



Data analytics portfolio

VALENTIN MONNET

Projects

InstaCart

Generating marketing strategies based on consumer segmentation and habits

1

GameCo

Historical Video Game Sales Analysis & Recommendations

4

Pig.E Bank

Exploratory Analysis into Driving Factors behind Customer Attrition for a Global Bank

2

Infuenza Season

Preparation of Necessary Medical Staffing for Influenza Season

5

Rockbuster Stealth

Finding data-driven business insights for a lagging video rental company

6

Exploratory Data Project

Coming soon



Toolkit



Tableau



Excel



Jupyter Notebook



PowerPoint



Anaconda



GitHub



PostgreSQL



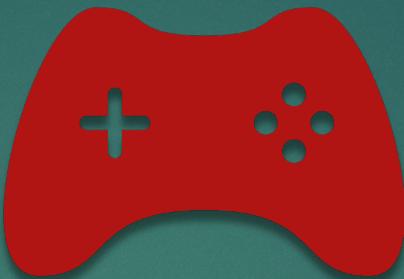
DBVisualizer



Python



Pandas



01

GameCo

Video Games Sales Analysis &
Market Recommendations

Project Overview

Objective:

Conduct a comprehensive descriptive analysis of video game data from 1980 to 2016. This analysis will guide GameCo's strategic planning for 2017, focusing on the development of new games and the overall expansion of the company.

Skills:

Data cleaning/grouping

Pivot tables

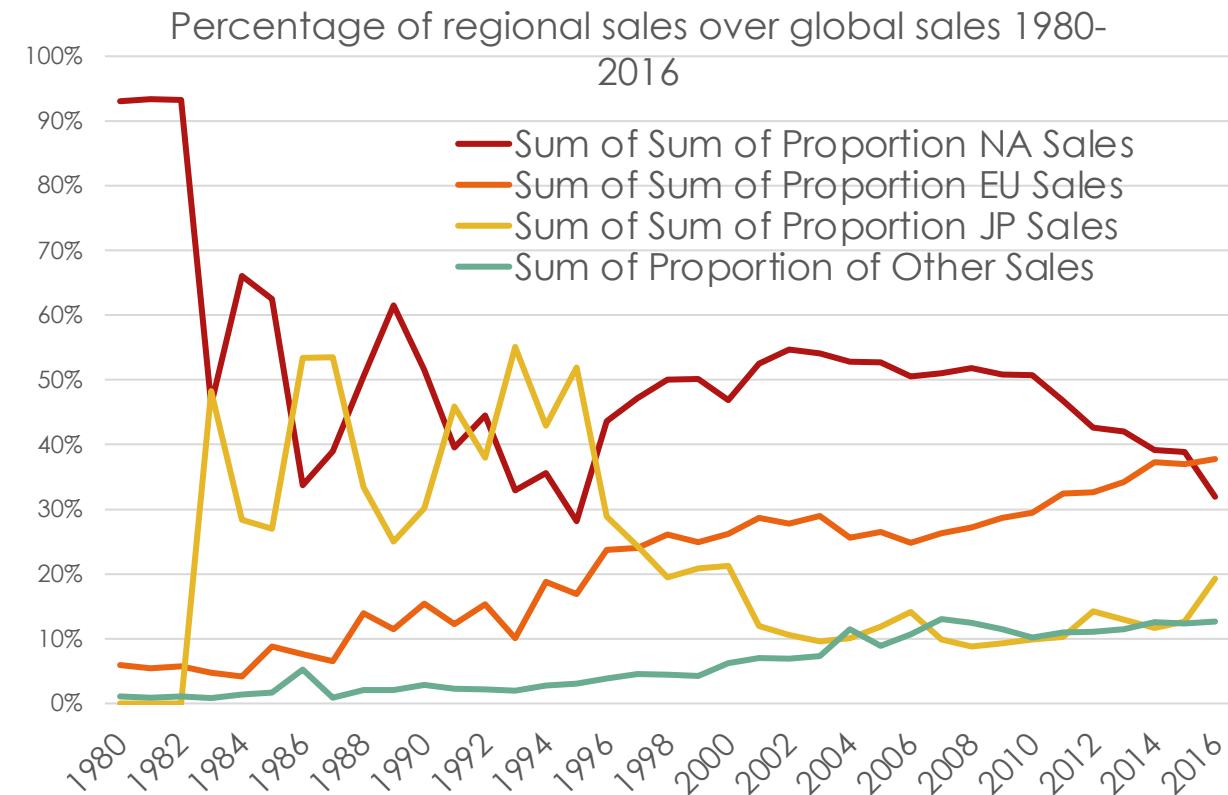
Descriptive Analysis

Visualizing results in
MS Excel/ PowerPoint

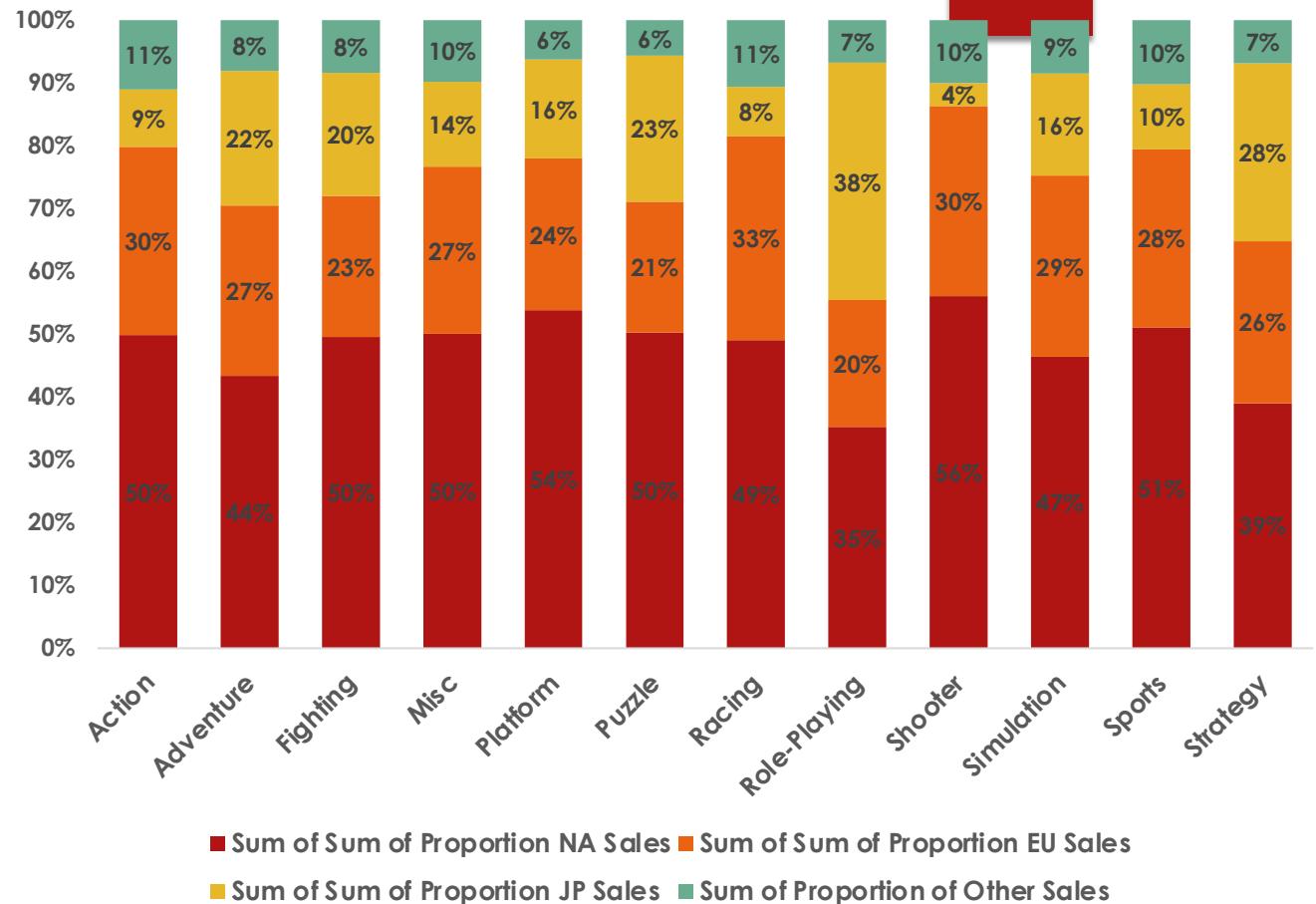
Data & Limitations:

The analysis utilizes a dataset from VGChartz, which encompasses historical sales data for video games across multiple platforms, genres, and publishers from 1980 to 2016. The dataset records units shipped rather than units sold, omitting precise financial data. Additionally, data collection was not fully completed for the year 2016.

