

ANALYSIS OF PROMOTIONS ON RETAIL BEER VOLUMES



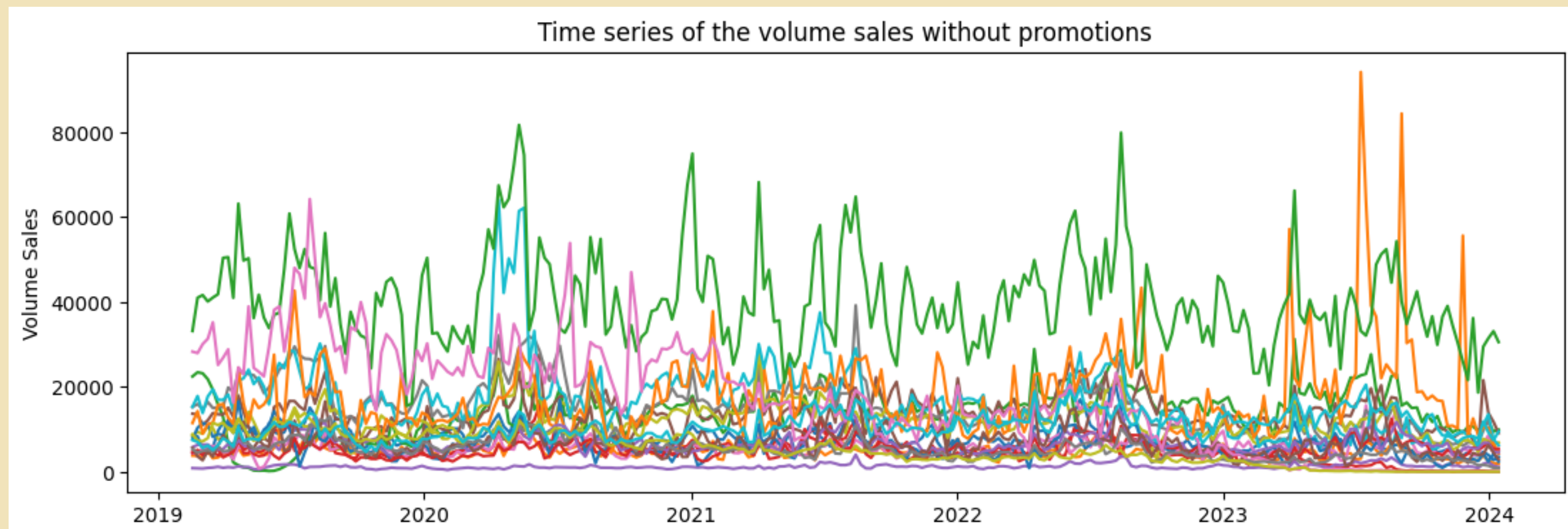
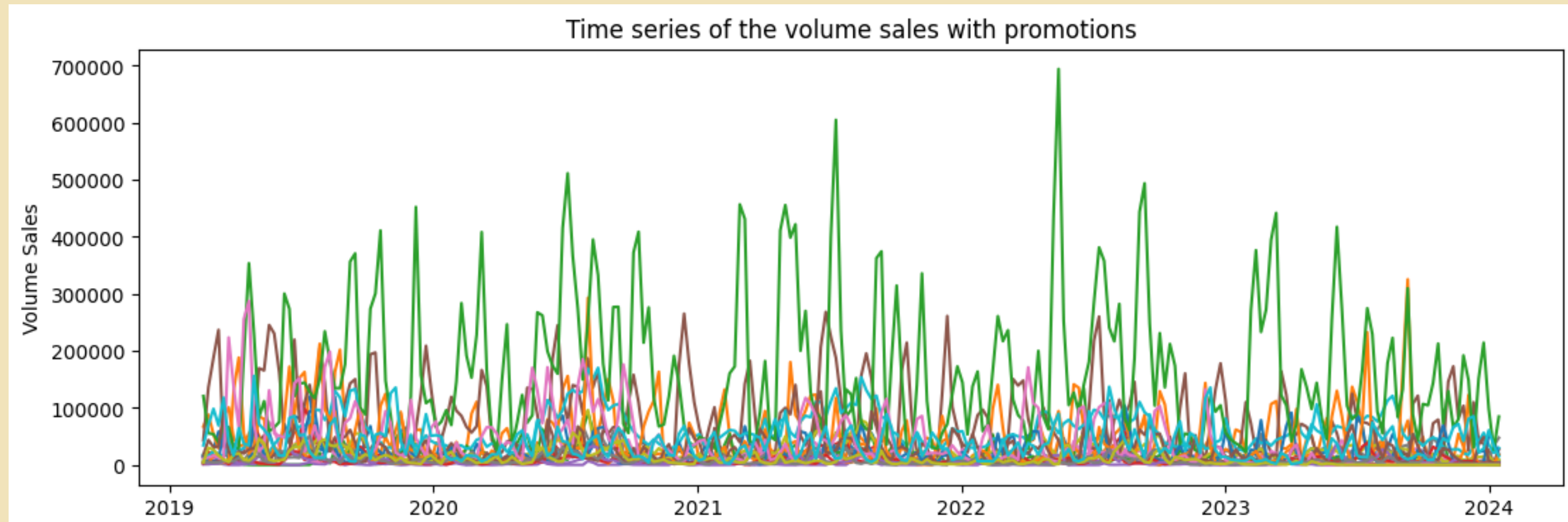
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THE DATA

- Weekly time-series of volumes and sales in Italian Supermarkets of the **top 20 best-selling beers**
- Collected from February 2019 to February 2024



THE DATA



How do **promotions** affect prices and volumes?

Different **brands** have different **behaviors**?

METHODS

- **PCA** applied to the time series, particularly to the volumes of the top 10 beers, in order to identify common drivers in sales
- **Linear regression** to assess sales behavior
- **Time series analysis:** seasonality and trends in sales time series
- Aggregate data over time: leading brands and types of promotions
- **LDA, QDA** and **K-Means** for data classification
- **Prediction models** to estimate beer volumes

REFERENCES

Dataset provided by Prof. Michele Azzone

Johnson, R.A. and Wichern, D.W., (2007). *Applied Multivariate Statistical Analysis (sixth edition)*, Prentice Hall, Upper Saddle River