DATA ANALYTICS PORTFOLIO

Tiziano Chiaromonte

Tools

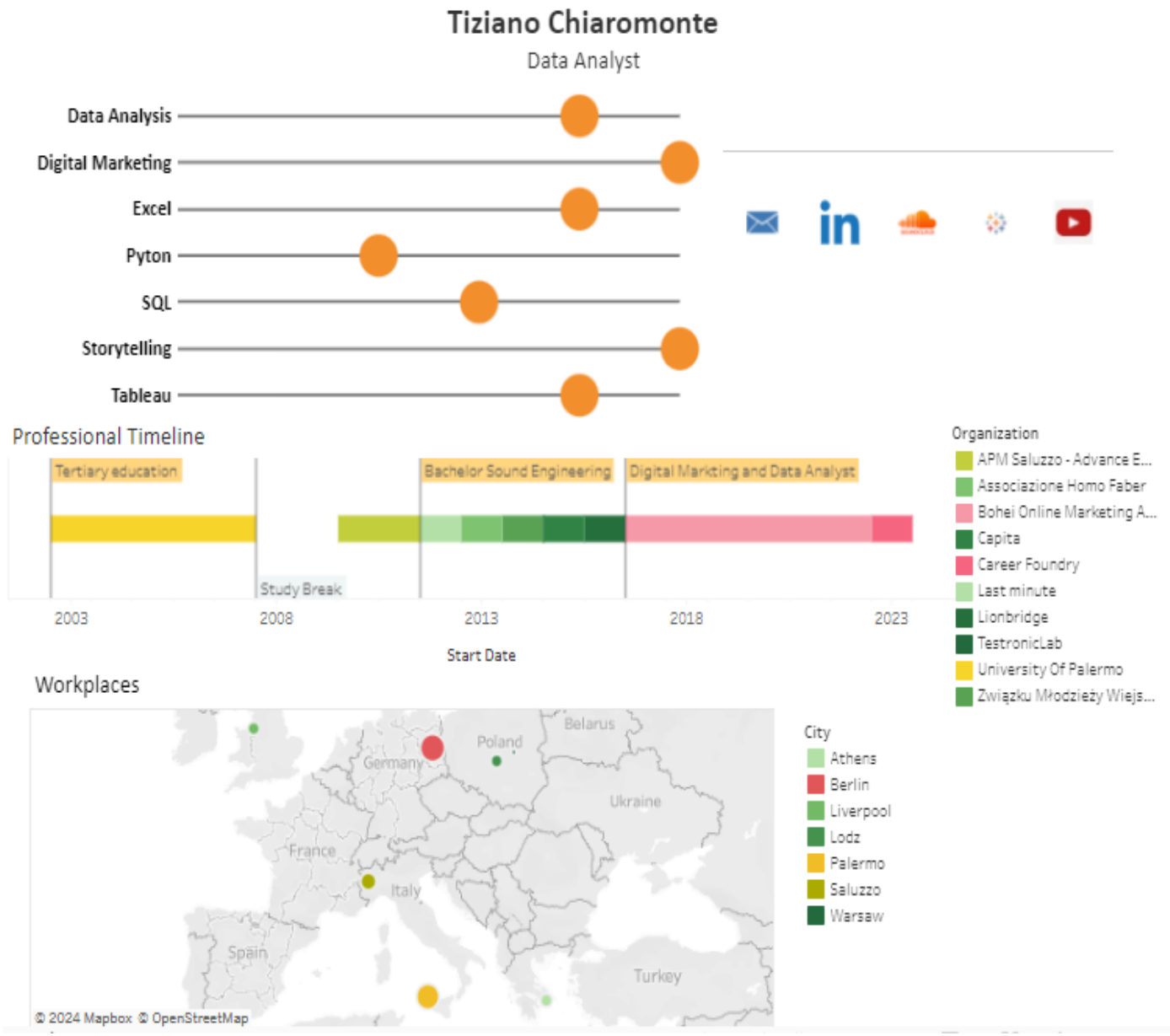
Feel free to have a look:

Tableau YouTube Linkedin

My CV on Tableau

Experienced digital marketing leader with a specialization in data analysis. Used to work with Python, R, SQL, Excel, and visualization tools. Combines marketing expertise with analytical skills to derive actionable insights and drive business growth through data-driven strategies.

Full resolution [HERE]



PROJECTS

1

Gaming Industry

Game Co

Global market analysis of video game sales
Excel | PowerPoint

2

Medical Staffing

Influenza Preparedness

Forecasting trends for Seasonal Flu. Where to send staff
Excel | PowerPoint |Tableau

3

Online video streaming industry

Rockbuster Stealth LLC

Movie rental market analysis
Excel | PowerPoint | Tableau | PostgreSQL | SQL

4

On-demand Grocery Delivery

Instacart

Market analysis to reveal trends sales
Excel | Anaconda | Python | Jupyter

5

Banking

Pig E. Bank

Customer behavior analysts
Excel | PowerPoint | GitHub

PROJECTS

6

Climate Change: Earth Surface Temperature Data from

Berkeley Earth

Study of Earth Surface Temperature Data

Excel | Anaconda | Python | Colab
Tableau | PowerPoint
Python scientific stack is used to simplify all implementations - NumPy, Pandas, SciPy, Seaborn, Matplotlib

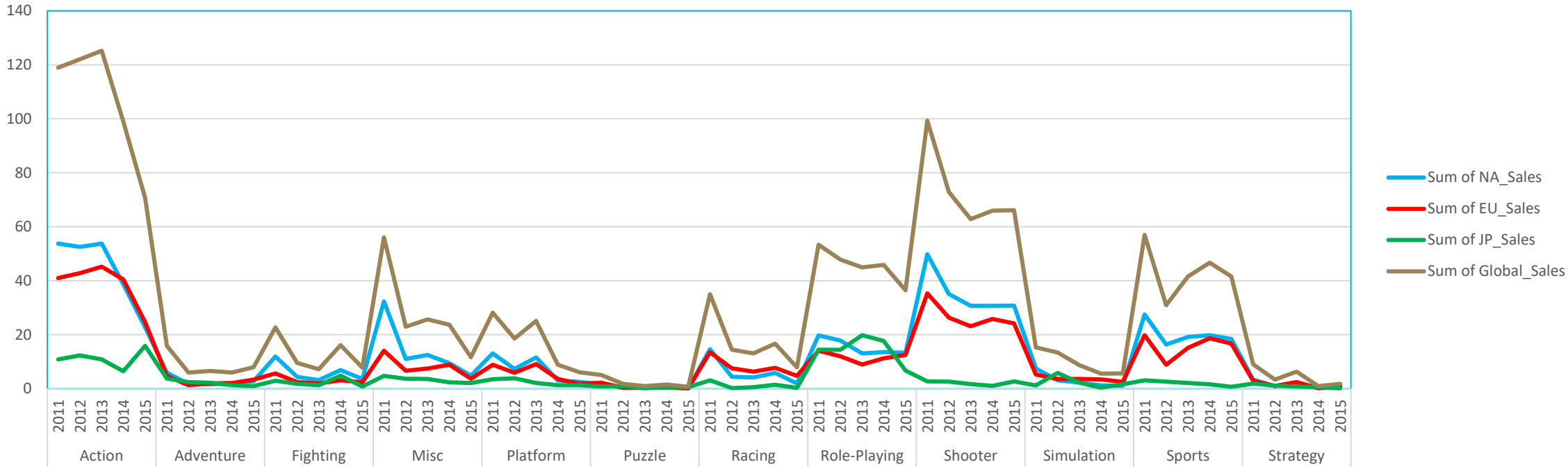
Game Co - Gaming Company

Key Tasks:

- Data Cleaning
- Data Grouping and Summarizing
- Descriptive Analysis
- Pivot Tables
- Visualization in Excel/PowerPoint