Analysis Findings



Sales in North America have been declining over recent years, while sales in the European Union and Japan have increased, now accounting for a larger proportion of global sales. The trends have stabilized compared to the fluctuating patterns observed from 1980 to 2000.



Since 2010, North America has maintained its leadership in global sales for most video game genres, except for role-playing games, though it has seen a decreasing trend. Conversely, Europe has seen a significant increase in its market share, particularly in genres such as racing, shooter, and sports. This rise is largely due to the decline in sales in North America.

Revamping Marketing Strategies for Targeted Growth	To address the profit declines in North America, there is a need to enhance marketing investments, particularly focusing on the PS4 and Xbox One platforms, and emphasizing Shooter, Action, and Sports genres. Simultaneously, in Europe, where the PC platform dominates, marketing efforts should be progressively enhanced, leveraging the region's strong internet infrastructure to foster sustained growth.
Exploring New Markets and Utilizing Data-Driven Insights	It is crucial to expand into emerging global markets by aiming to increase market share by 10% in secondary regions. This expansion will allow for deeper market penetration and the ability to reach diverse customer segments. Additionally, employing detailed data analytics will be instrumental in identifying market trends and drivers, which can inform tailored strategies that support both internal and external business growth.
Strategic Resource Allocation Across Markets	In North America, it is advisable to shift resources away from platform and puzzle games and increase support for Shooter and Sports genres, aligning with current market demands and improving returns. Resource reallocation in North America should also include measures to increase capacity for European market ventures, taking advantage of a larger consumer base and tapping into emerging opportunities.

Recommendations



02

Influenza Seasons

The project involves analyzing national influenza trends and adjusting the distribution of healthcare resources to maximize efficiency. This strategic approach aims to enhance the preparedness and response of healthcare systems during peak flu seasons.

Project Overview

Objective:

The aim is to investigate historical patterns of influenza incidents across the United States. This analysis will guide the strategic forecasting of staffing needs, enabling a medical staffing agency to efficiently allocate temporary healthcare personnel for the impending flu season.

Skills:

Data cleaning

Data integration

Statistical Hypothesis

Testing

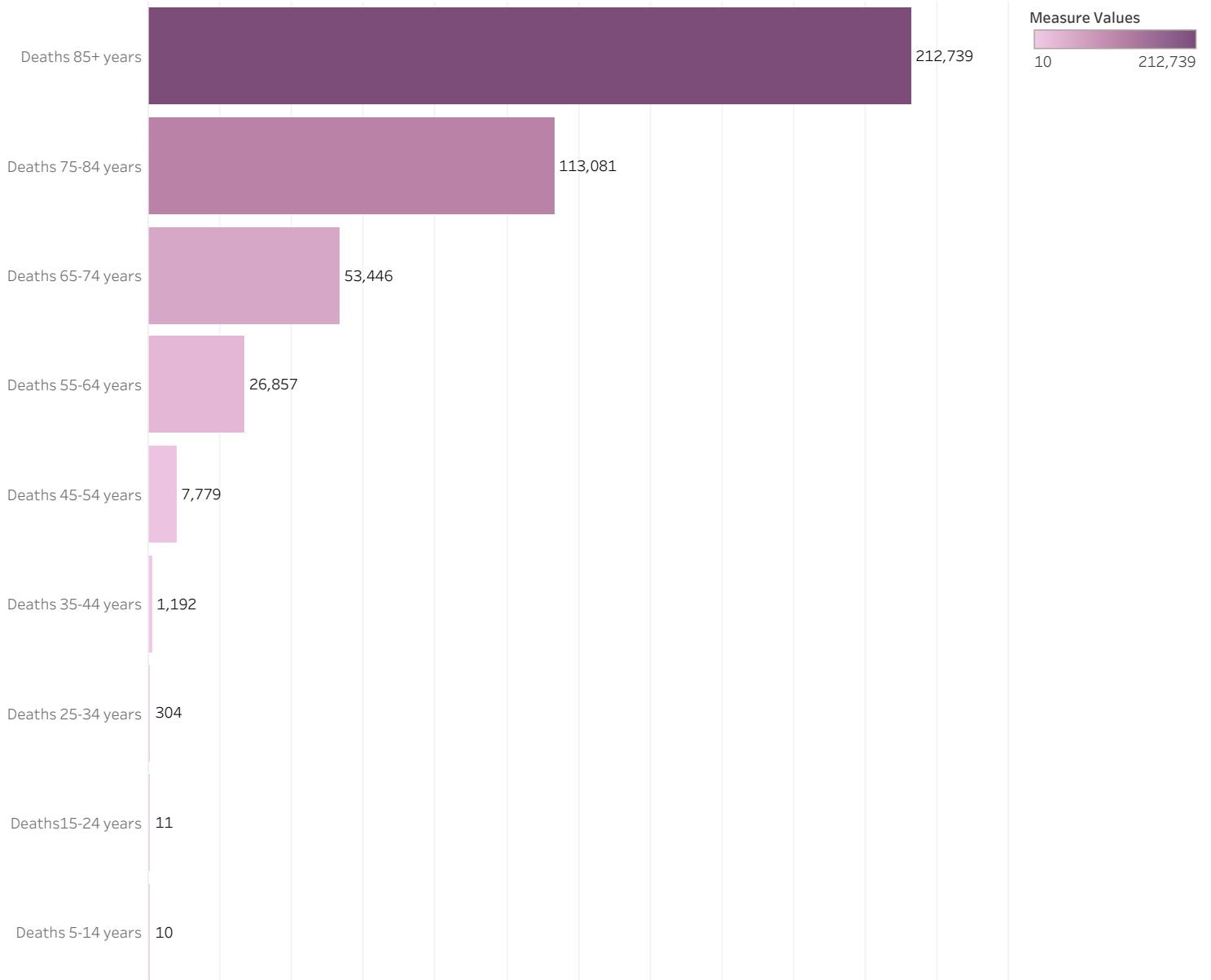
Tableau Visualizations
& Storytelling

Data & Limitations:

The analysis utilizes influenza mortality data from 2009 to 2017, as categorized by location, timeframe, age, and gender, provided by the CDC. Due to confidentiality, 82% of the entries have been suppressed. Population demographics by geographic area are derived from the US Census Bureau. Death records include only a single cause of death, which may result in an underestimation of influenza-related fatalities. The scope of data is restricted to clinics and hospitals that participated in the reporting between 2009 and 2017.

