Urban Retail Co. – Executive Summary (2022–2023)

This project focuses on inventory optimization and forecasting using real-world retail sales data. The goal is to design an efficient database schema, load and transform structured data, and generate insights to improve stock management. Using MySQL, we built a relational model including dimension and fact tables that capture product, store, calendar, pricing, and inventory details. Advanced SQL queries were used to analyze low stock levels, estimate reorder points, calculate turnover ratios, and evaluate overall inventory health. These insights will help decision-makers ensure product availability while minimizing overstock costs.

30	**5**	**583.37M**
Sum of total_products_tracked	Sum of total_stores_analyzed	Sum of total_revenue_period

15.80	**146.00**	**10.59M**
Sum of overall_forecast_mape_p...	Sum of avg_inventory_level	Sum of total_units_sold

MONTHLY DASHBOARD
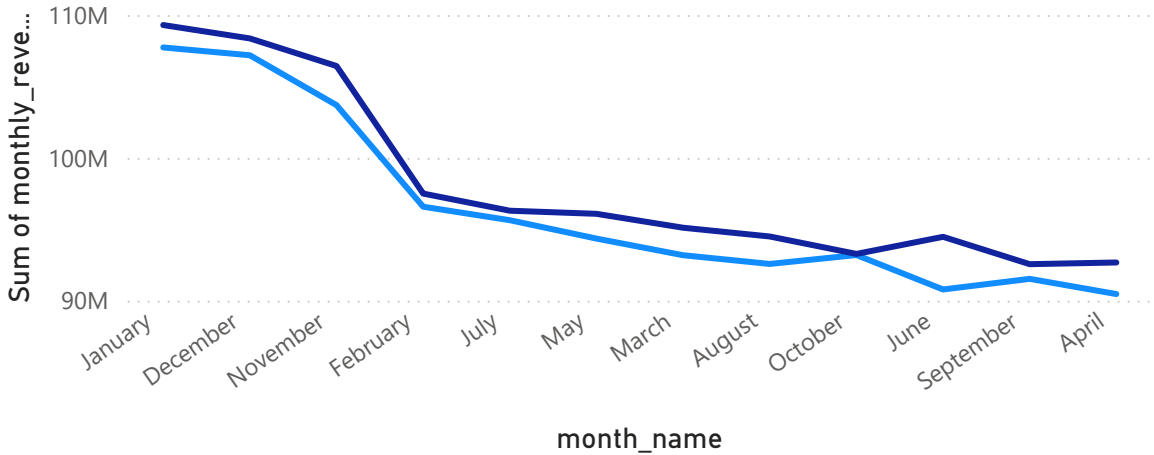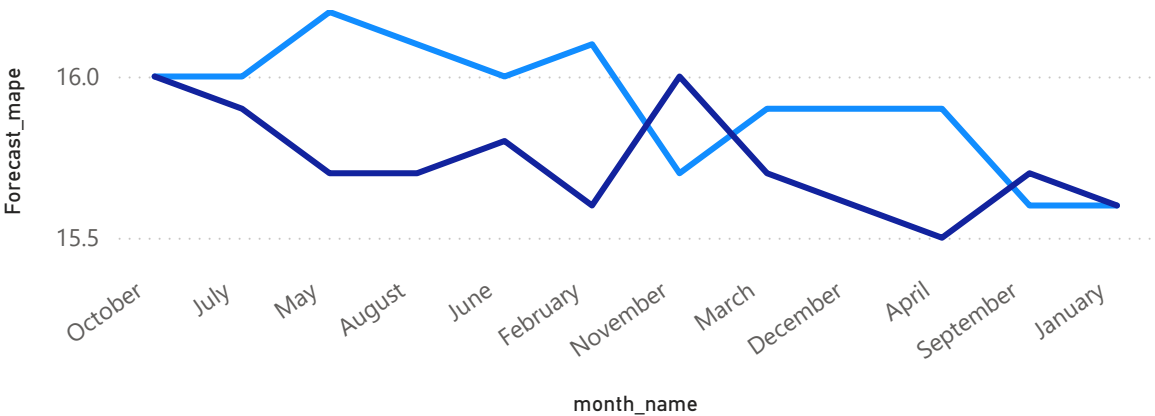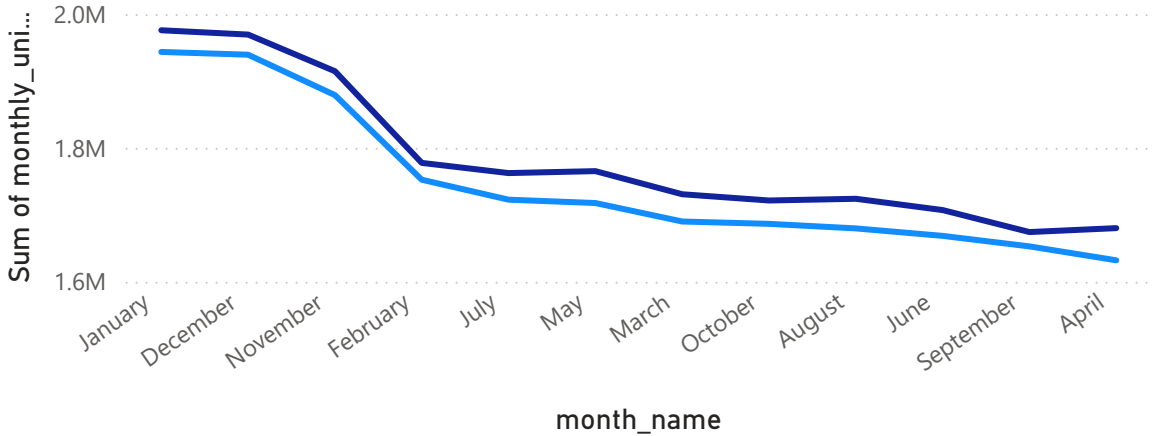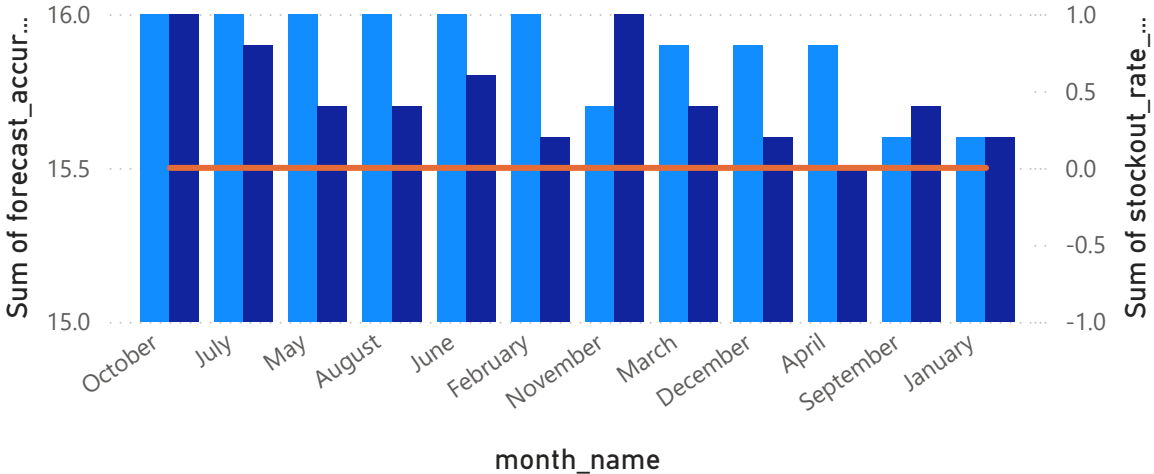
Products By Category

