

PRODUCT SALES ANALYSIS

V. Varun Aravind
810021205096
AUBIT – Trichy
Phase 2 Project

AGENDA

Introduction

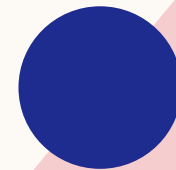
Primary goals

Code

Output

Area of focus

Summary



Product sales Analysis

INTRODUCTION

In the dynamic realm of business, understanding and accurately anticipating future sales trends and customer behaviors are paramount for success. As we embark on the "Product Sales Analysis" project, we recognize the transformative potential of machine learning algorithms in this pursuit.

This project aims to harness the capabilities of machine learning to not only unravel the complexities of past sales data but also to forecast future trends with precision. Through the fusion of data science and business intelligence, we intend to empower organizations to make informed decisions, optimize their strategies, and unlock new avenues for growth in an ever-evolving market landscape.



PRIMARY GOALS

THE PRIMARY GOALS FOR THE "PRODUCT SALES ANALYSIS" PROJECT ARE

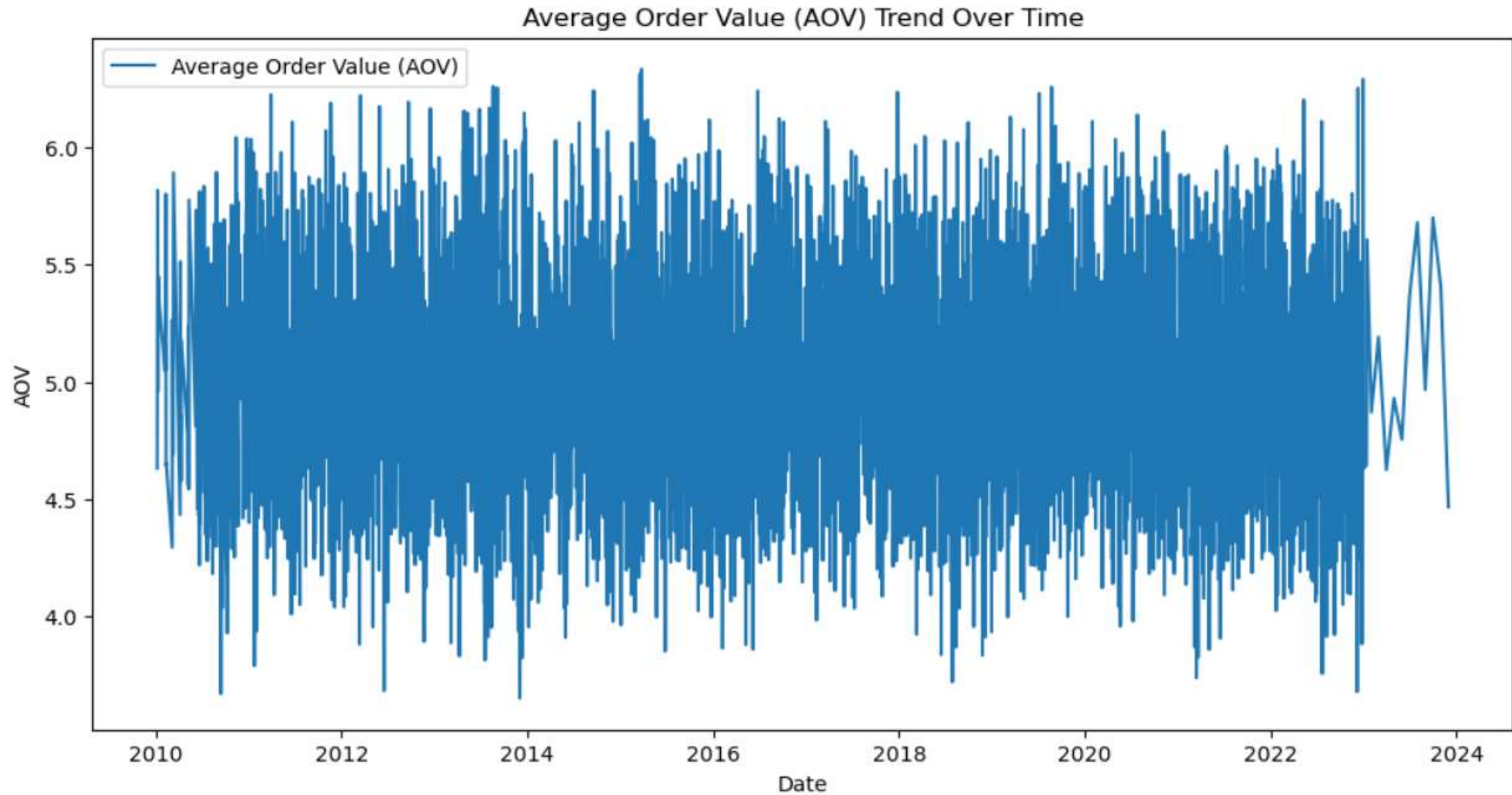
5

- 1. **Sales Forecasting:** Develop accurate predictive models to forecast future sales of products, enabling better inventory management and resource allocation.
- 2. **Customer Segmentation:** Identify distinct customer segments based on their purchasing behavior, demographics, and preferences to tailor marketing and sales strategies.
- 3. **Market Basket Analysis:** Analyze which products are often purchased together, enabling cross-selling and bundling opportunities to increase revenue.