Analysis Findings

Recognising At-Risk Groups



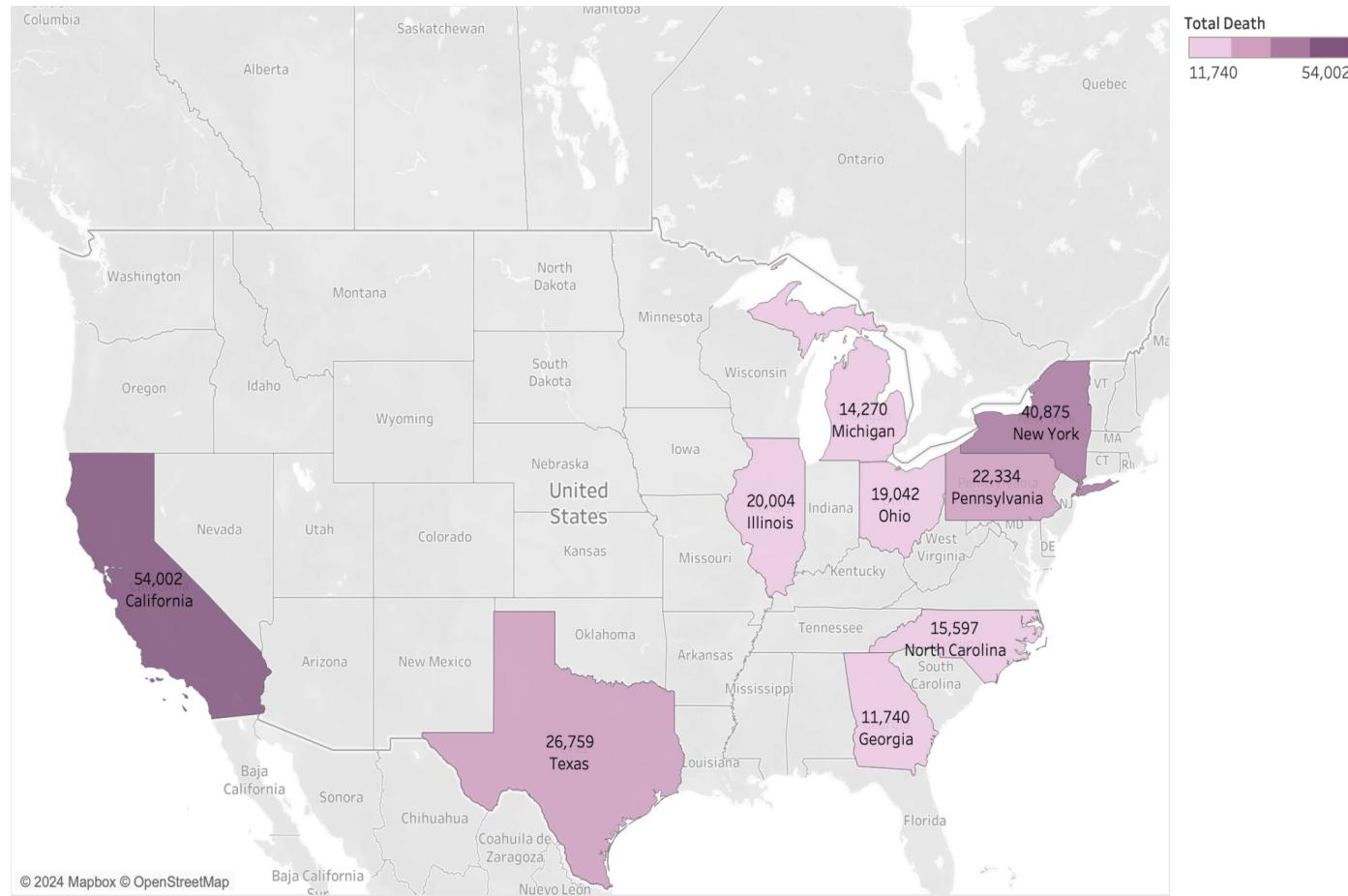
More than 95% of all influenza-related deaths occur in individuals aged 65 and older, identifying this demographic as the most susceptible to the illness.

Consequently, healthcare efforts and resources should be prioritized and redirected towards supporting this vulnerable age group.

Analysis Findings

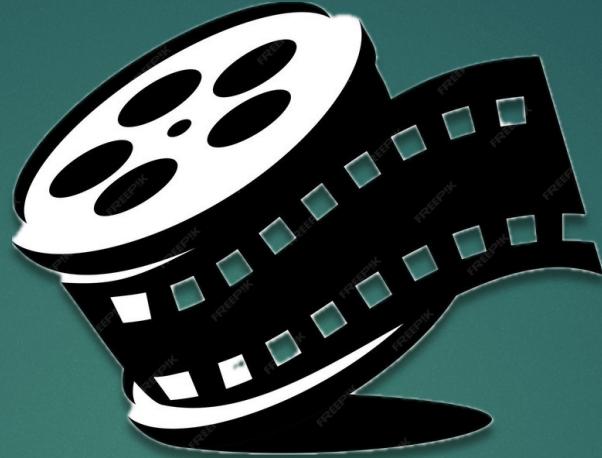
- This map visualizes the distribution of total deaths across various states in the United States, with the data likely related to healthcare demands such as during an influenza season. Each state is shaded in different intensities of purple, where darker shades represent higher numbers of deaths and lighter shades indicate fewer deaths. Key data points shown include:
 - California with the highest number of deaths at 54,002.
 - New York follows with 40,875 deaths.
 - Other states like Texas and Pennsylvania also show significant numbers with 26,759 and 22,334 deaths respectively.
 - The purpose of the map is to assist in tailoring staffing levels across states to meet healthcare demands effectively, suggesting regions that may require more intensive healthcare resources and personnel deployment based on the mortality rates depicted.

Tailoring Staffing Levels Across States to Meet Healthcare Demands



Prioritizing Healthcare for High-Risk Groups	Given the significant number of influenza-related fatalities among individuals aged 65 and older, it is imperative to prioritize and concentrate healthcare resources towards this vulnerable age group. This strategy should include targeted healthcare campaigns, increased availability of vaccinations, and tailored medical services that cater specifically to the elderly.
Tailoring Staffing Levels to Meet Regional Demands	The distribution of influenza-related deaths across the United States, as illustrated by the map, calls for a strategic approach in adjusting healthcare staffing levels. States like California, New York, Texas, and Pennsylvania, which report higher mortality figures, should receive prioritized healthcare support. This effort should focus on mobilizing additional healthcare personnel and resources to these high-demand areas to manage and mitigate the effects of influenza effectively.
Enhancing Healthcare Infrastructure and Education	Efforts should be made to expand healthcare infrastructure and resources in high-risk areas, such as increasing the availability of hospital beds and medical supplies tailored to treat influenza. Additionally, enhancing training for healthcare personnel on handling influenza outbreaks and ensuring that preventive measures are in place can further bolster the healthcare system's responsiveness. The goal is to ensure that all states, especially those with high mortality rates, have the necessary support to effectively manage and mitigate the impacts of influenza.

Recommendations



03

Rockbuster

Video rental company analysis to provide data driven insights for business expansion

Project Overview

Objective:

Leverage detailed data analysis to guide the company's 2020 strategy for launching online video services and improve its market position. By harnessing actionable insights from data, the strategy will focus on optimizing service offerings, targeting the right consumer segments, and enhancing the overall business performance. This approach will ensure that the launch is aligned with consumer preferences and market trends, positioning the company for successful expansion in the digital landscape.

