue.
2. Sales will experience a surge during the Holiday season.

Goal

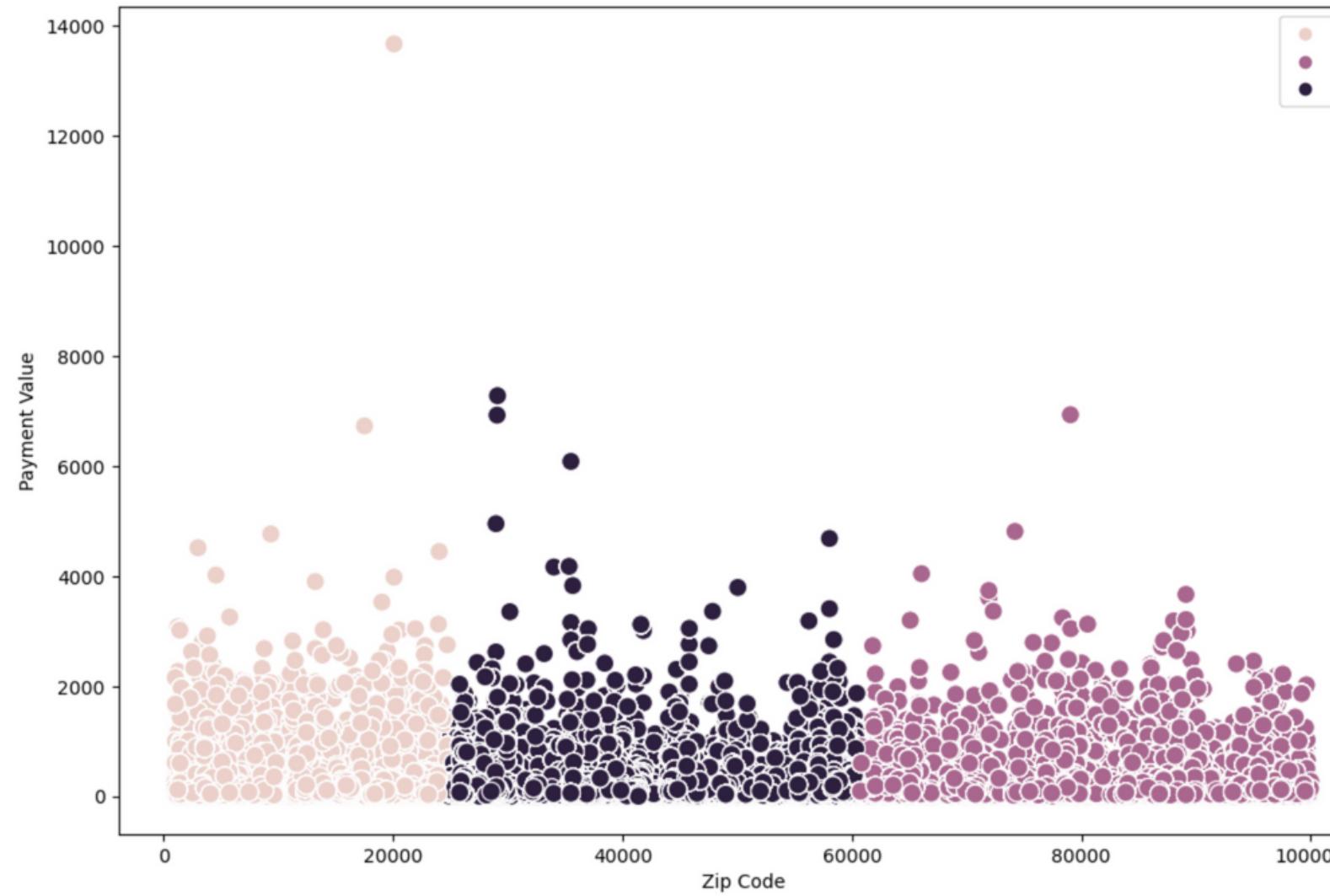
This analysis will provide insight on sales, consumer, and data trends by year and state.

Minas Gerais, São Paulo, and Rio de Janeiro generated the highest sales, thus proving the first hypothesis.