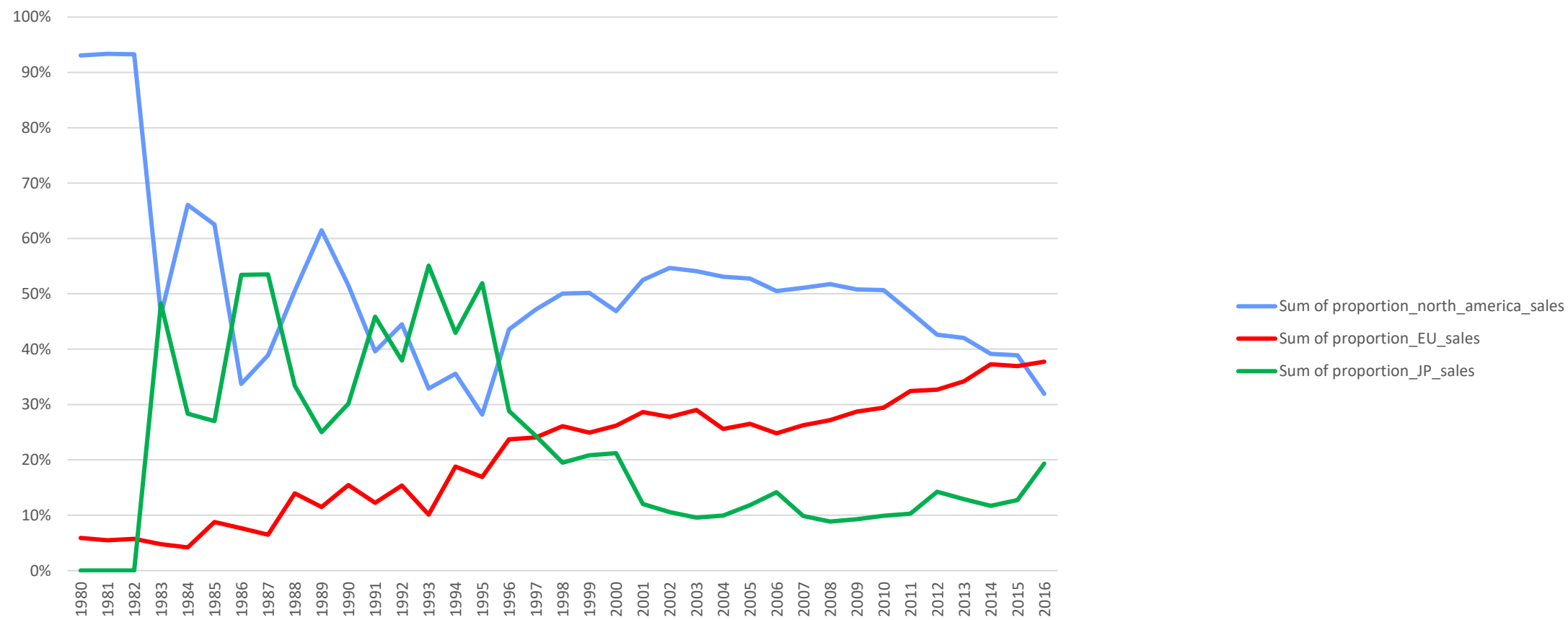
Introduction: GameCo is a global entity operating in various markets, providing a wide array of games for both sale and rental across different categories.

Objective: Analyze regional sales trends to facilitate informed decision-making.



The most sold genres across different markets from 2011 to 2016.

Analysis & Insights: The sales data analysis spans multiple regions including Japan, Europe, and North America, covering various years. Europe demonstrates consistent growth, while North America and Japan exhibit fluctuating sales patterns, highlighting the need for strategic budget reallocation tailored to each region's unique demands. The curves of the Japanese and North American markets mirror each other.



Insights

In conclusion, considering the trend that positions Action as the most popular genre worldwide, the EU emerging as the new top market, and Japan rapidly growing, we need to focus on several key points:

- Supporting the top market (EU) with targeted marketing actions, while simultaneously fostering the growth of the Japanese market with similar strategies.
- Understanding why the North American market has lost its dominance and identifying any shortcomings in promotion, launch, and sales processes in that region.
- Supporting the Shooter genre in North America, as it still holds the largest market share there and can act as a catalyst for the same genre in other markets.
- Lastly, from our previous analysis, it is evident that the Japanese market has the potential to soon become the largest global market. It would be wise to be prepared for this possibility by undertaking marketing actions to ensure we will be ready.

Analysis and Implications

Recommendations:

1. Investigate age groups to discern genre preferences.
2. Examine causes of sales volatility.
3. Implement targeted advertising with cultural elements.
4. Evaluate the impact of game series on platforms like Netflix.
5. Consider ethical marketing practices, especially for violent games.
6. Explore investment in diverse game categories.
7. Assess population counts relative to the gaming market in each region.
8. Analyse the origin of sales in relation to population density.

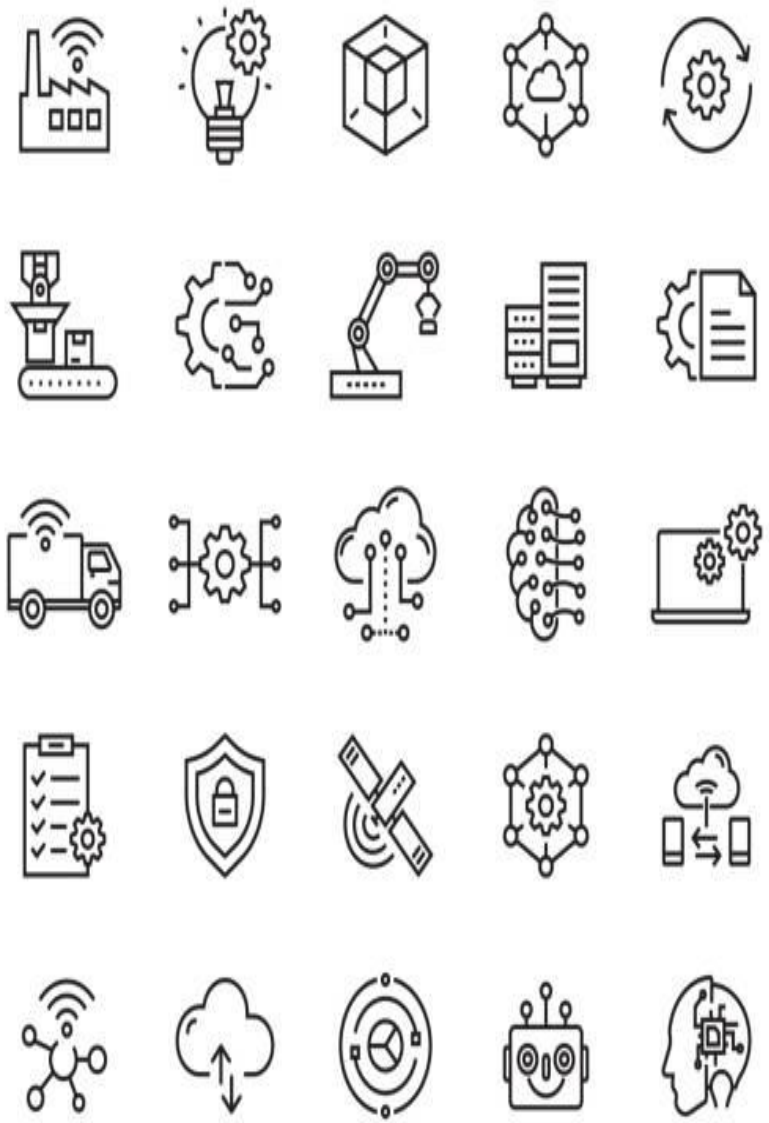
Influenza Forecasting - Health Industry

Objective: Support a medical staffing agency by analysing influenza trends to optimize staffing during peak seasons, particularly for older adults over 65.

Key Tasks:

- Data Cleaning, Integration & Transformation
- Statistical Hypothesis Testing
- Visual Analysis
- Forecasting
- Storytelling with Tableau

- **Tools**:
- Excel
- Tableau
- Power Point



Development:

To prepare for the upcoming influenza season and effectively allocate resources to protect vulnerable populations, such as those aged 65 and older, a comprehensive analysis has been made. This is the approach of the study:

Data Collection and Analysis:

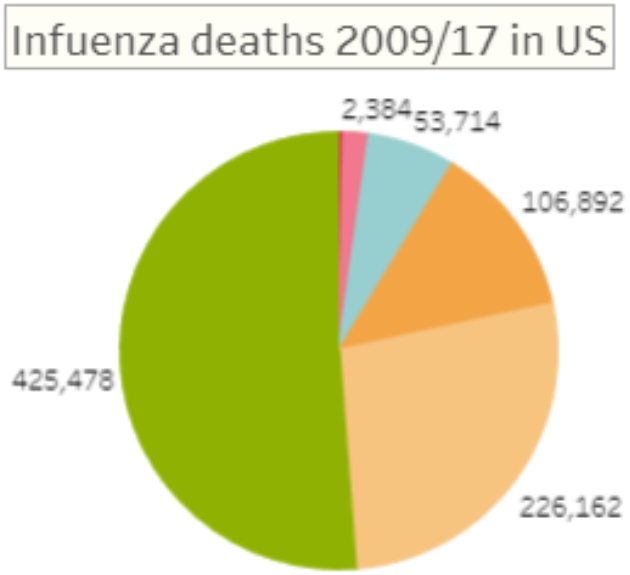
Gathering historical data (2009/2017) on influenza outbreaks, including the geographic spread: the goal is to identify the regions with higher incidence rates.

I formulated a hypothesis that more the population of a single State is bigger, more case of death for flu we'll face. This Hypothesis has been confirmed by our analisys.

Temporal patterns: Determining peak months and duration of influenza seasons.Demographic information: I analyzed age-specific infection rates, particularly focusing on the elderly population (65+).

Identify High-Risk Areas: Based on historical data and analysis, regions with a high prevalence of influenza have been pinpointed.

Forecasting:I used predictive modelling to forecast the severity and timing of the upcoming influenza season.I incorporated data on seasonality into forecasting models.