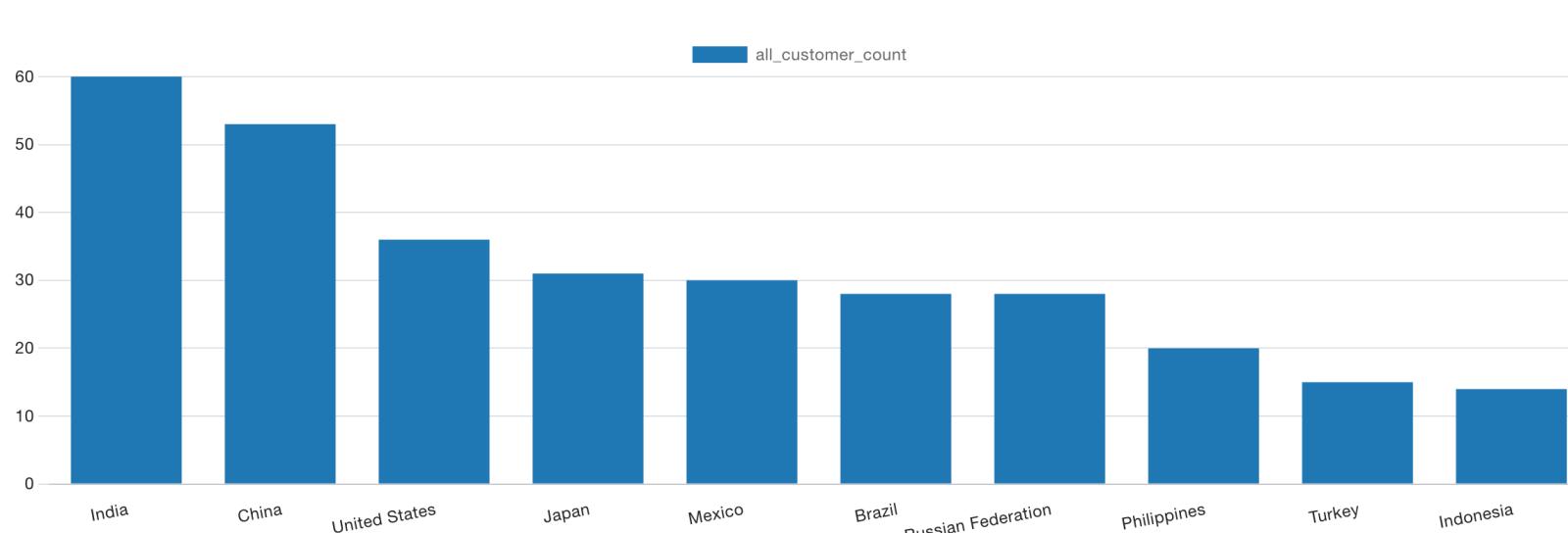
Data Overview & Limitations:

The relational database for a movie rental company includes 15 detailed tables covering customers, film inventory, movie rentals, store operations, and payments, with a comprehensive data dictionary. This dataset focuses on internal records, which may require updates to better reflect external market conditions and customer interactions.

Skills:

- Data Cleaning/Filtering
- Database Manipulation
- SQL Joins
- CTE's & Subqueries
- Visualizations and Storytelling

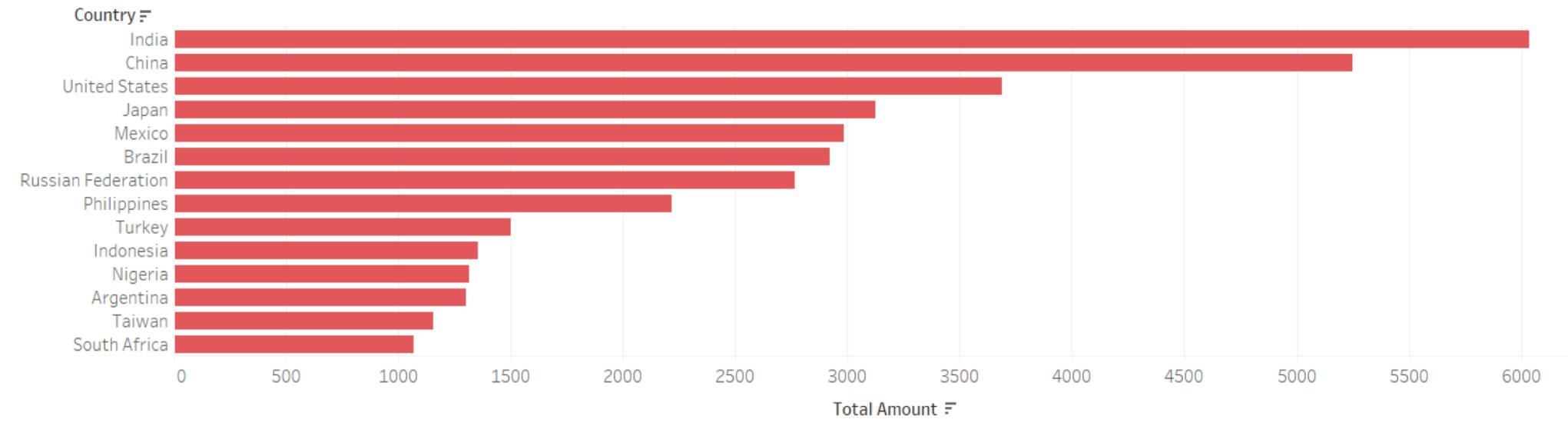
Analysis Findings



country	all_customer_count	top_customer_count
India	60	2
China	53	0
United States	36	2
Japan	31	0
Mexico	30	0
Brazil	28	1
Russia	28	0
Philippines	20	0
Turkey	15	0
Indonesia	14	0

Rockbuster Stealth has established a substantial global footprint, serving customers in 108 countries. It has its strongest market presence in India, China, the United States, Japan, Mexico, Brazil, Russia, the Philippines, Turkey, and Indonesia, underscoring its broad international reach.

Analysis Findings



The graph displays influenza-related deaths across various U.S. states, with California reporting the highest at 54,002 and New York at 40,875. This data aids in strategizing healthcare resources allocation, indicating states like Texas and Pennsylvania also require significant attention due to their high mortality rates. The visual underscores the need for targeted healthcare staffing to effectively manage regional demands during influenza peaks.

Optimized Content Strategy and Promotional Activities:	Focus on curating a high-quality content library by discontinuing titles that perform poorly, ensuring the availability of movies that resonate with a global audience. Enhance customer engagement and loyalty by strategically promoting and offering discounts on the most popular movies, with a special focus on key markets like India, China, and the U.S.
Targeted Marketing and Customer Retention Efforts:	Offer personalized signup incentives such as discounts and coupons specifically targeted at top-performing countries to attract new users and maintain the loyalty of existing ones. Develop a tailored pricing strategy for High Lifetime Value Customers (HLVC) to improve retention rates and optimize revenue generation.
Expansion and Diversification Tactics:	Broaden the range of language options available in the content library, including Spanish, Chinese, and Hindi, to better serve the linguistic preferences of diverse audiences in top markets. Expand the movie library by incorporating popular genres and conducting analyses to identify potential new additions in drama, games, and sports categories that align with customer interests and market trends.
Operational Efficiency and Enhanced Customer Interaction:	Reallocate budget efficiently to bolster support in underdeveloped locations while enhancing resources in areas that show robust performance, aiming to maximize operational effectiveness. Implement initiatives to incentivize timely returns, such as penalties for late returns, to improve customer experience and operational efficiency.

Recommendations



04

Instacart

Online grocery retailer consulting with an emphasis on behavioral analysis and customer segmentation for more efficiently targeted marketing strategies

Project Overview

Objective:

Conduct an exploratory analysis to understand customer behavior and sales trends for an online grocery retailer. The aim is to extract actionable insights that will improve marketing tactics, refine sales segmentation, and enhance customer profiling strategies.