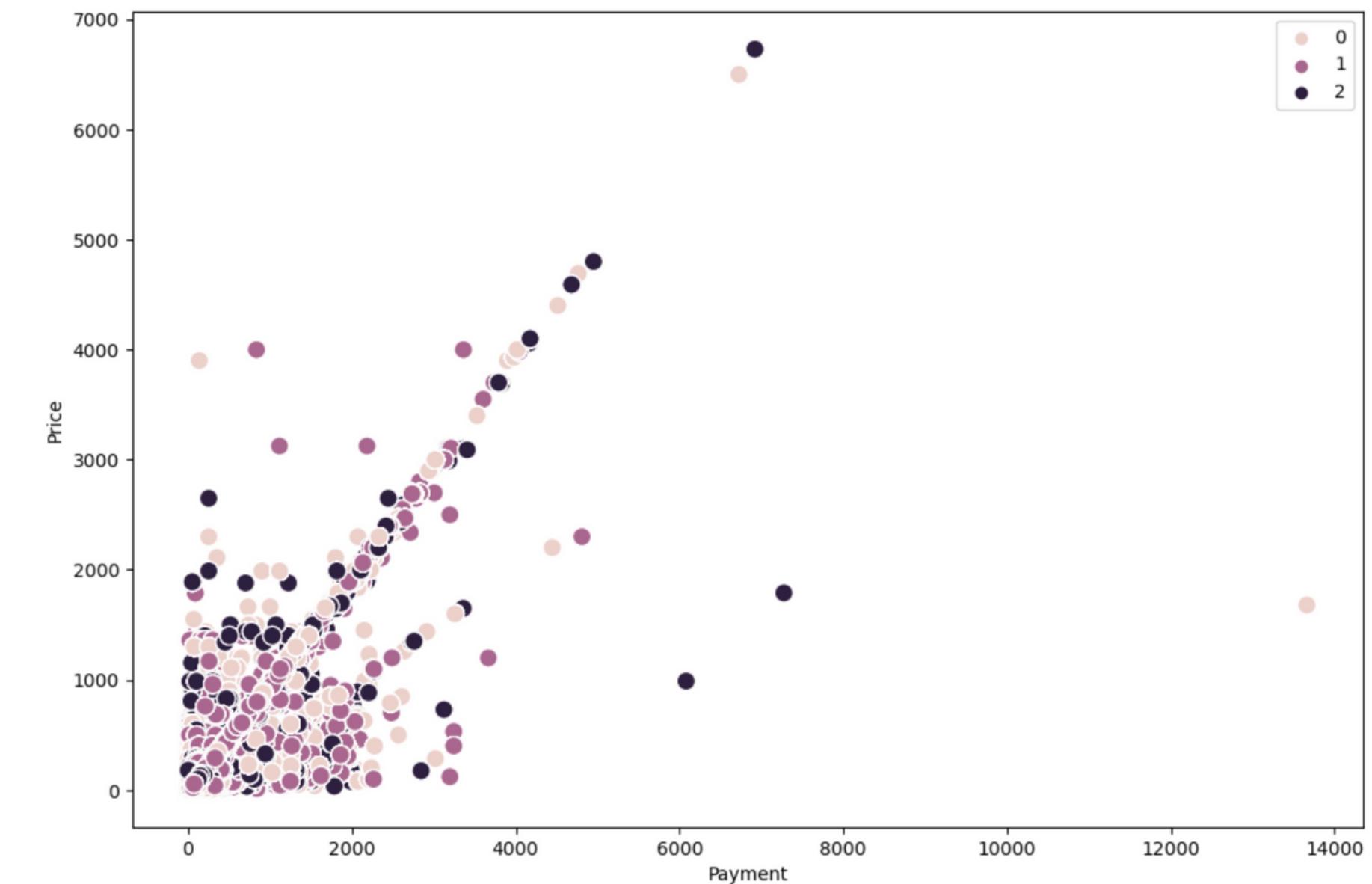
Minas Gerais, São Paulo, and Rio de Janeiro are the most populous states in Brazil.