Influenza impacts the US by causing widespread illness, hospitalizations, and fatalities, resulting in economic burdens and strain on healthcare infrastructure.

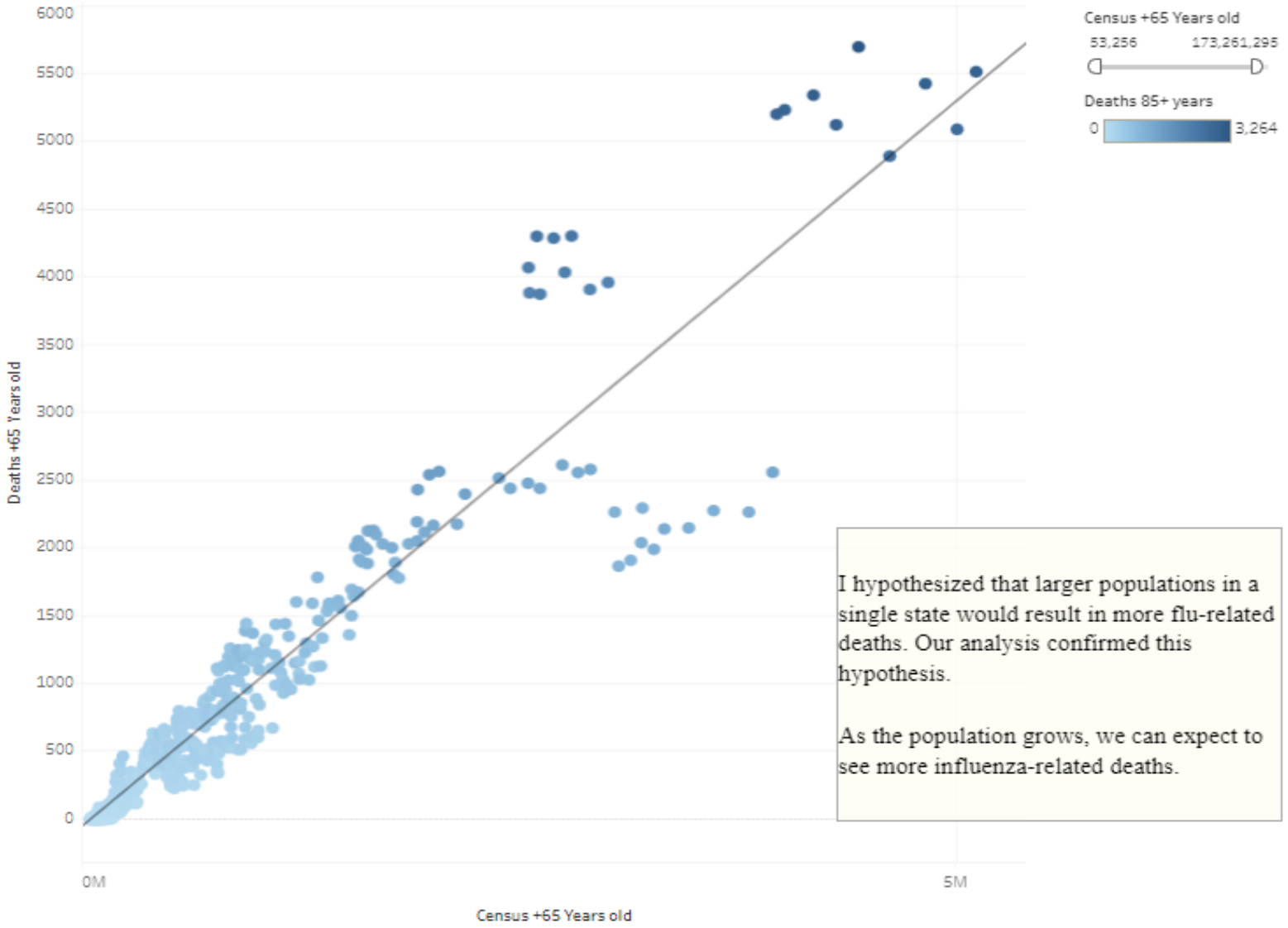
This chart clearly illustrates which age group is threatened by influenza. We need to particularly protect the vulnerable population aged 65 and older.

Valori misure

830,838

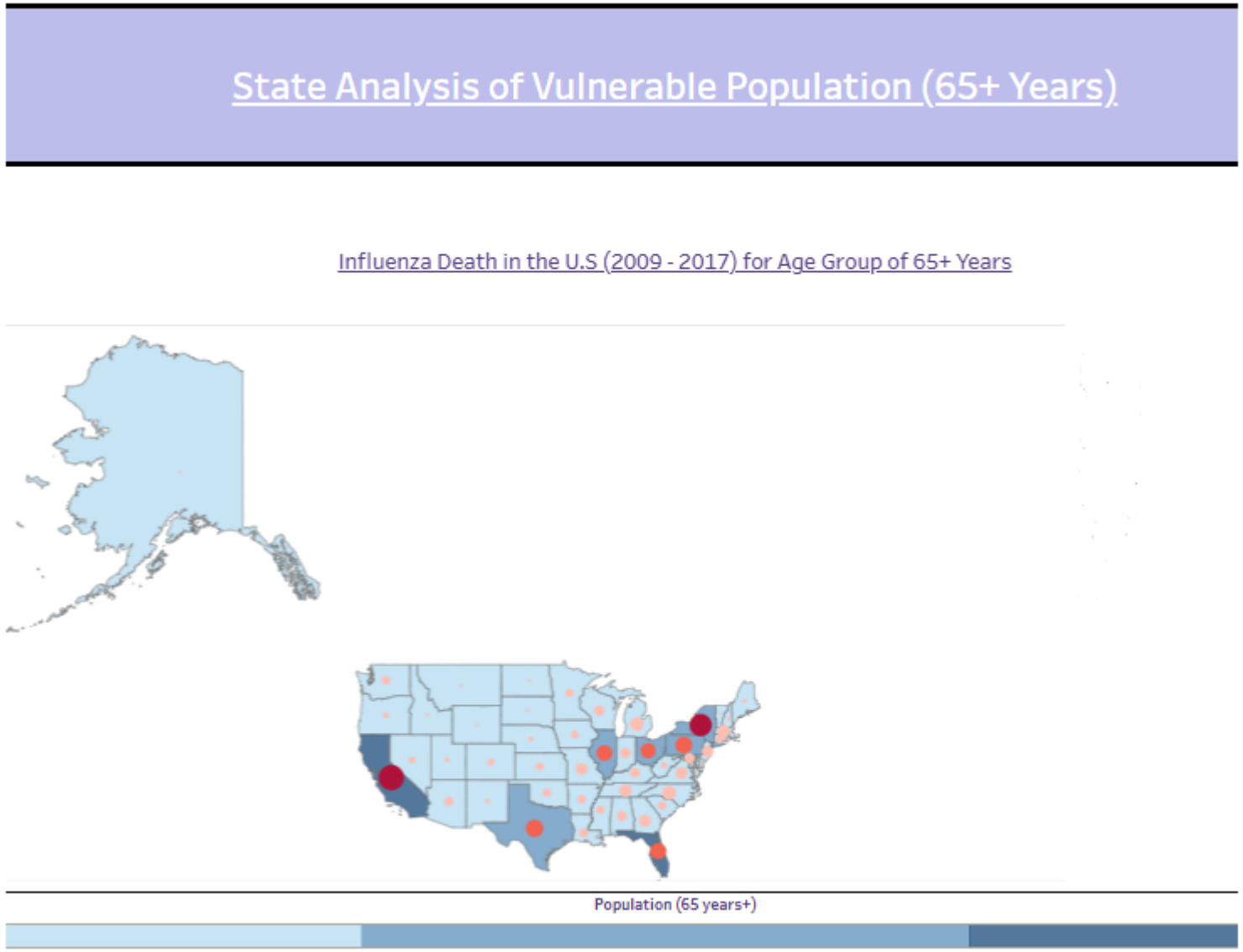
Nomi misure

- Deaths Under 5 years
- Deaths 5-14 years
- Deaths 15-24 years
- Deaths 25-34 years
- Deaths 35-44 years
- Deaths 45-54 years
- Deaths 55-64 years
- Deaths 65-74 years
- Deaths 75-84 years
- Deaths 85+ years



I hypothesized that larger populations in a single state would result in more flu-related deaths. Our analysis confirmed this hypothesis.

As the population grows, we can expect to see more influenza-related deaths.



Where to send staff

AGE GROUP 65+ SHOULD BE PROTECTED FIRST

Results:

Resource Allocation:

Allocate healthcare resources, including medical staff, vaccines, antiviral medications, and personal protective equipment (PPE), to areas expected to experience high influenza activity.

Prioritize hospitals and healthcare facilities serving communities with a significant elderly population.

Evaluation and Adaptation:

Continuously evaluate the effectiveness of intervention strategies through surveillance data and epidemiological analysis. Adapt response plans based on emerging trends, changes in influenza strains, or unforeseen challenges.