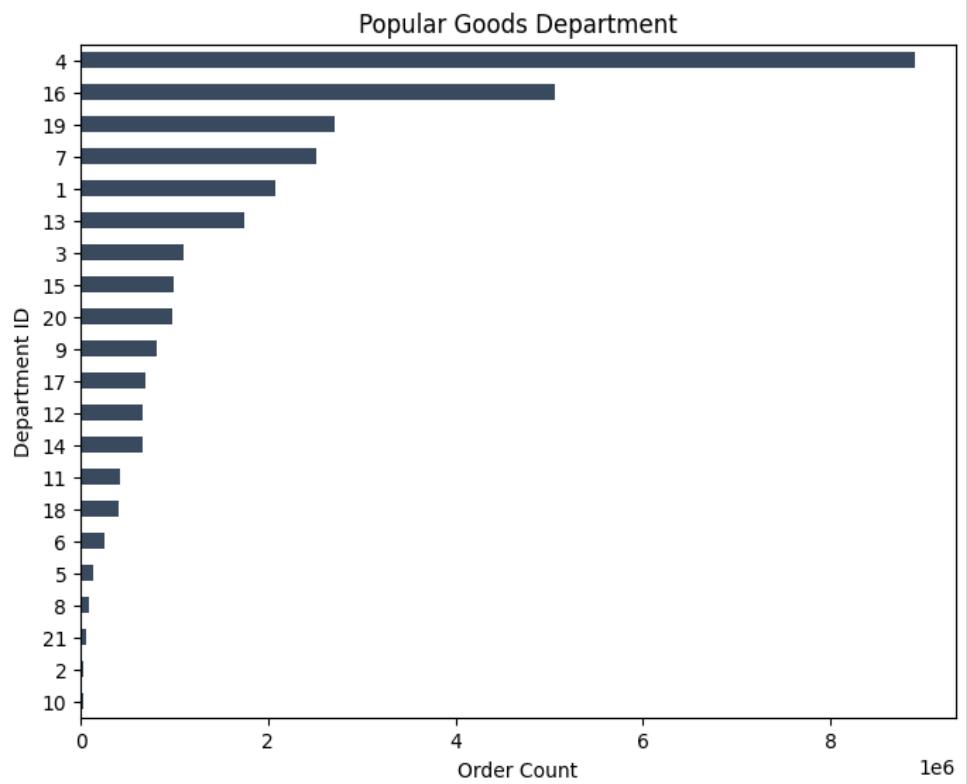
Skills

Data Wrangling & Merging
Grouping/Aggregating Data
Population Flow/Excel
Reporting

Data & Limitations

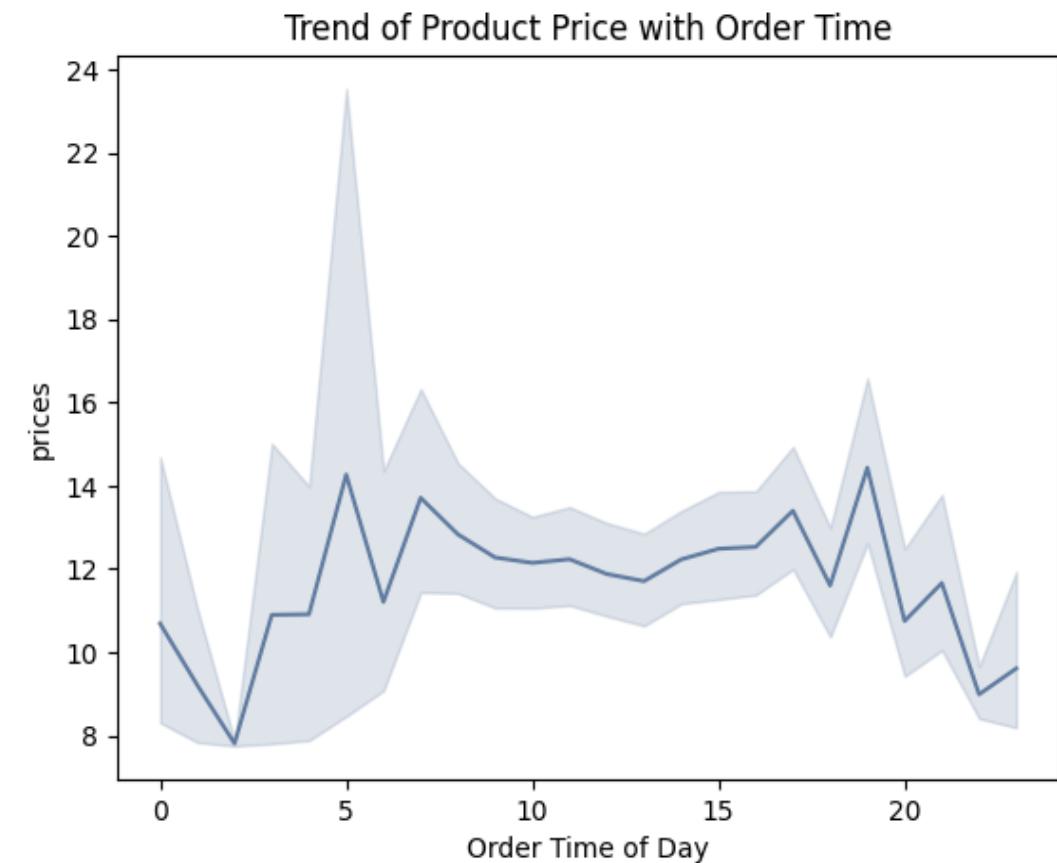
The dataset comprises records exclusively from 2017. Customer demographics are restricted to income, age, family size, and marital status. Datasets include details on orders, products, and departments sourced from actual Instacart data in 2017 from Kaggle, along with fictitious customer data supplied by Career Foundry.

Analysis Findings



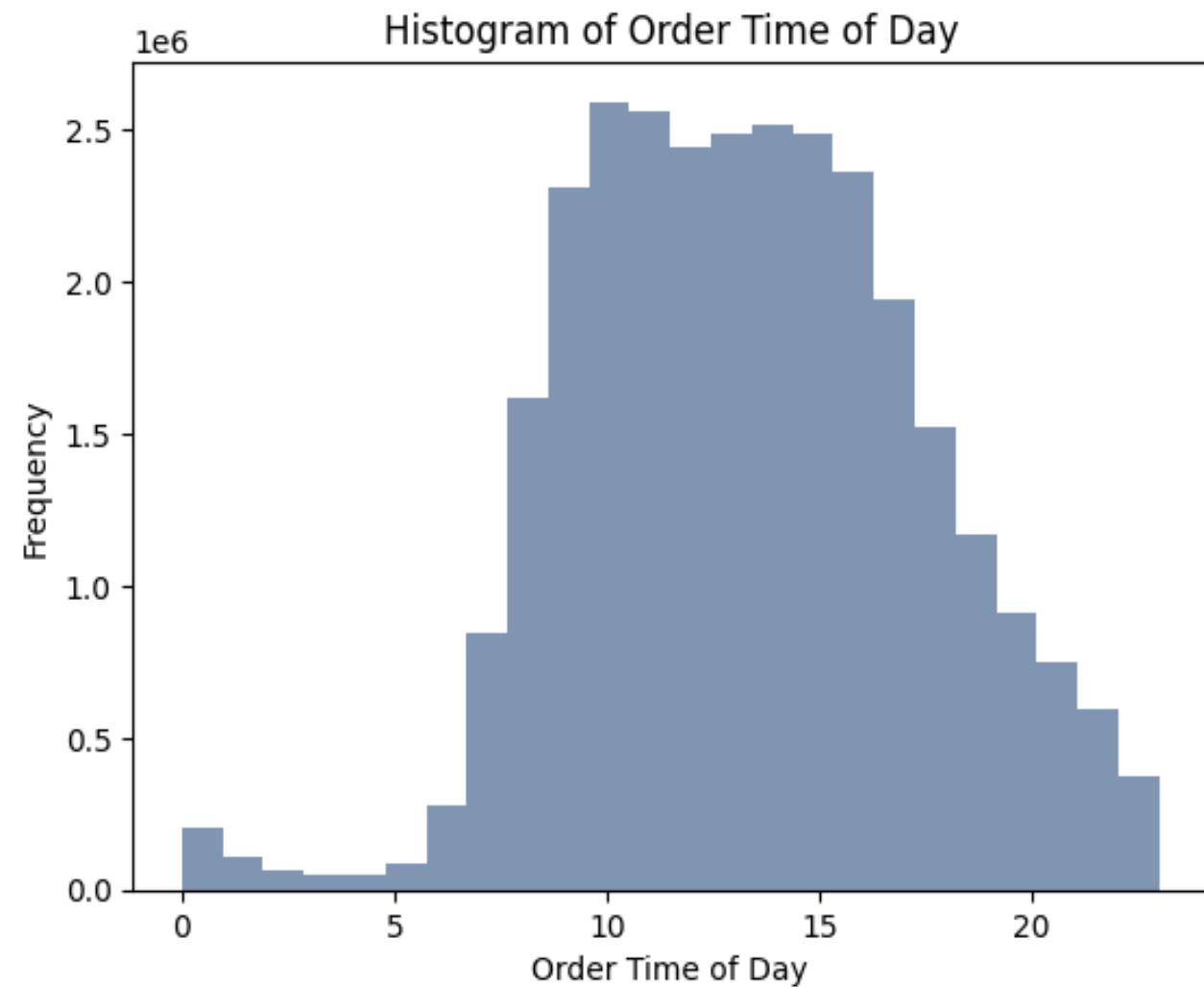
Produce and dairy items had the volume of orders by a comfortable margin.