- 4. **Churn Prediction:** Predict and prevent customer churn by identifying at-risk customers and implementing retention strategies.
- 5. **Product Performance Analysis:** Evaluate the performance of individual products in terms of sales, profitability, and customer satisfaction to inform product development and marketing efforts.
- 6. **Price Optimization:** Determine optimal pricing strategies for products to maximize revenue and profitability while remaining competitive in the market.
- 7. **Inventory Management:** Optimize inventory levels to meet demand while minimizing carrying costs and stockouts.

CODE:

- `import pandas as pd`
- `import matplotlib.pyplot as plt`
- `# Load the CSV file`
- `data = pd.read_csv('Dataset.csv')`
- `# Convert the 'date' column to datetime`
- `data['Date'] = pd.to_datetime(data['Date'])`
- `# Sort the data by date`
- `data = data.sort_values(by='Date')`
- `# Calculate total sales per customer`
- `data['Total_Sales'] = data['S-P1'] + data['S-P2'] + data['S-P3'] + data['S-P4']`
- `# Calculate the average order value (AOV) per customer`
- `data['AOV'] = data['Total_Sales'] / (data['Q-P1'] + data['Q-P2'] + data['Q-P3'] + data['Q-P4'])`
- `# You can plot and analyze customer behavior here`
- `# For example, you can plot the AOV trend over time`
- `plt.figure(figsize=(12, 6))`
- `plt.plot(data['Date'], data['AOV'], label='Average Order Value (AOV)')`
- `plt.xlabel('Date')`
- `plt.ylabel('AOV')`
- `plt.title('Average Order Value (AOV) Trend Over Time')`
- `plt.legend()`
- `plt.show()`

OUTPUT:



**“ BUSINESS OPPORTUNITIES
ARE LIKE BUSES. THERE'S
ALWAYS ANOTHER ONE
COMING. ”**

Richard Branson

AREAS OF FOCUS

B2B MARKET SCENARIOS

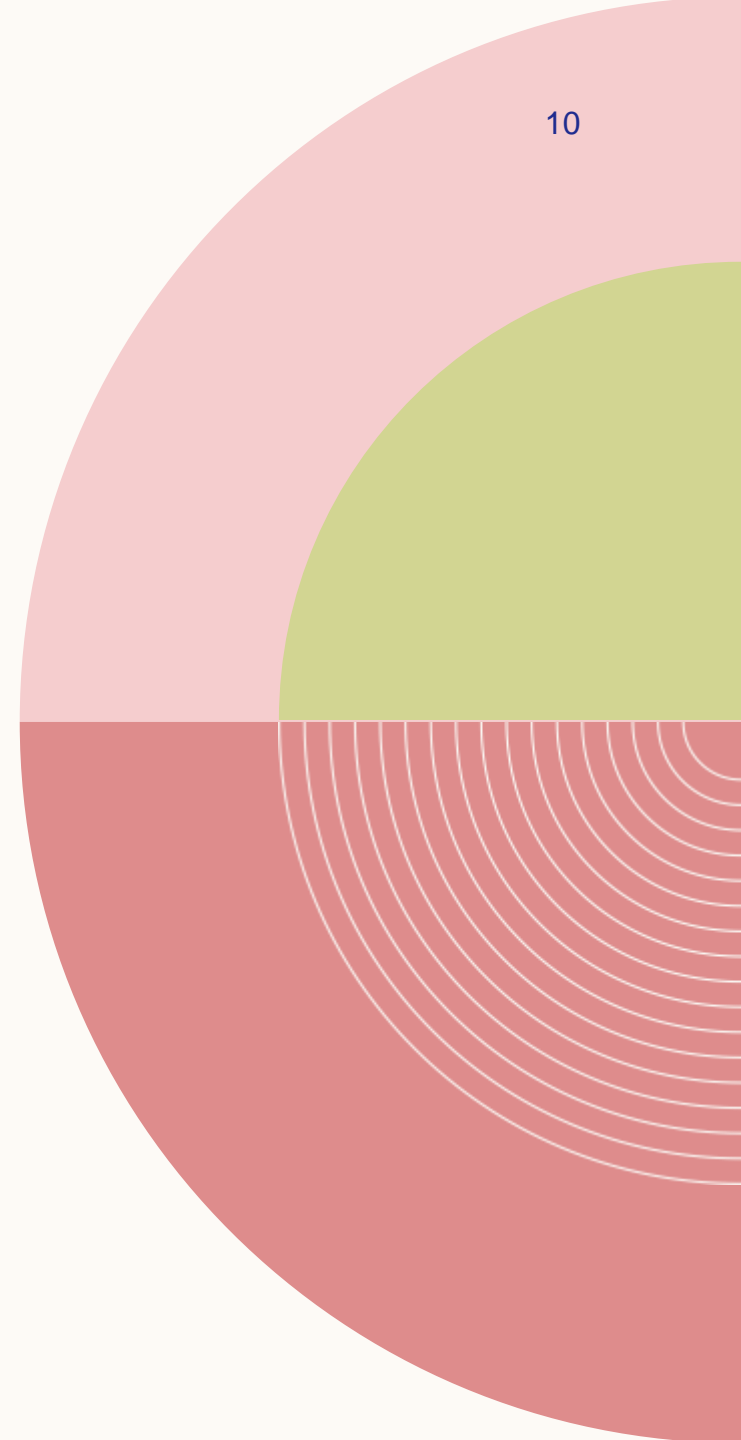
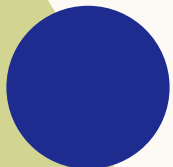
- Develop winning strategies to keep ahead of the competition
- Capitalize on low-hanging fruit to identify a ballpark value
- Visualize customer directed convergence

CLOUD-BASED OPPORTUNITIES

- Iterative approaches to corporate strategy
- Establish a management framework from the inside

SUMMARY

Incorporating machine learning algorithms to predict future sales trends or customer behaviors is a strategic initiative that harnesses the power of data and AI to inform critical business decisions. By analyzing historical data and patterns, these algorithms enable organizations to forecast sales, understand customer preferences, and tailor strategies for growth. This proactive approach not only enhances resource allocation and inventory management but also empowers businesses to engage customers more effectively and stay ahead in a competitive market landscape. Overall, the integration of machine learning in sales analysis promises to drive efficiency, profitability, and sustainable business growth.





THANK YOU

V. Varun Aravind

810021205096

AUBIT – Trichy