By following these steps and conducting a thorough analysis of influenza data, public health authorities can better prepare for the upcoming influenza season and protect vulnerable populations, including individuals aged 65 and older, against the virus.

For the complete Analysis click here: Tableau

Rockbuster Stealth - Film Industry

Objective: Compete with streaming giants like Netflix and Amazon Prime by leveraging existing movie licenses for an online video rental service.

Key Tasks:

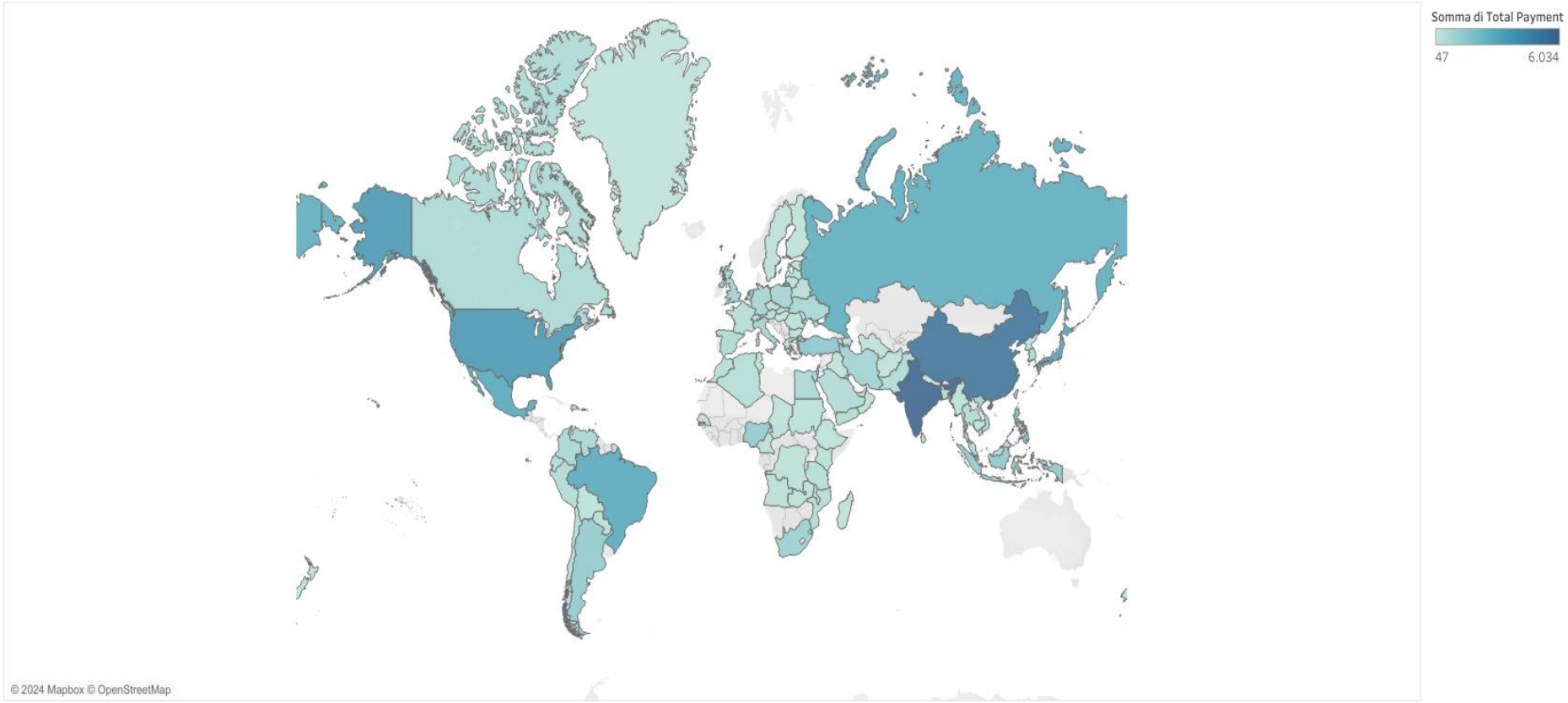
- Relational Databases
- SQL Queries
- Data Filtering, Cleaning & Summarizing
- Common Table Expressions

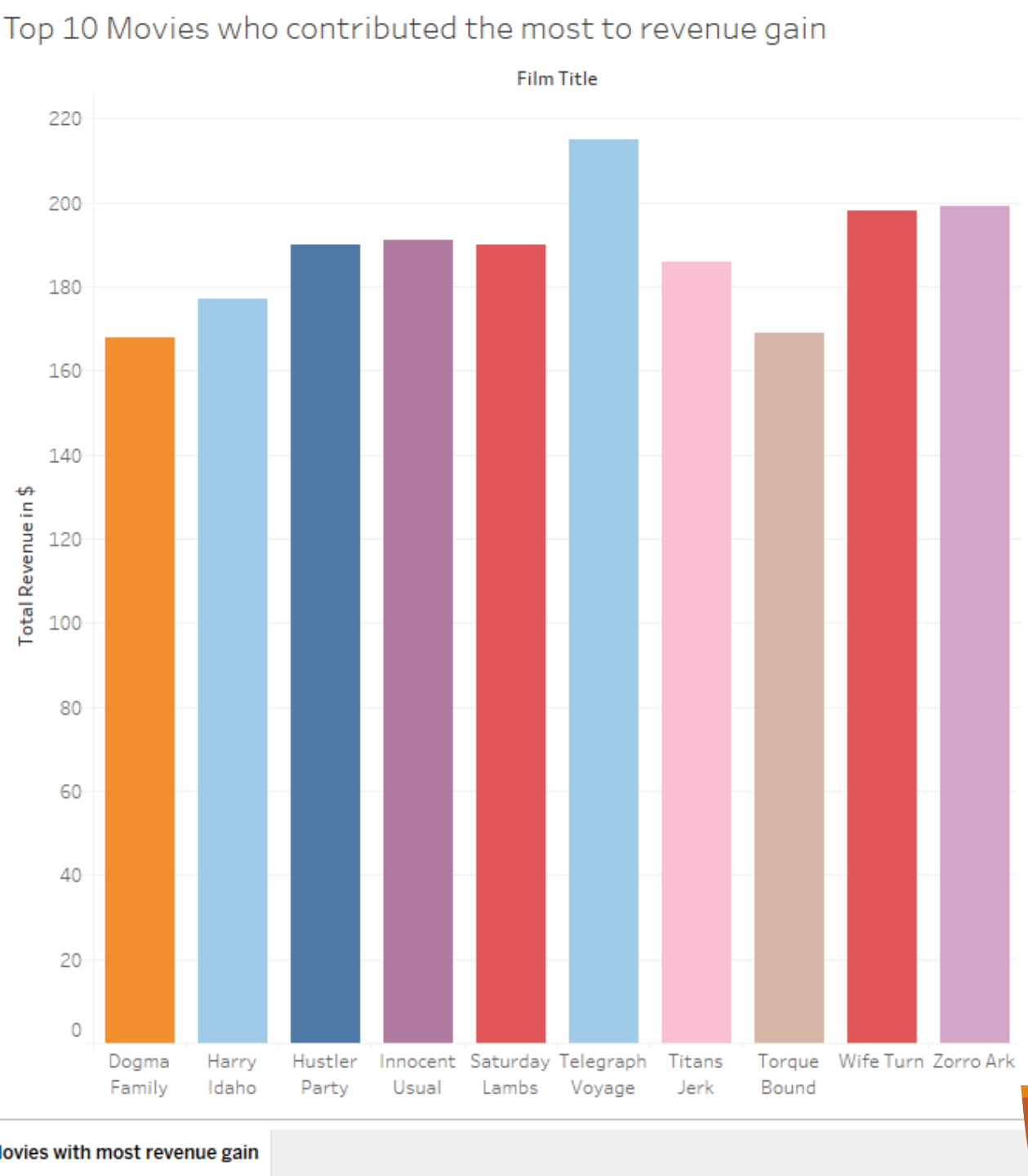
Tools:

- Excel
- Power Point
- pgAdmin 4
- SQL
- Anaconda
- Tableau

Introduction: Rockbuster Stealth LLC operates globally with physical stores.
Analysis & Insights: Revenue analysis across countries and cities, coupled with diverse ratings and genres, emphasizes the need for a varied movie selection to maximize revenue and cater to diverse viewer preferences.
Top Revenue-Generating Countries: India, China, United States, Japan, Mexico.

