TheAnalyticsTeam

Sprocket Central Pty Ltd

Data analytics approach

Mark Marquez - Virtual KPMG Internship

Agenda

1. Introduction
2. Data Exploration
3. Model Development
4. Interpretation

Introduction

Goal: Maximizing marketing ROI by analyzing customer demographics and transaction history

Key Steps:
- Determine ideal number of customer groups to create
- Segment customers into groups
- Identify demographics by groups
- Understand buying habits by group
- Calculate customer lifetime value from customers
- Predict customer lifetime value for new customers


Bike Related Purchases Past 3 Years
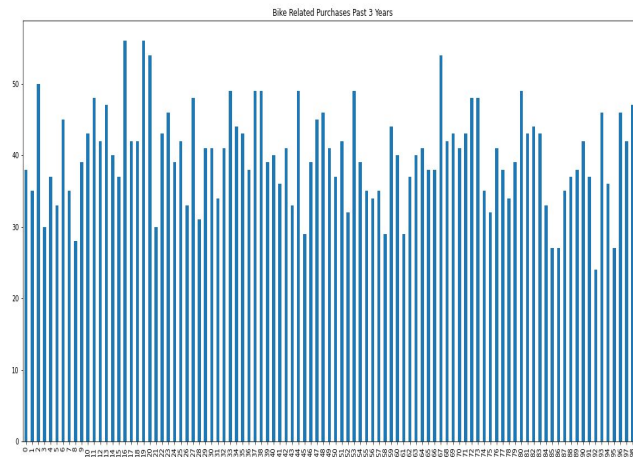
Data Exploration

Goal: Maximizing calculations and model predictions with data preparation, data analysis and feature engineering

Key steps outline:
- Merge data
- Calculate values (i.e., customer lifetime value)
- Format data types
- Group values by type (numerical vs categorical) and visualize
- Find and fix skews in data distribution
- Create relational columns/features
- Structure dataset levels correctly
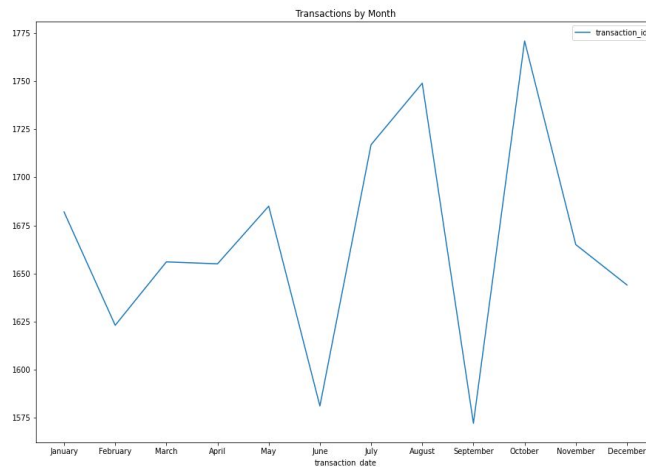
Model Development

Goal: Develop models that determine ideal # of customers groups, analyze customers by groups and predict future customer value

Overview of analysis from models built:
- Explanatory analysis to calculate customer lifetime value (CLV)
- Unsupervised machine learning to find ideal # of customer groups w/ k-means classification and dimension reduction
- Supervised machine learning to find and rank features important to CLV
- Supervised machine learning to predict customer lifetime value of new customers
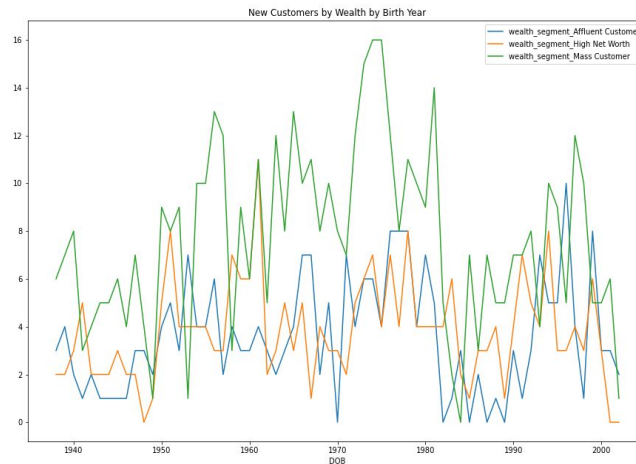

New Customers by Birth Year
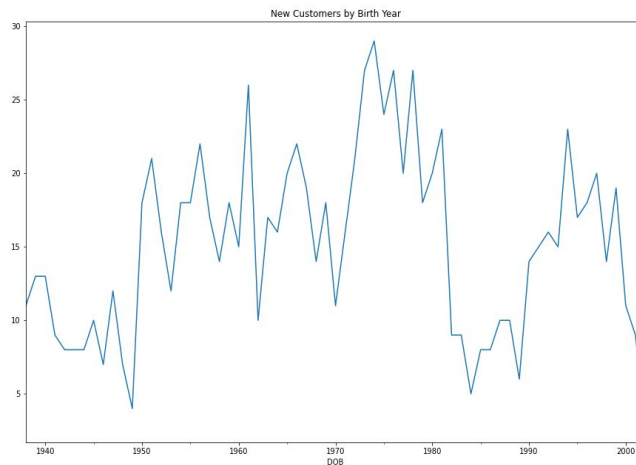
Interpretation

Goal: Understand how different customer groups differ and identify trends in sales over times

Key information identified:
- Trends and changes in sales throughout the year
- How much each customer group spends on average
- How often each customer group purchases
- How often and much each group purchases throughout the year

New Customers by Wealth by Birth Year

Appendix

Appendix

https://github.com/MarkMarquez0224/Resume-Portfolio/blob/master/Sprocket%20Central%20Analysis%20-%20KPMG%20Virtual%20Internship%20-%20V3.ipynb