Unnamed: 0	department
0	1 frozen
1	2 other
2	3 bakery
3	4 produce
4	5 alcohol
5	6 international
6	7 beverages
7	8 pets
8	9 dry goods pasta
9	10 bulk
10	11 personal care
11	12 meat seafood
12	13 pantry
13	14 breakfast
14	15 canned goods
15	16 dairy eggs
16	17 household
17	18 babies
18	19 snacks
19	20 deli
20	21 missing

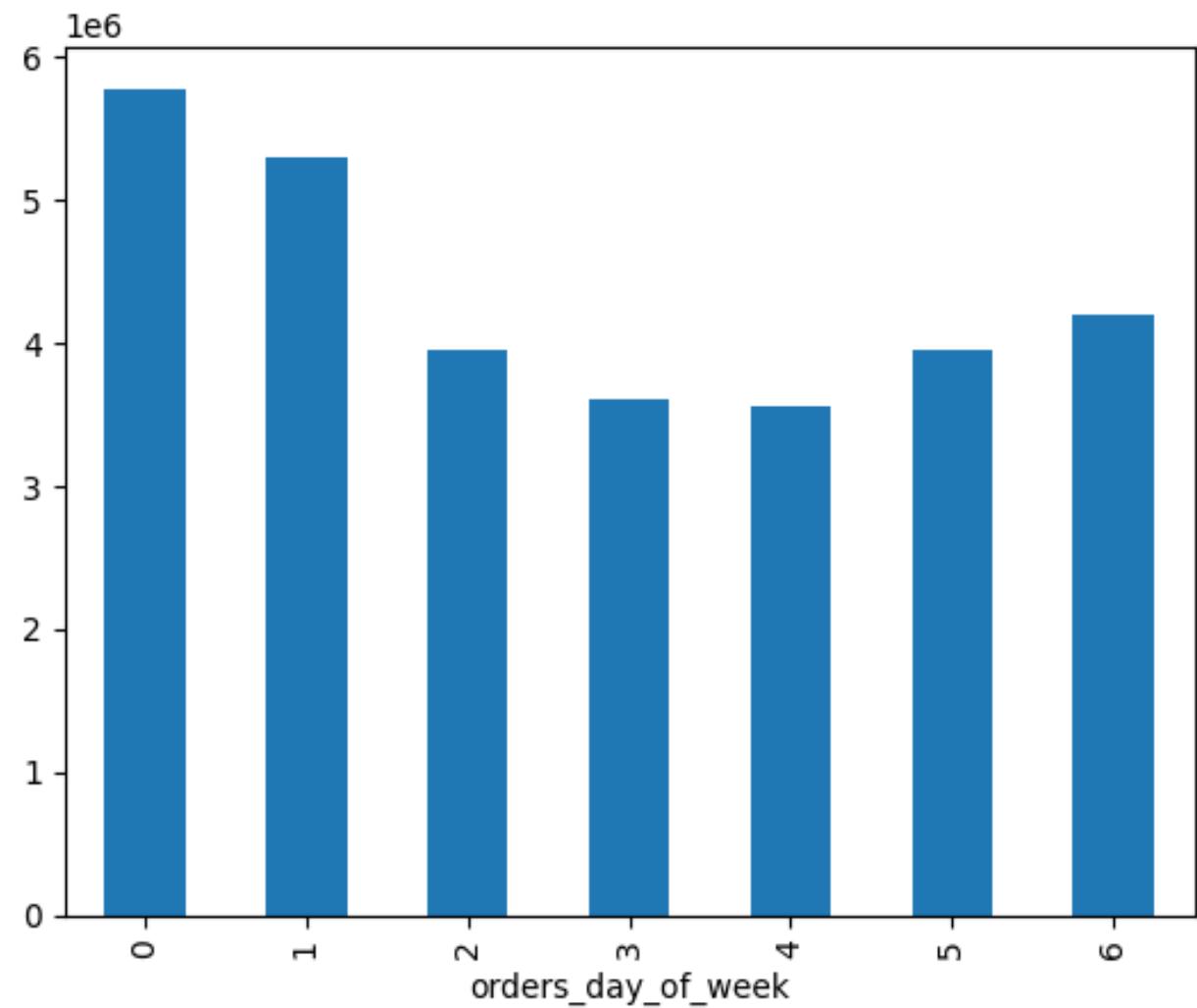


Price distribution is heavily skewed towards products \$15 and under

Analysis Findings

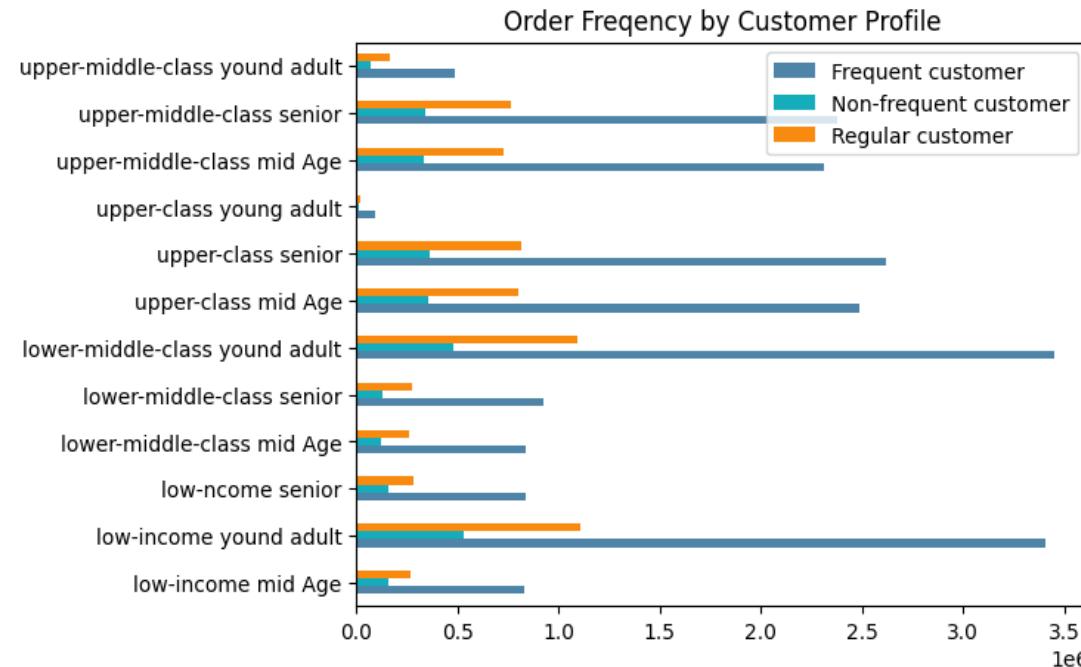


Daily high-traffic hours: 9AM to 5PM



Busiest days of the week: Friday – Sunday

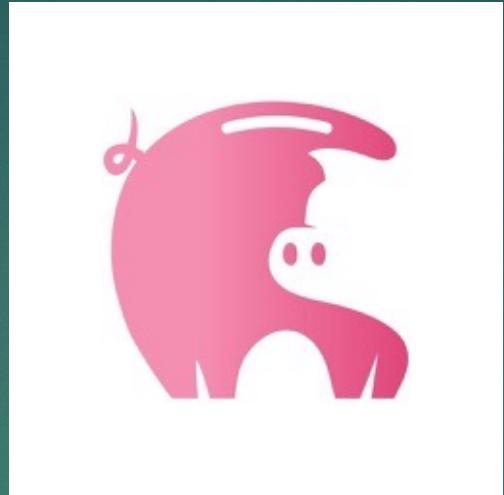
Analysis Findings



Analysis indicates that customer demographics, such as age and family status, significantly influence order frequency and spending habits. Young adults and seniors with higher financial stability tend to shop more frequently, whereas single and younger customers often opt for more affordable items. In contrast, those married or with families demonstrate varied spending across different price ranges. These patterns offer valuable insights for customizing marketing approaches and product offerings to better align with the distinct needs of each customer group.

Optimize Marketing for Customer Demographics	<ul style="list-style-type: none">● Adapt marketing messages to target specific age groups and family statuses that show distinct purchasing patterns, focusing on times and channels where these segments are most active.● Increase marketing efforts on weekdays, especially targeting young adults and seniors with stable financial conditions, who tend to shop more frequently during these times.● Limit marketing spend during late-night hours when engagement is low, reallocating budget towards more productive times to maximize ROI.