Rockbuster's revenue per country

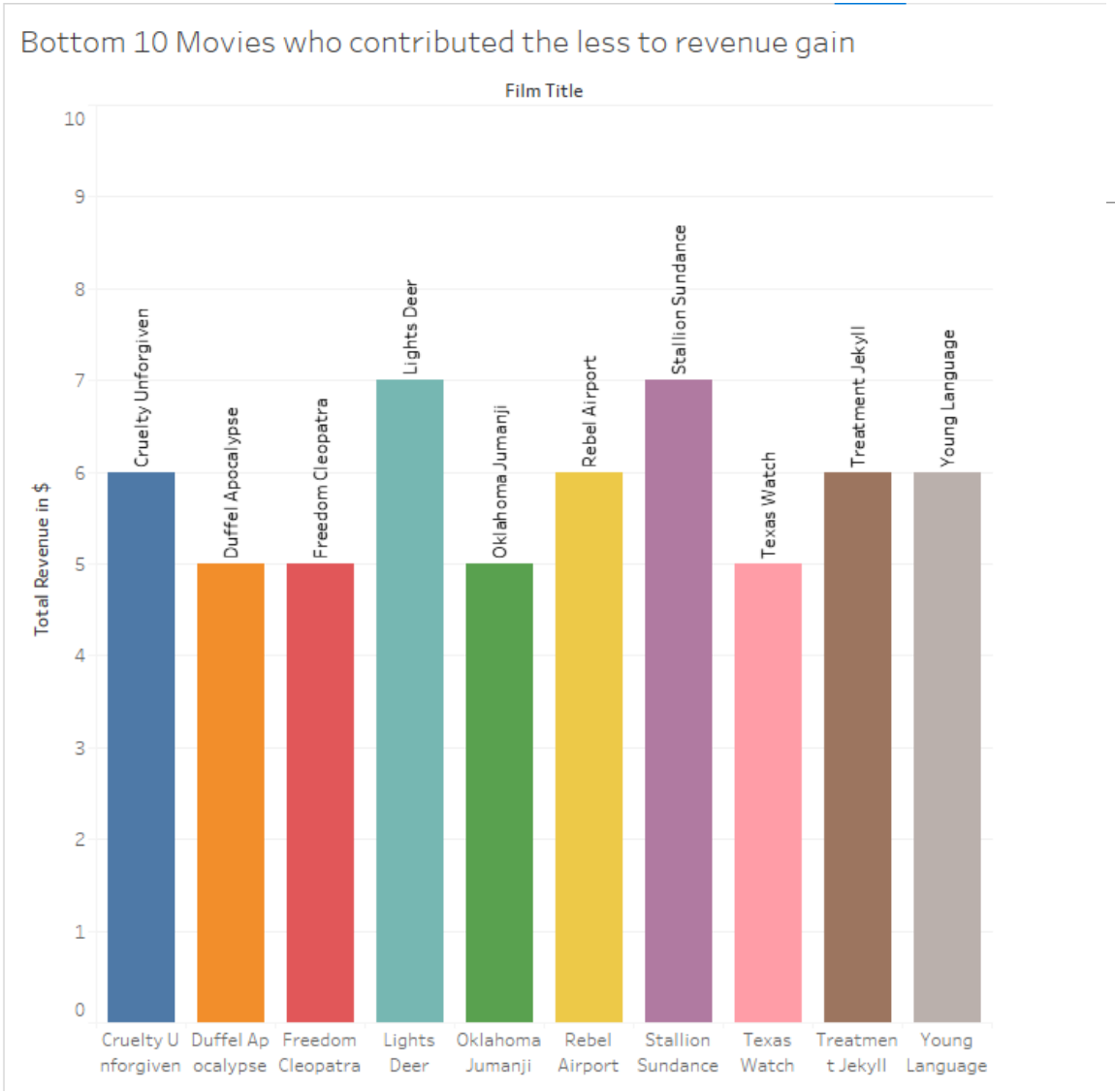




Which movies contributed the most to revenue gain?

- The top three movies generating the most revenue are "Telegraph Voyage," "Zorro Ark," and "Wife Turn"

Link Tableau

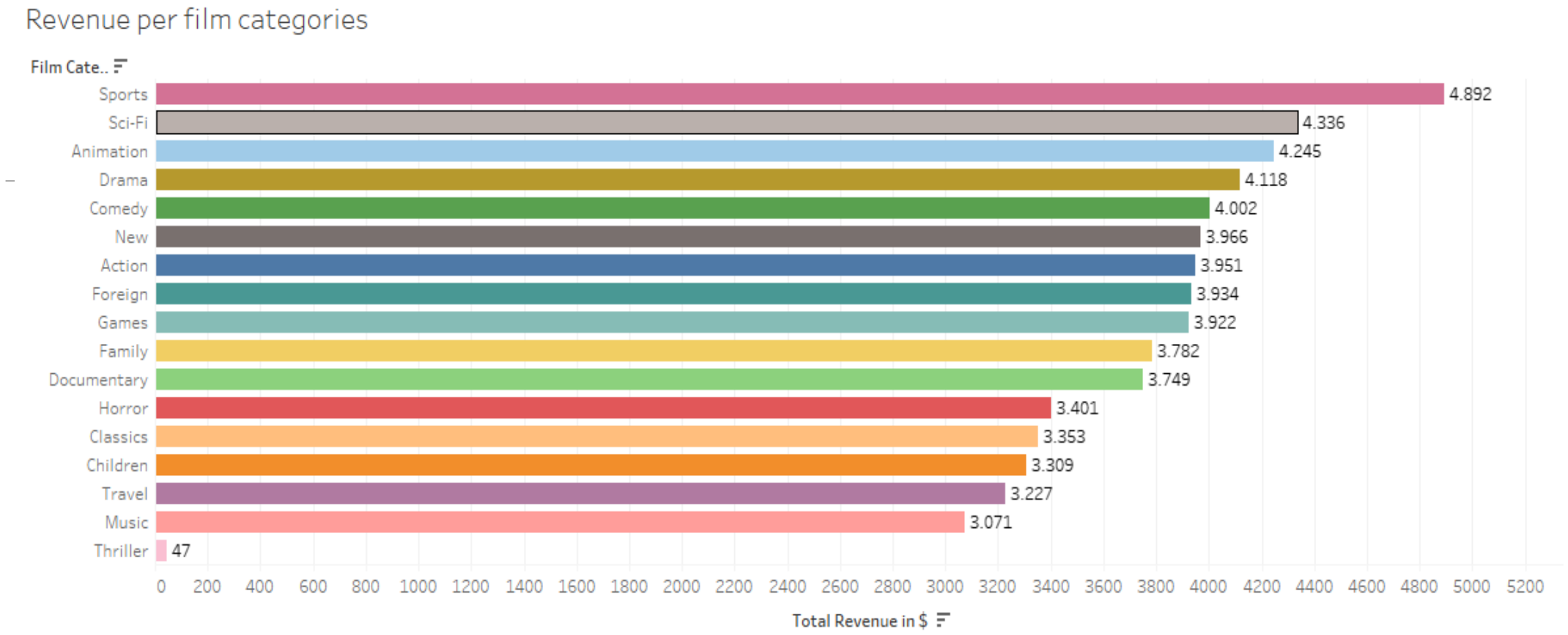


Which movies contributed the less to revenue gain?

- This is the top 10 of the movies with less revenue gain.

- The bottom 3 are : Texas Watch, Oklahoma Jumanji and Duffel Apocalypse with $5,94 gained

[Tableau link]



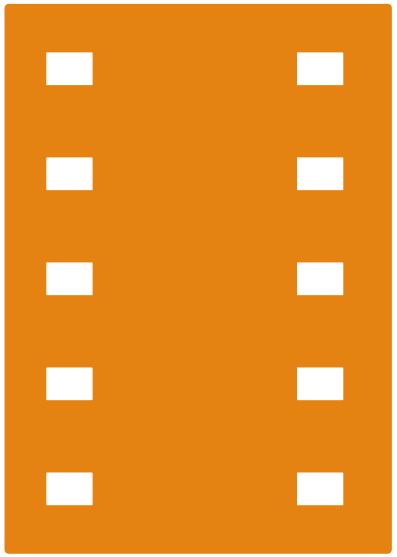
[Tableau Link]

The top three categories with the highest revenue gains are Sport, Sci-Fi, and Action.

Analysis and Implications

Recommendations:

1. Implement predictive analytics for inventory optimization.
2. Explore market expansion in high engagement and revenue regions.
3. Adjust movie selection based on genre preferences among customer segments.
4. Integrate data from various sources for comprehensive market insights.
5. Analyse seasonal variations in movie preferences for optimized inventory and promotions.
6. Develop strategies to counter streaming service competition through partnerships and enhanced content offerings.