30

category ⌄

☐ Clothing
☐ Electronics
☐ Furniture
☐ Groceries
☐ Toys

CATEGORY DASHBOARD

Sum of total_revenue by category

● Sum of avg_inventory_level ● Sum of avg_turnover_ratio
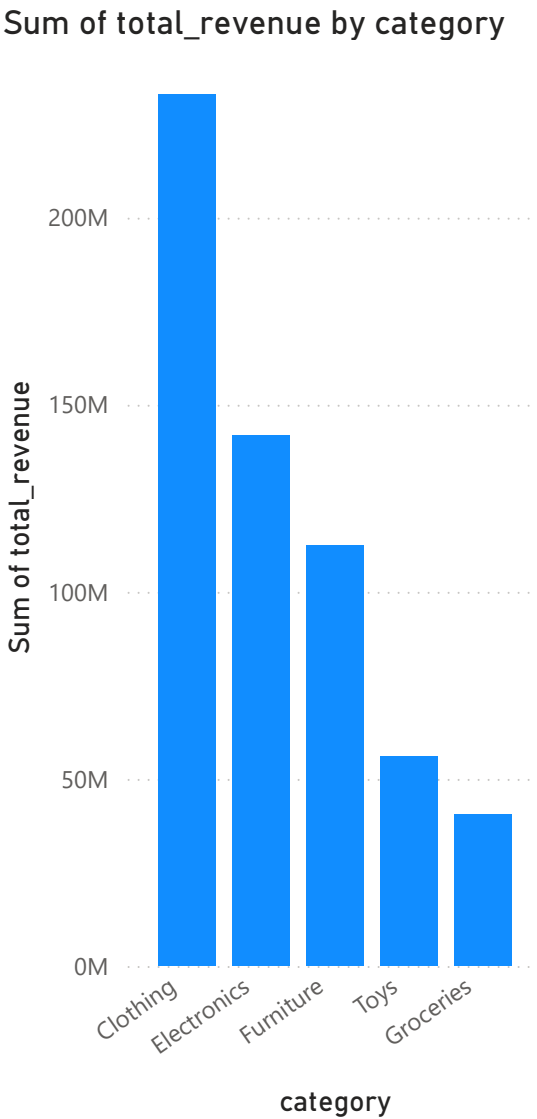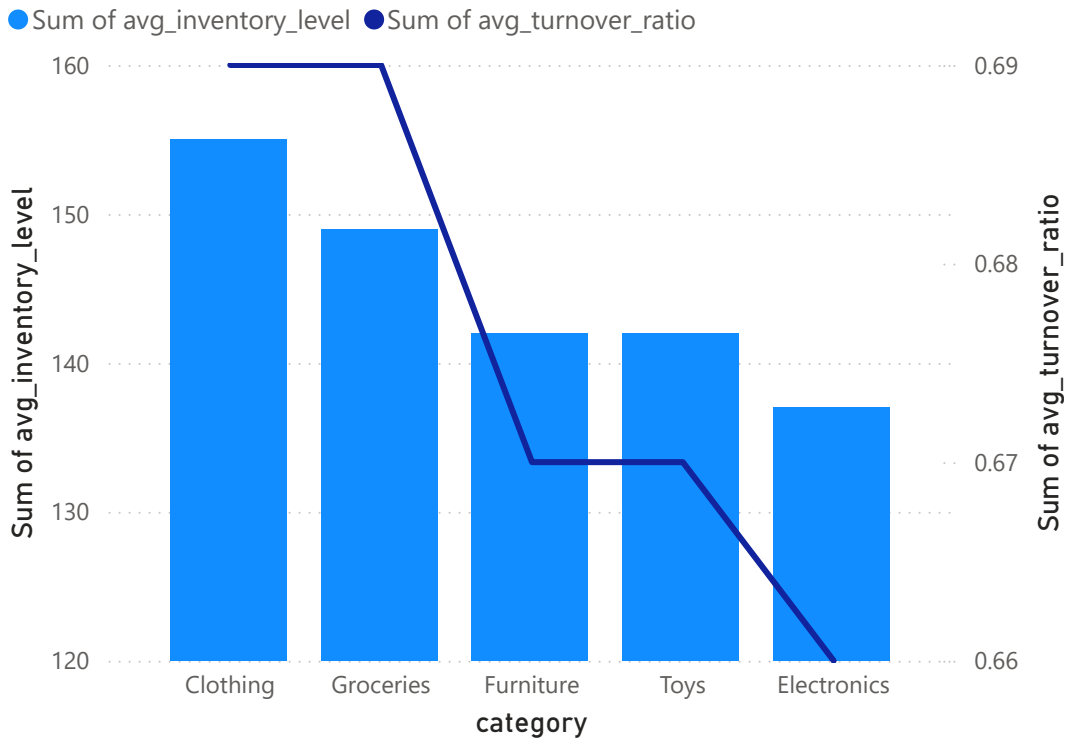
YEAR OVER YEAR (YOY) ANALYSIS