Cluster Analysis

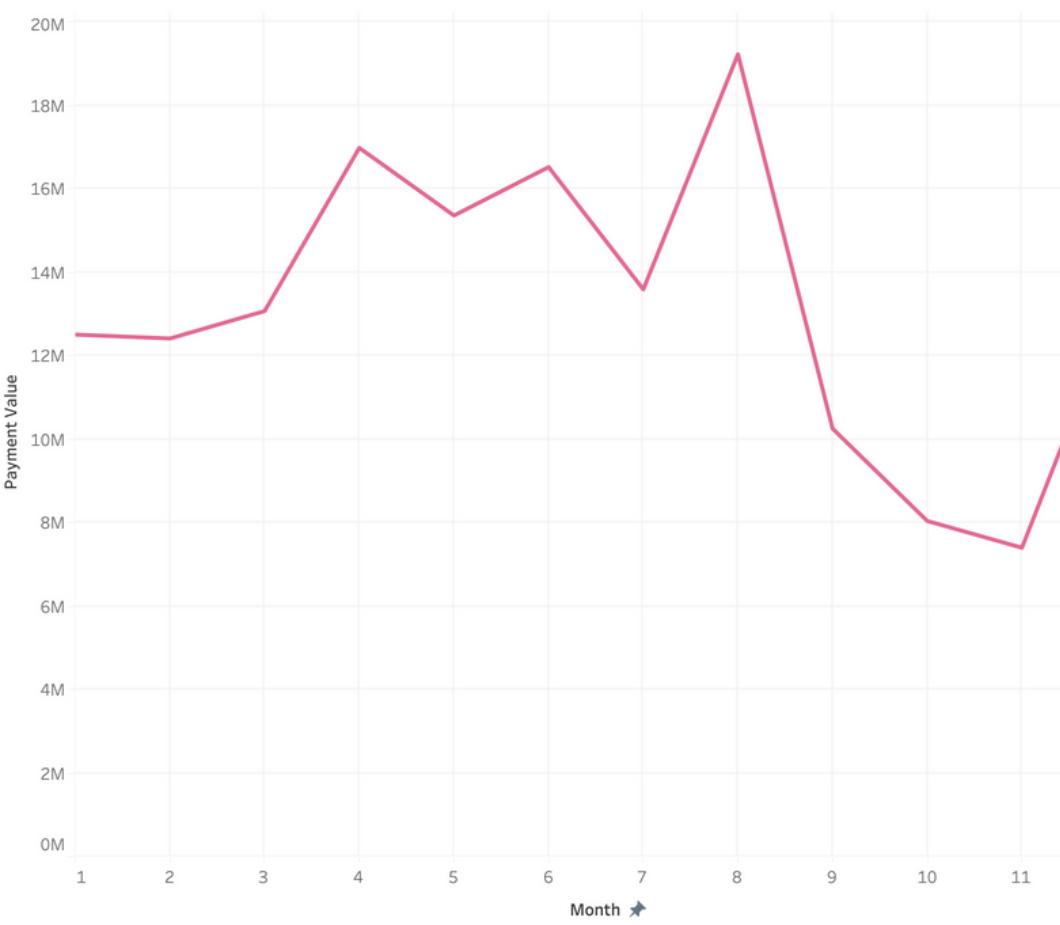


Payment Value and Zip Code were divided into three distinct categories.