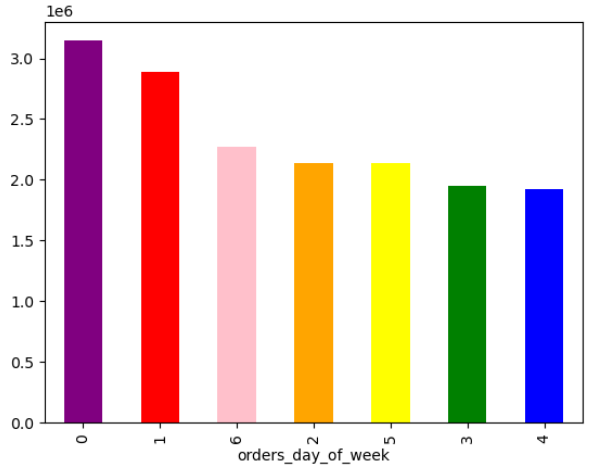


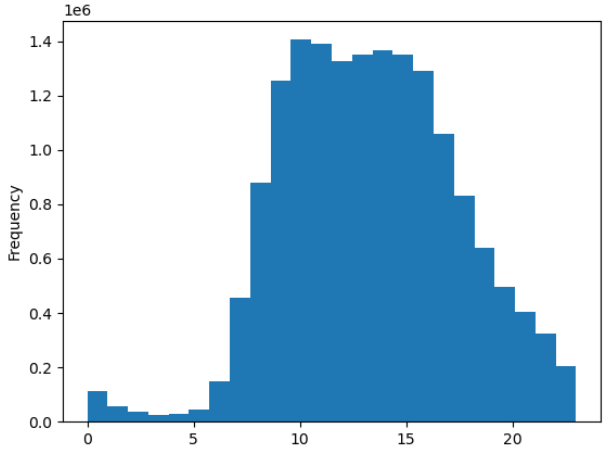
Instacart Basket - Online Grocery Shop

Objective: Enhance product sales through a deeper understanding of customer diversity and purchasing behaviours for targeted marketing strategies.

Key Tasks:

- Python Programming
- Data Wrangling and Merging
- Variable Derivation
- Dataset Grouping
- Data Aggregation
- **Tools:**
- Excel
- Power Point
- pgAdmin 4
- SQL
- Anacond
- Tableau

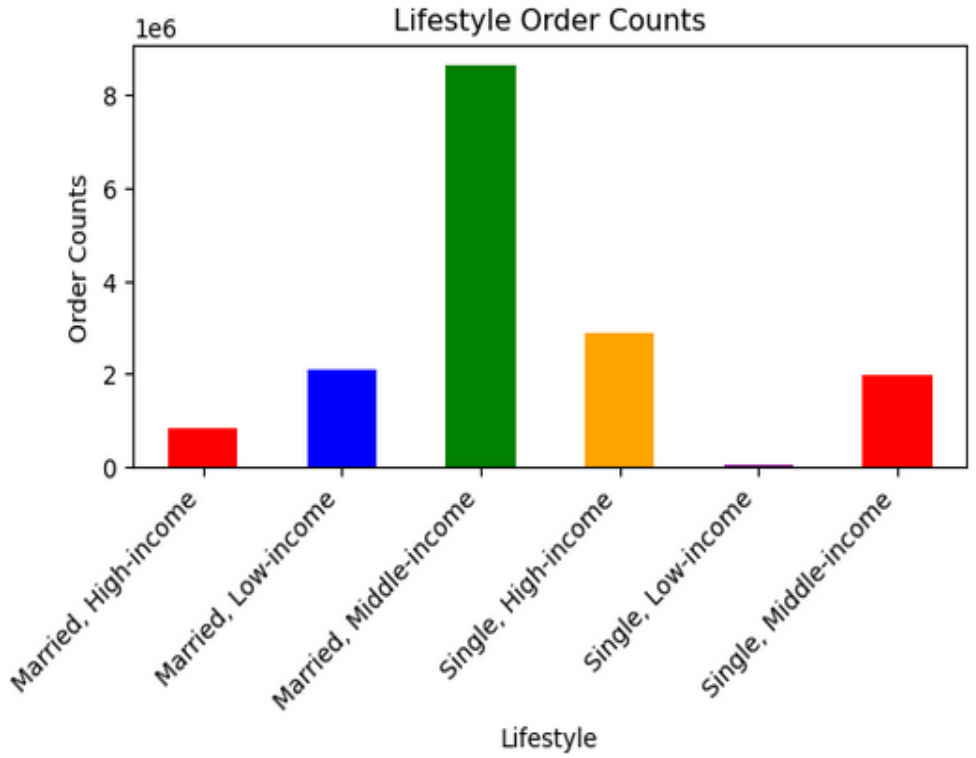


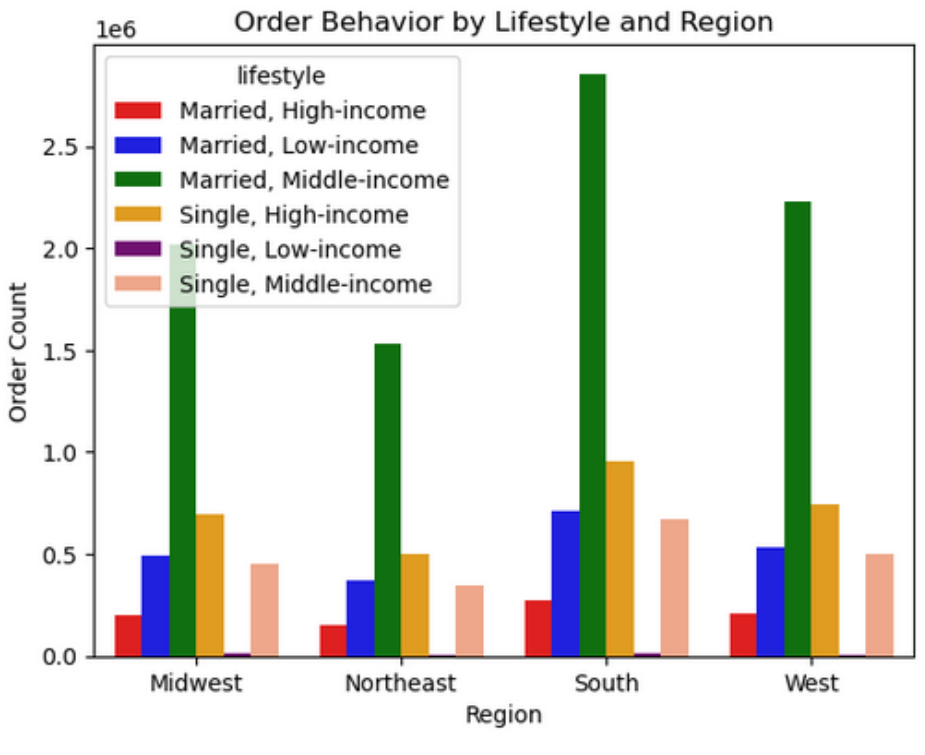


Introduction: Instacart aims to gain insights into sales patterns to propose better segmentation strategies.

Analysis & Insights:

- **Peak Days**: Saturday and Sunday are the busiest.
- **Peak Times**: 9 am - 5 pm, with higher spending between 8 pm - 11 pm.
- **Customer Segmentation**: Regular customers outnumber others, with a consistent distribution across age groups. Majority are categorized as 'low spenders.'





Habits and Behavior of Customers for Region and Lifestyle

Analysis and Implications

Recommendations:

1. Creating low, mid, and high price groupings can help to have a better insight.
2. Marketing efforts in the Northeast can be increase.
3. Schedule ads during off-peak hours (5pm-8am) and on low-sales days (Tuesday/Wednesday).
4. Developing loyalty programs for frequent orders can be a boost.
5. Investigate and promote high-range products more effectively.
6. Focus marketing on weekends and peak hours.

Pig E. Bank - Finance

Objective: Understand customer attrition factors to reduce churn and support anti-money-laundering compliance efforts.

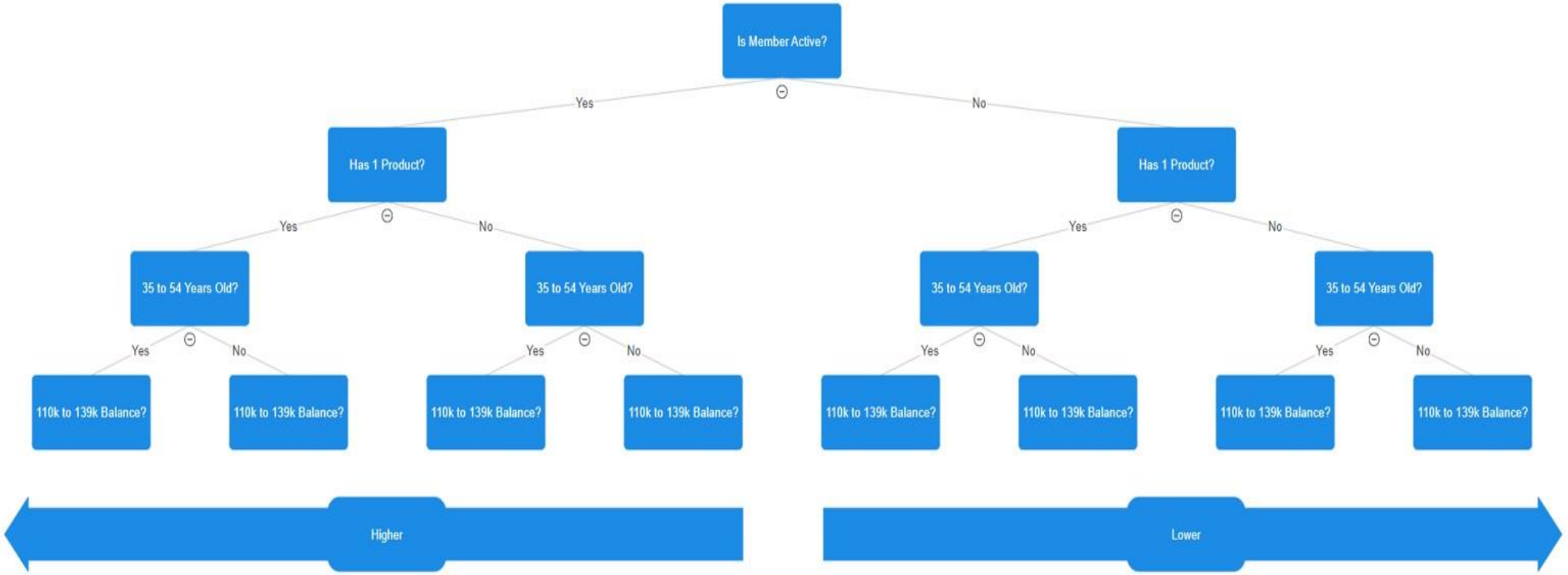
Key Tasks:

- Handling Big Data
- Data Ethics
- Data Mining
- Predictive Analysis
- Time Series Analysis
- **Tools**:
- Excel
- Power Point
- Git Hub

Introduction: Pig E. Bank seeks to gain insights into customer attrition and provide analytical support for compliance.

Key Question: What are the leading factors that contribute to client loss?

Will a Customer Leave the Bank?



Customers aged 25-44 are most likely to leave. Customer with 1 product showing a high exit rate. A strong correlation between certain balance ranges and customer exits.

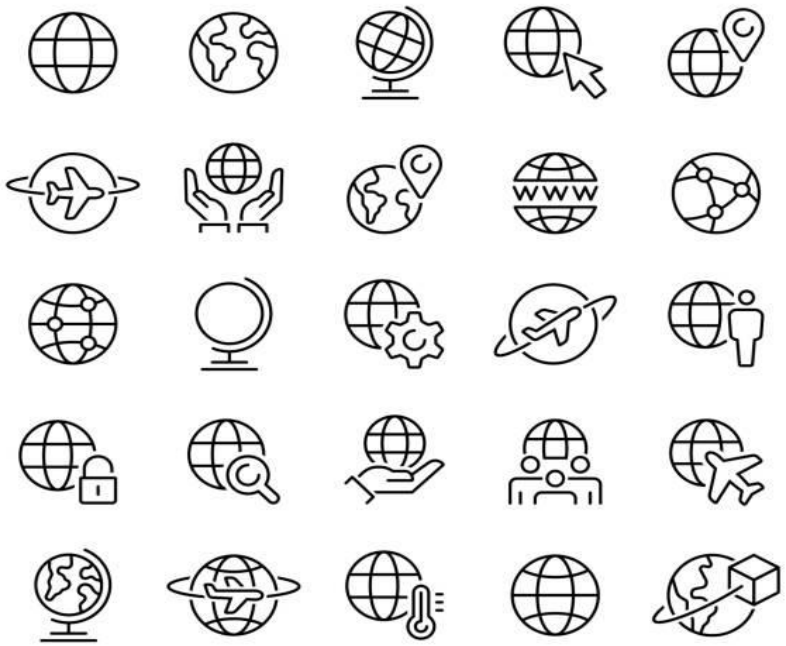
Analysis of Customer Churn Factors

1. **Non-active Members**: A significant portion (70%) of customer churn is due to non-active members.
2. **Single Product Subscription**: 70% of customers who left were signed up for only one product, indicating a lack of engagement with multiple bank services.
3. **Credit Score Issues**: 61% of those who churned had poor or fair credit scores, suggesting financial struggles or dissatisfaction with financial services.
4. **Gender Disparity**: Nearly 60% of customers who left the bank are female, highlighting a potential gender-related issue in customer retention.

Recommendations

1. **Enhance Communication**:
    1. Regularly update customers about new services, products, and benefits through targeted newsletters and other communication channels.
2. **Promotional Strategies**:
    1. Introduce time-limited promotions or discounts for new products and create attractive bundles to encourage the use of multiple services, providing added value for customers.
3. **Credit Score Support**:
    1. Identify customers with poor or fair credit scores early and offer tailored support and products designed to help them improve their financial health.
4. **Gender-Focused Research**:
    1. Conduct in-depth research to understand the specific needs, behaviors, and preferences of female customers to develop tailored strategies aimed at reducing churn in this demographic.

Climate Change: Earth Surface Temperature Data



Objective: Understand how temperatures are changing around the world over time.

Key Tasks:

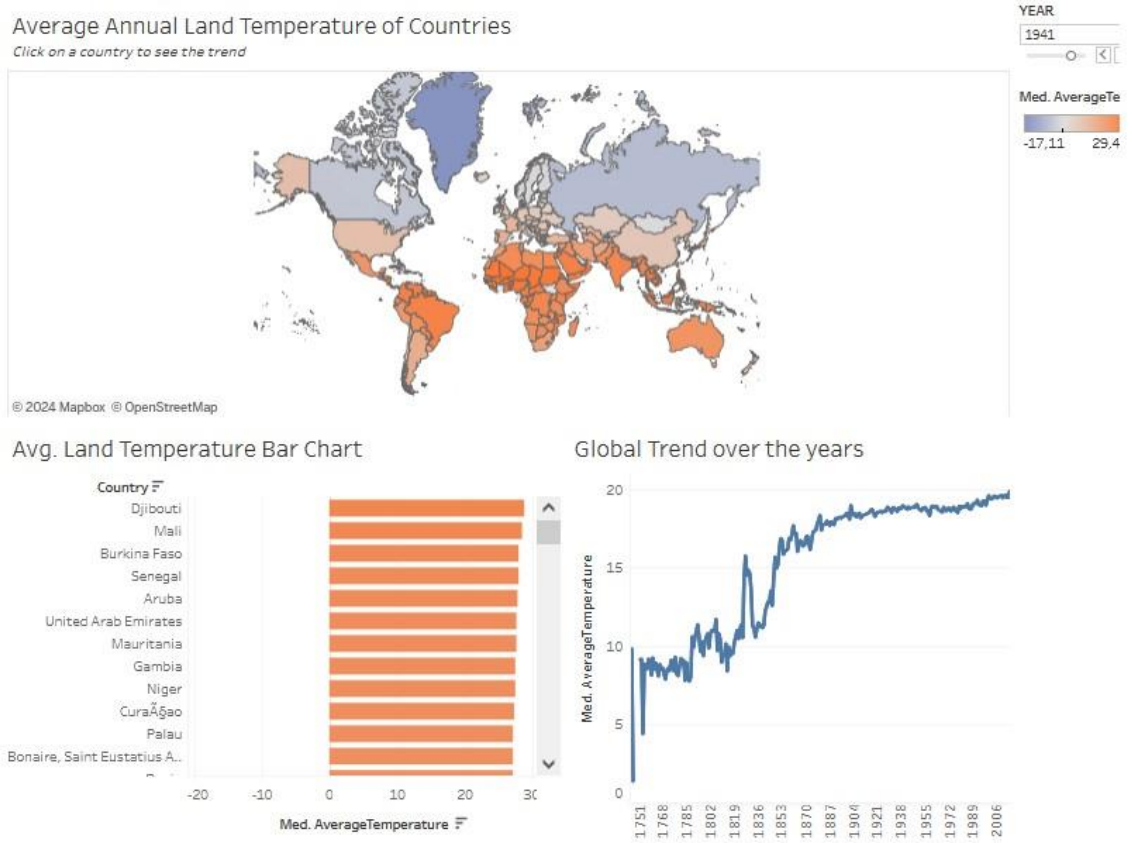
- Find the Right Data Set
- Data Cleaning and Preparation
- Exploratory Analysis
- Geospatial Analysis
- Regression Analysis
- Cluster Analysis
- Time Series Analysis
- **Tools**:
- **Excel**: For initial data exploration and cleaning.
- **Python**: Primary programming language for analysis
- **Colab**: For running and sharing Python code.
- **Tableau**: For creating interactive and detailed visualizations.

Introduction: Climate change is a highly debated topic. Some argue it is the biggest threat of our age, while others claim it is a myth based on dubious science. By turning the data over to a rigorous analytical process, I aim to form an informed view based on empirical evidence.

Key Question: Investigate the patterns of climate change over time to understand how temperatures are changing around the world.