Enhance Family-Oriented Marketing Programs	<ul style="list-style-type: none">● Launch a "Family Shopping Rewards" program, providing incentives for families to purchase across a wide range of product categories.● Initiate personalized email marketing to remind family customers of special offers, enhancing perceived value and encouraging repeat purchases.● Develop loyalty schemes that reward varied spending habits, particularly for families that show a propensity to spend across different price ranges, increasing overall customer retention and satisfaction.
Leverage Insights for Tailored Promotions	<ul style="list-style-type: none">● Focus promotional efforts on product ranges that align with the spending habits of identified customer segments, such as premium products for financially stable adults and value items for younger, single customers.● Schedule promotions during peak shopping times identified in the customer behaviour analysis to capture the highest level of engagement and conversion.● Explore opportunities for cross-promotions and bundled deals that cater to the comprehensive needs of families, potentially increasing average order value and fostering brand loyalty.

Recommendations



04

Pig. E Bank

Conduct an exploratory analysis to pinpoint key determinants of customer attrition at a global bank, focusing on crucial demographic and behavioral indicators such as gender, age, and credit scores.

Project Overview

Objective:

Enhance the effectiveness of the anti-money-laundering compliance department by providing analytical support. This includes evaluating client and transaction risks, developing guidelines for controlling bias and overseeing operations, and refining models to improve the overall compliance strategy.

Data & Limitations:

Customer demographics are limited to gender, age, and country, including records of users' account balance, estimated salary, membership status, and more. The dataset consists of fictional client data provided by CareerFoundry.

Skills:

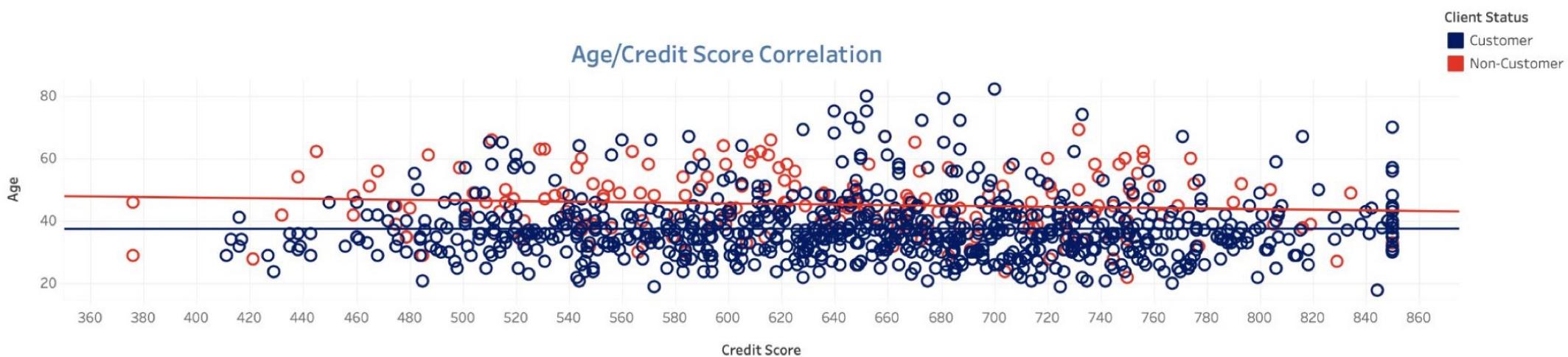
Big Data Ethics
Pivot Tables
Data Mining
Descriptive Analysis
Time Series Analysis & Forecasting