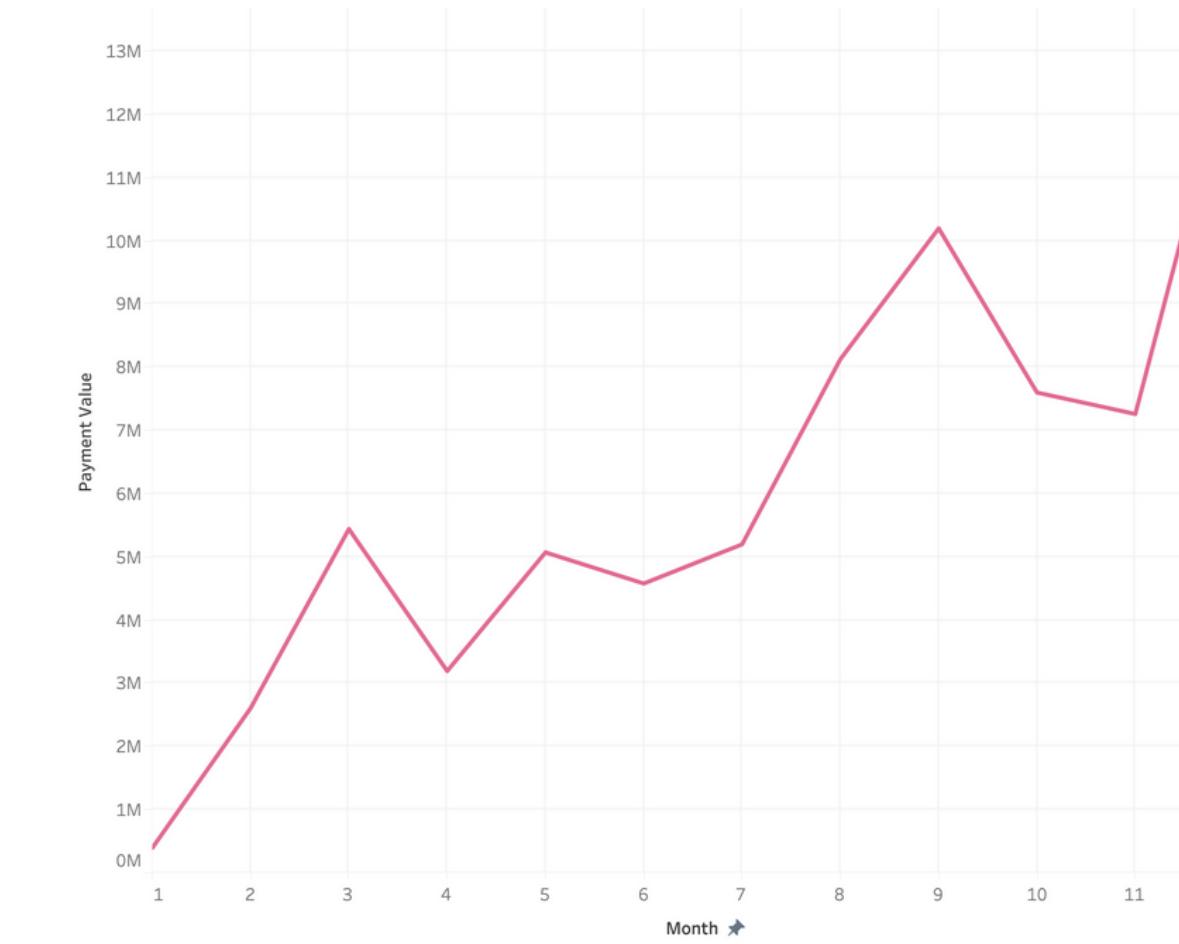
When comparing the payment value , the resulting cluster lacked clear distinctions and did not provide meaningful insight.