Average Annual Land Temperature of Countries

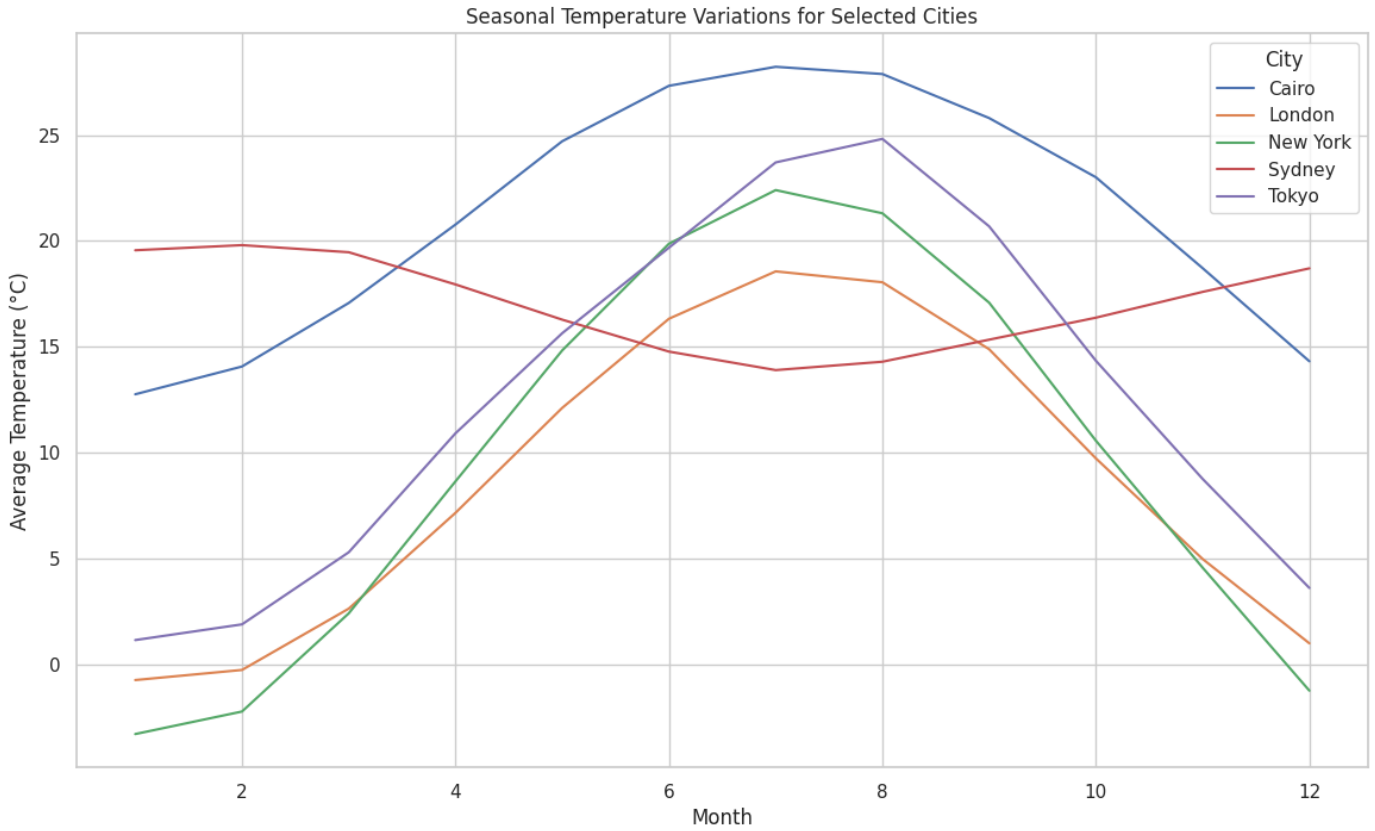
- **Global Temperature Trends**: The line chart shows a clear upward trend in global average temperatures, indicating global warming.
- **Regional Temperature Variations**: The map visualization highlights the variation in average temperatures across different regions and countries.
- **Detailed Country Data**: The bar chart provides specific average temperature data for selected countries, allowing for easy comparison.



Seasonal variations within major cities

I aimed to investigate seasonal temperature variations for major cities to understand trends and patterns, specifically focusing on whether there are consistent seasonal patterns across different geographic locations.

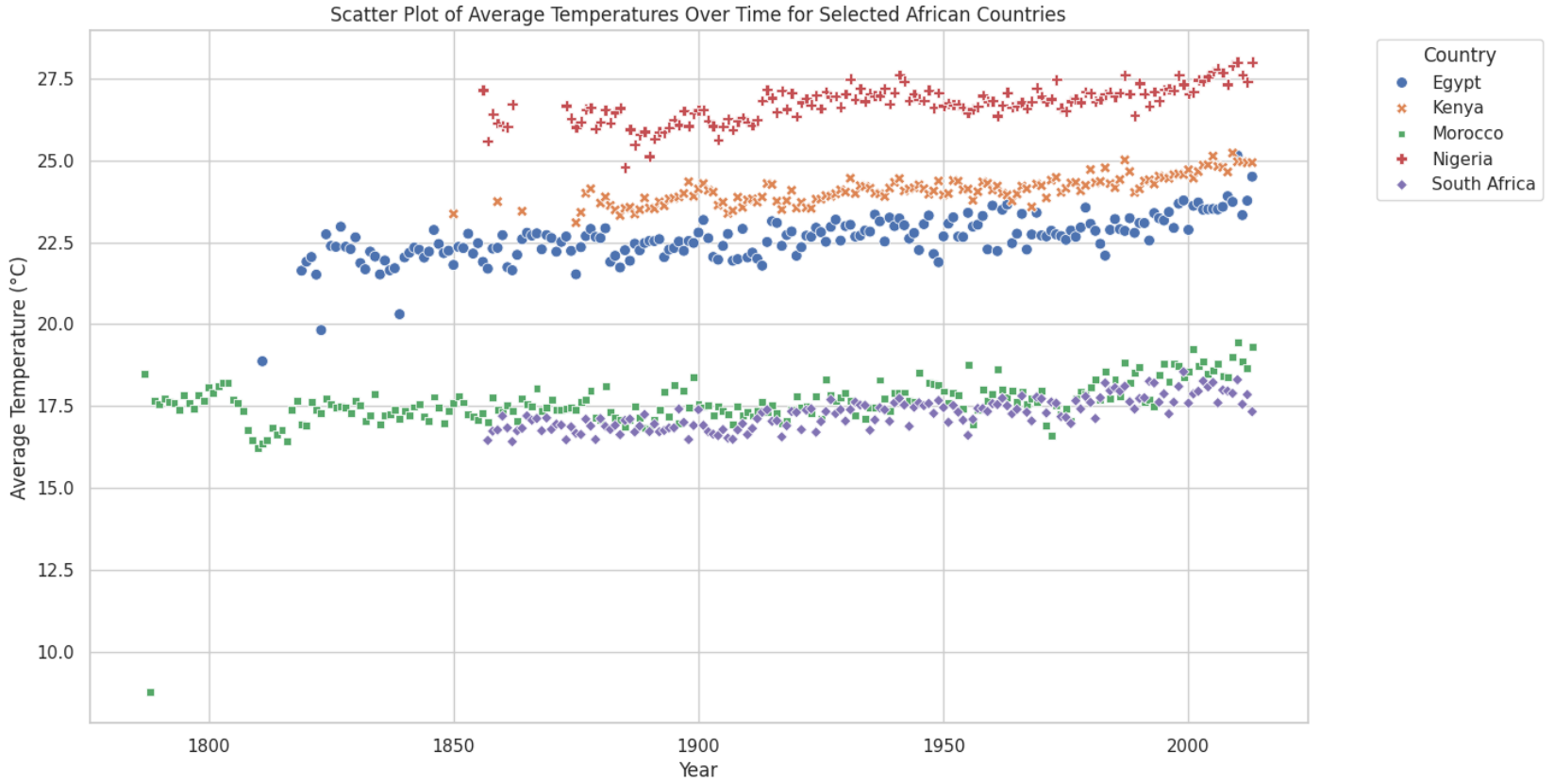
This analysis supports the hypothesis of consistent seasonal patterns in major cities around the world, with each city showing distinct temperature variations corresponding to its geographic location. The differences in seasonal peaks between Northern and Southern Hemisphere cities, such as Sydney, highlight the impact of geographic location on seasonal temperature patterns.



Focus on Africa: how the temperatures are changing.

This scatter plot depicts the average temperatures over time for selected African countries: Egypt, Kenya, Morocco, Nigeria, and South Africa. Each point represents the average temperature for a given year, with different markers and colors representing different countries.

It also allows for the observation of overall trends and patterns over time, with a focus on individual observations rather than continuous trends.



Analysis and Implications

Insights:

Trend Analysis: The trend component in the decomposition plot clearly indicated a warming trend in global land temperatures over the past century.

Seasonal Patterns: The seasonal component showed consistent and regular patterns, affirming the presence of seasonal variations.

Stationarity and Autocorrelation: The ADF test on the differenced data confirmed stationarity.

Conclusion:

In my analysis, I aimed to investigate global land temperatures over time to understand trends and patterns, specifically focusing on whether there is a warming trend and consistent seasonal patterns.

What you have read is just a summary of various studies and analyses that have been conducted. I am available to delve deeper and provide detailed insights into each analysis.

Please do not hesitate to contact me.

Thank you, Tiziano Chiaromonte

Email: tizianochiaromonte@hotmail.it