Analysis Findings

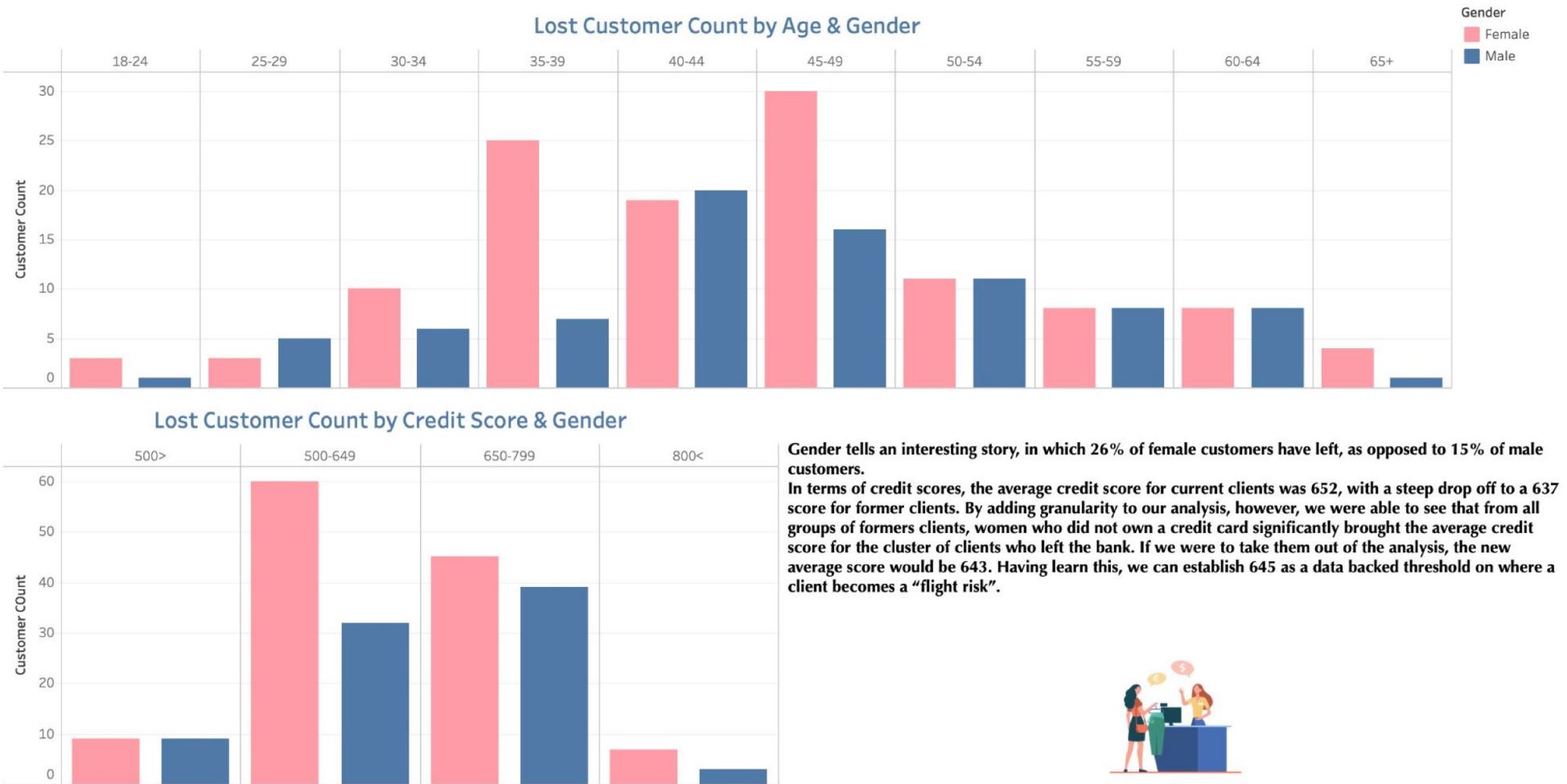


As evidenced by these graphs, the average age for a current customer is below 40 for all 3 countries in which data was collected. In contrast, the average age for a non-customer was no younger than 44.

This gives us a partial glimpse into the relevance of age in determining highest risk factors for customers leaving the bank.



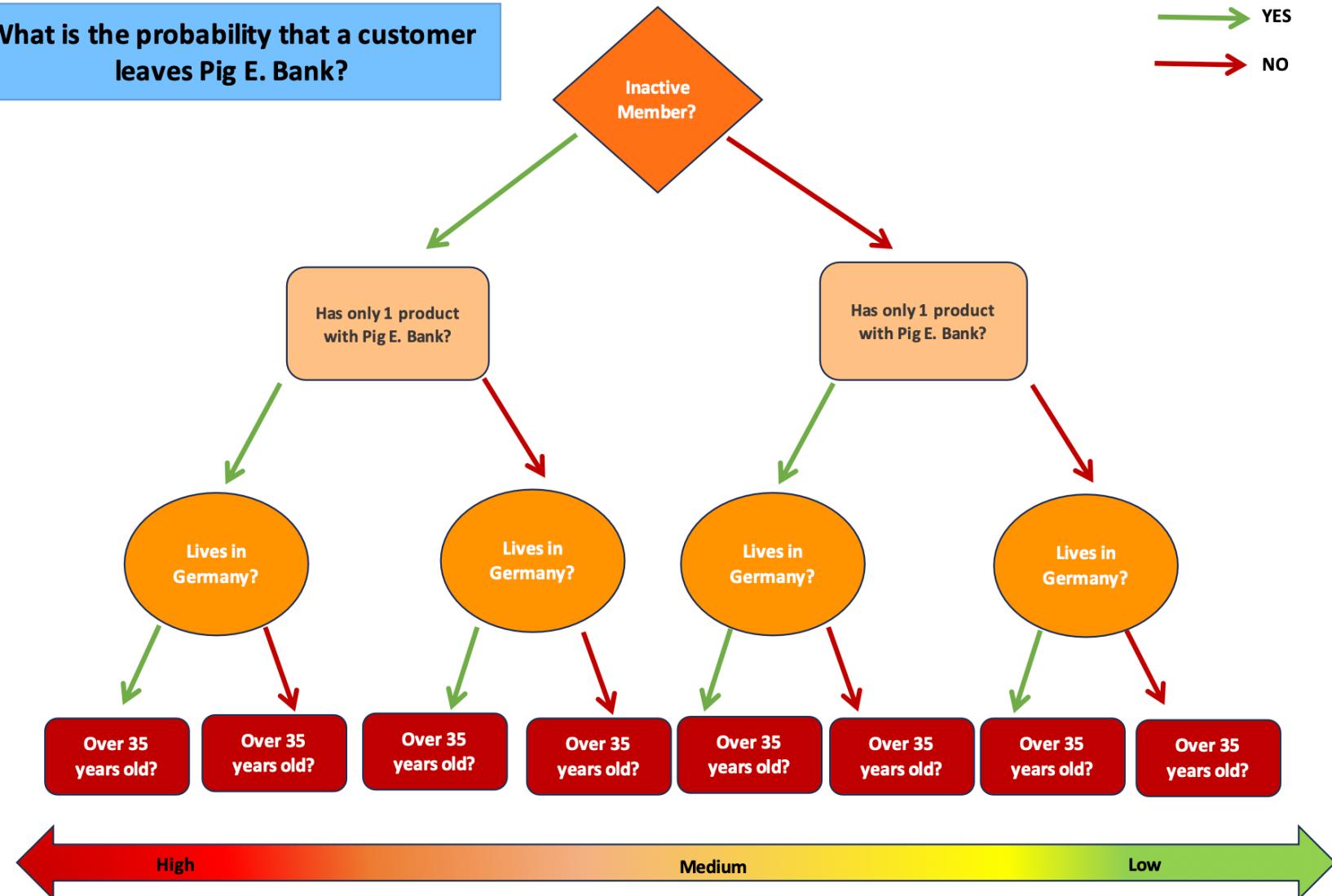
Analysis Findings



Analysis Findings

What is the probability that a customer leaves Pig E. Bank?

YES
NO



PROBABILITY SCALE

Product Diversification and Enhanced Engagement:	<p>Introduce a broader range of products and services to cater to diverse customer needs, focusing on those segments identified as at risk, such as individuals with only one bank product. Consider cross-selling insurance or investment products to provide value and enhance customer stickiness.</p> <p>Re-engage inactive members through personalized marketing and communication strategies. Utilize data-driven insights to offer customized promotions and services that resonate with their specific financial needs and lifestyle preferences.</p>
Targeted Strategies for Younger and Older Demographics:	<p>For older clientele showing higher churn rates, particularly in regions like Germany, develop loyalty programs that offer tailored financial advice and retirement planning services. These programs should focus on providing value that aligns with their life stages and financial goals.</p> <p>Attract younger demographics by offering incentives such as cashback rewards on transactions and exclusive access to popular events. Expand efforts to include financial literacy programs and tools for effective budget management and credit health, aiming to nurture long-term banking relationships.</p>
Localized Incentive Programs and Community Engagement:	<p>Implement geographic-specific strategies to address the unique needs of customers in high-churn areas. This could include community events, localized customer service teams, and offers tailored to regional preferences and behaviors.</p> <p>Enhance customer experience across all age groups by providing personalized financial solutions that empower customers to manage their finances better. This should include access to user-friendly financial planning tools and educational resources that help maintain healthy credit scores.</p>

Recommendations

Thanks!

Do you have any questions?

valentin.monnet@free.fr
+447494946252