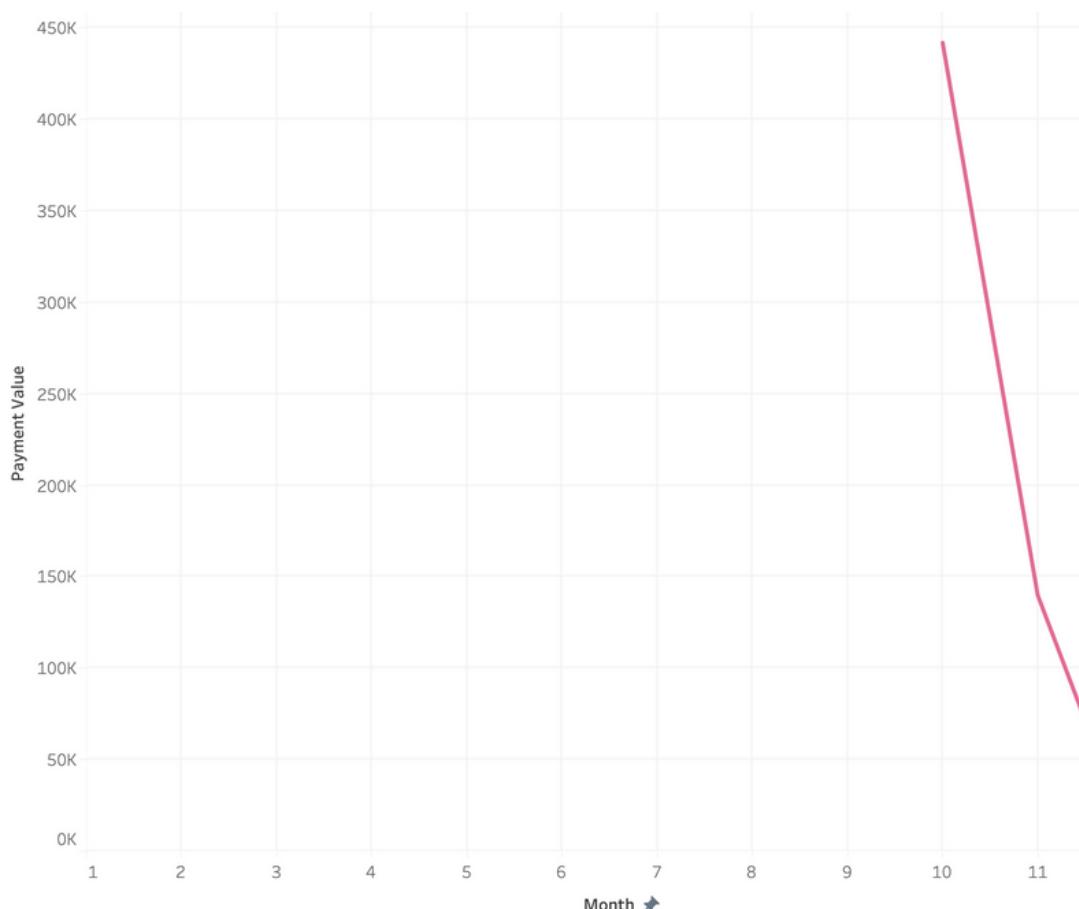
Monthly Payment Value by Year



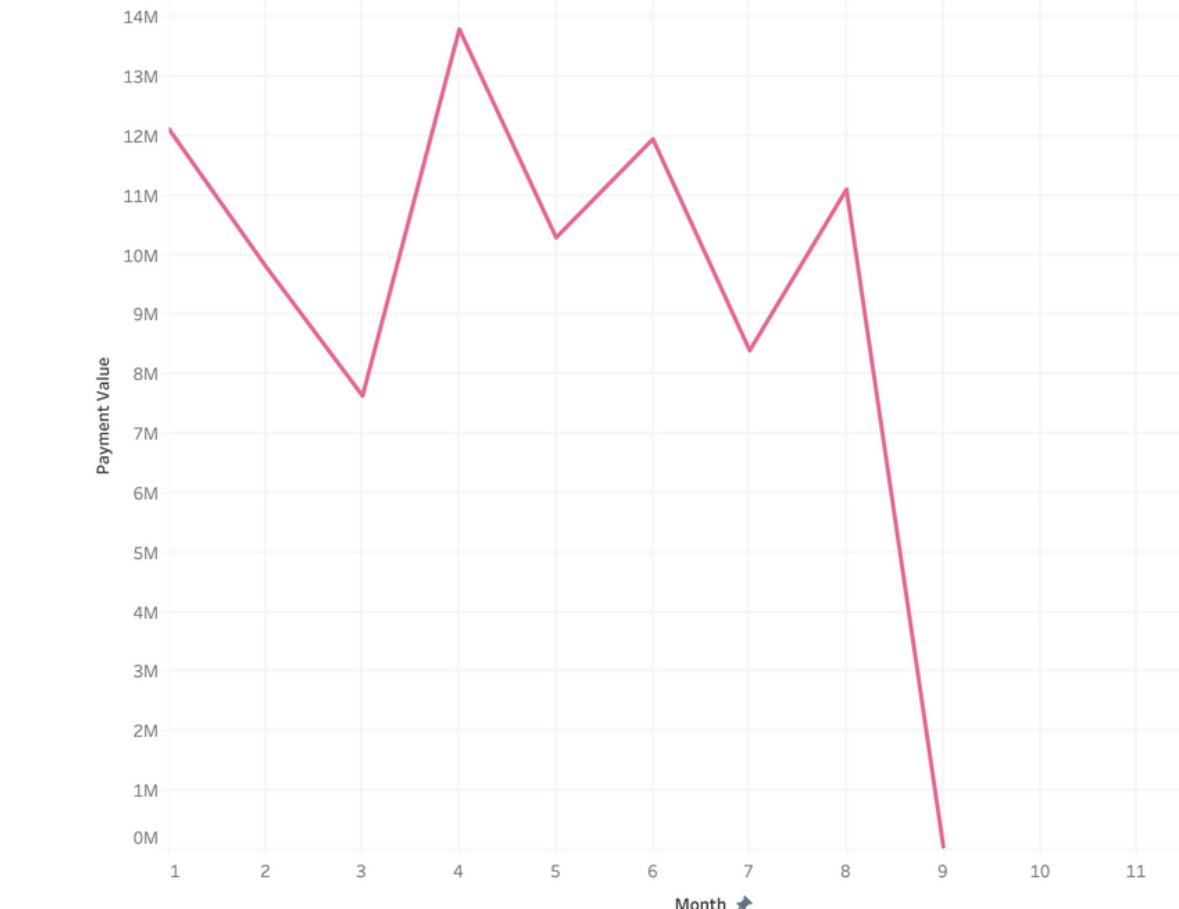
All years combined



2017



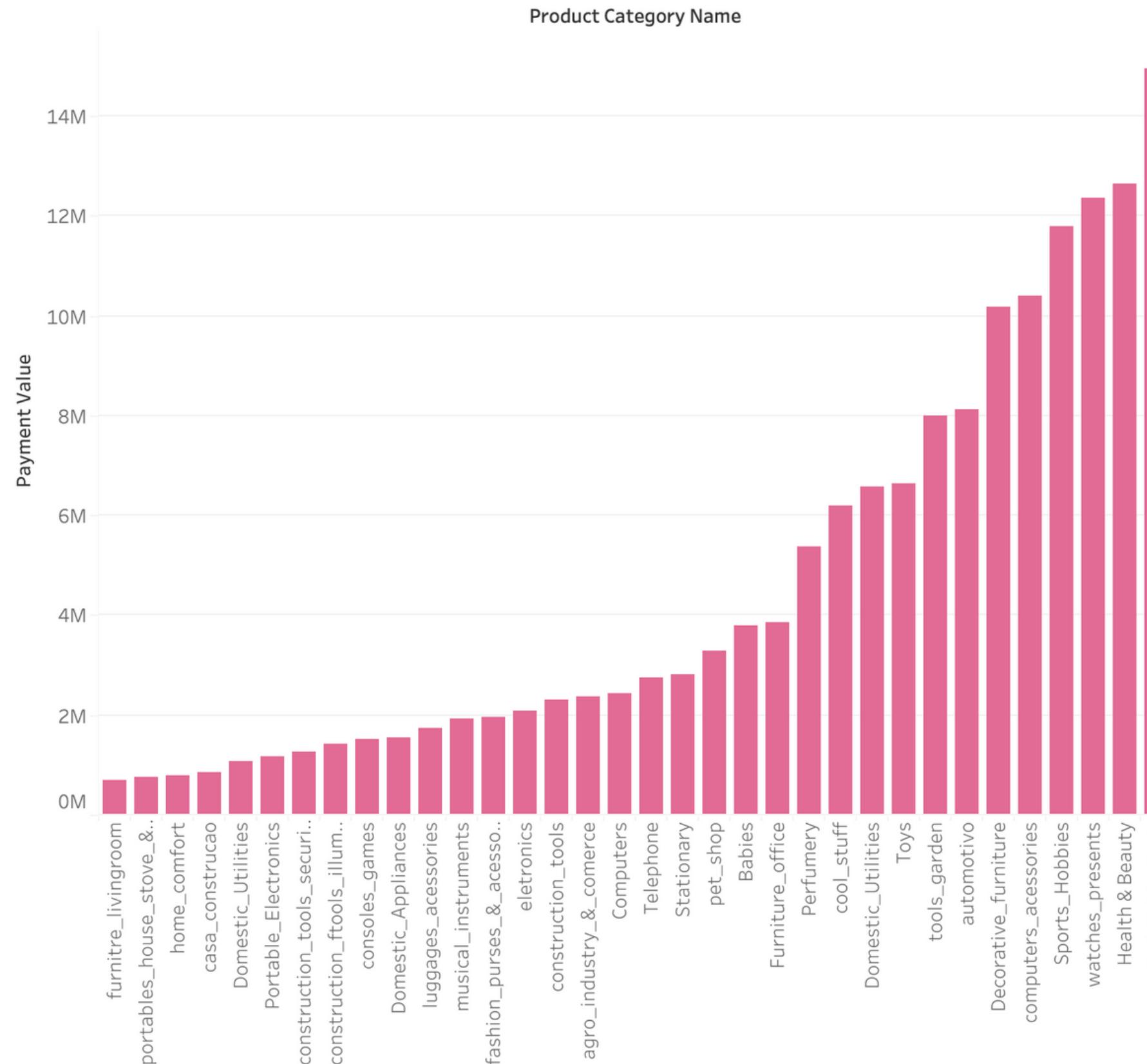
2016



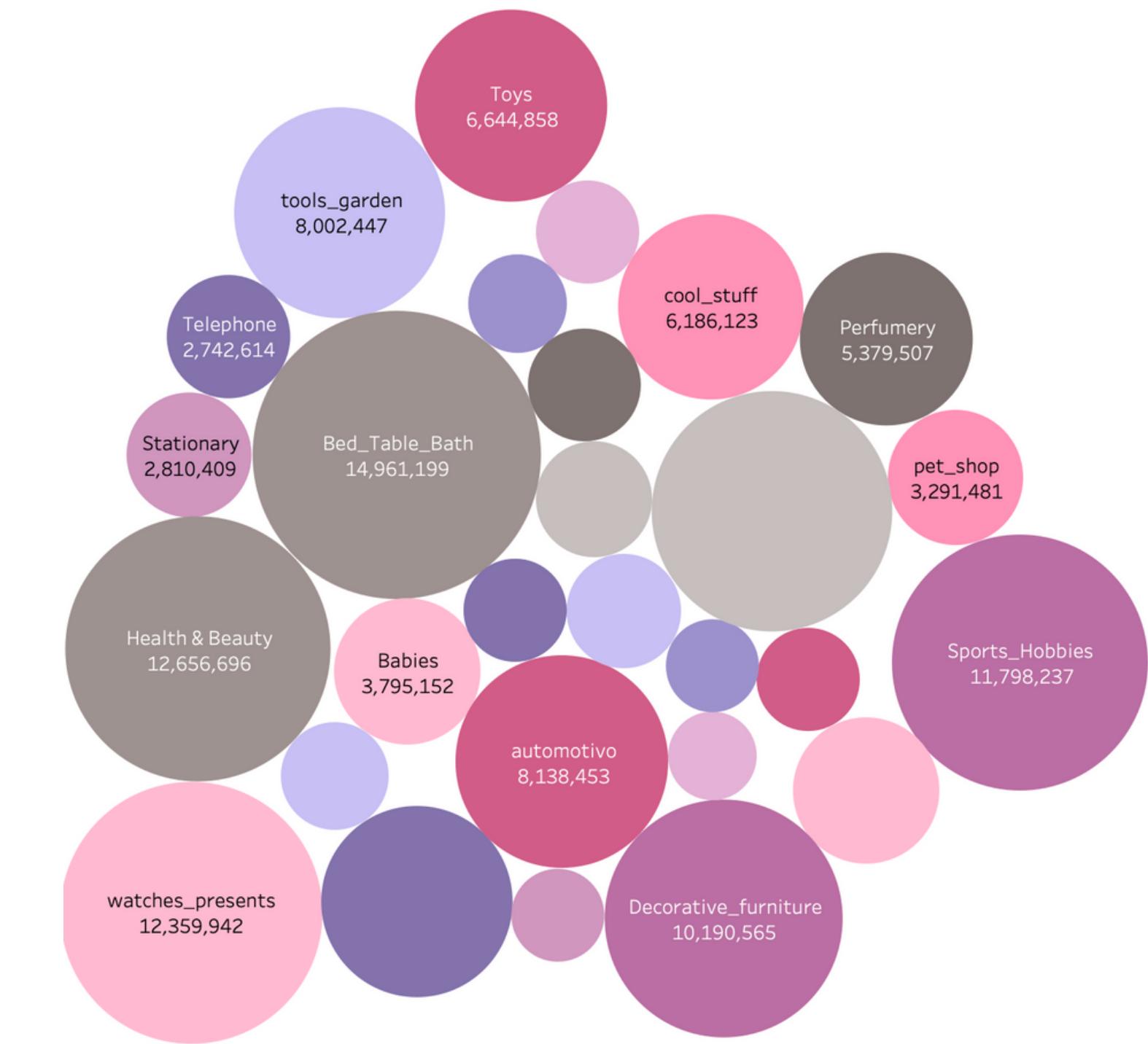
2018

August was the most successful month in all years combined.

Analysis



The product category Bed_Table_Bath has the highest sales in the combined years 2016-2018.



Insight

Data Collection

- Expand data collection and analysis beyond 2018
- Gather marketing data to evaluate marking strategy effectiveness.

Product

- The most popular category was domestic utility.
- The highest revenue was generated by the Bed_Table_Bath.

Consumer

- Minas Gerais, Sao Paulo, and Rio de Janeiro emerge as the states with the highest generated payment values.
- August was the highest revenue month.