ABC ANALYSIS

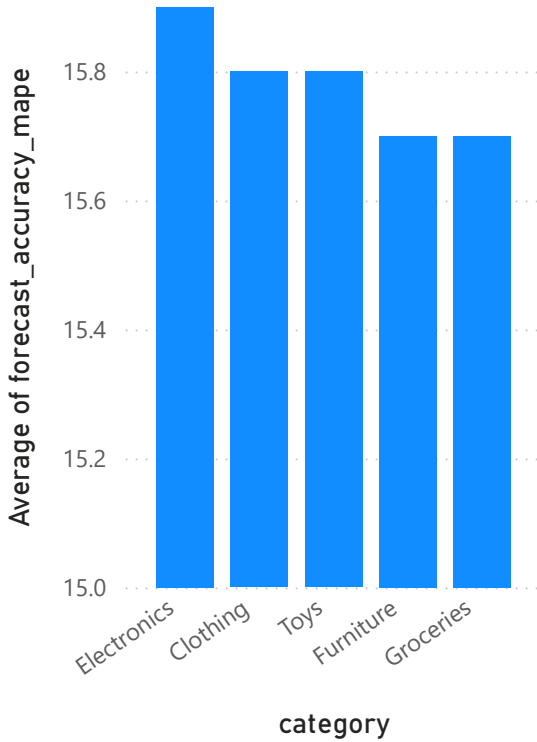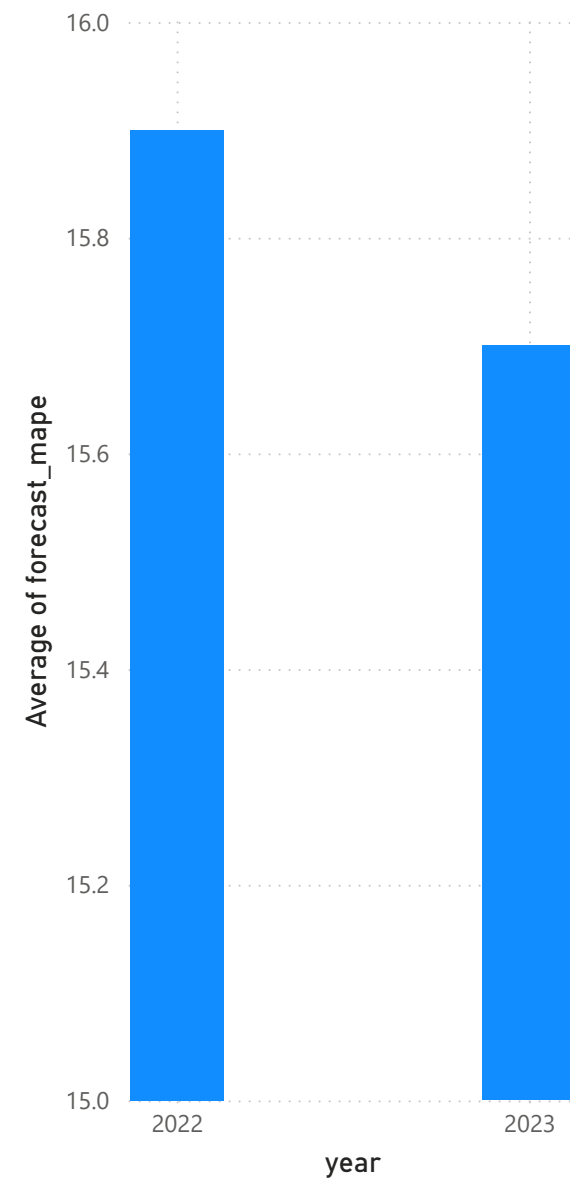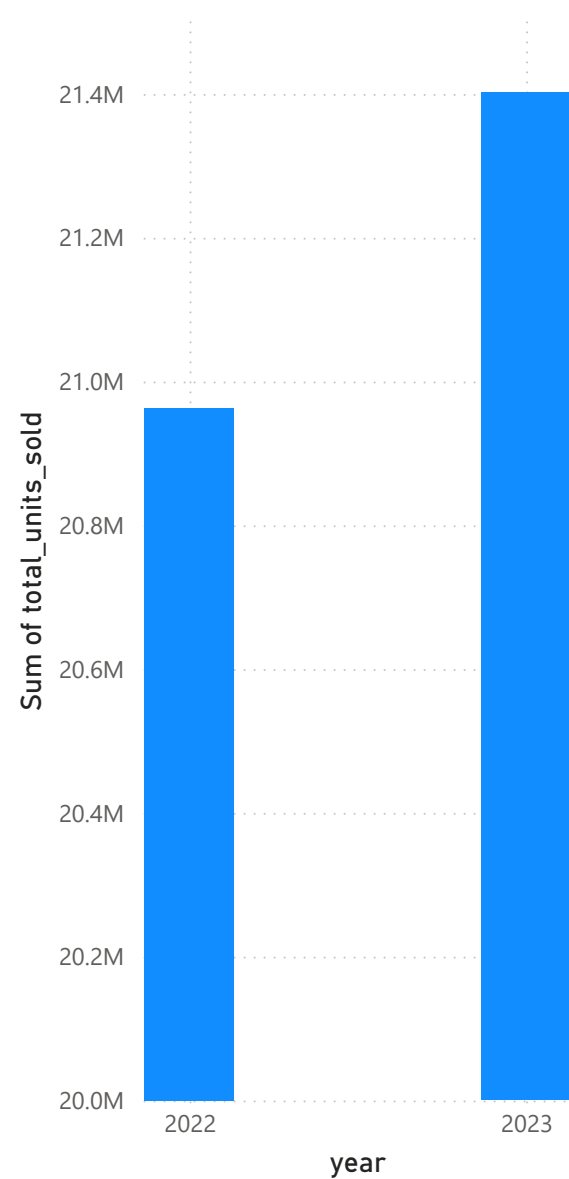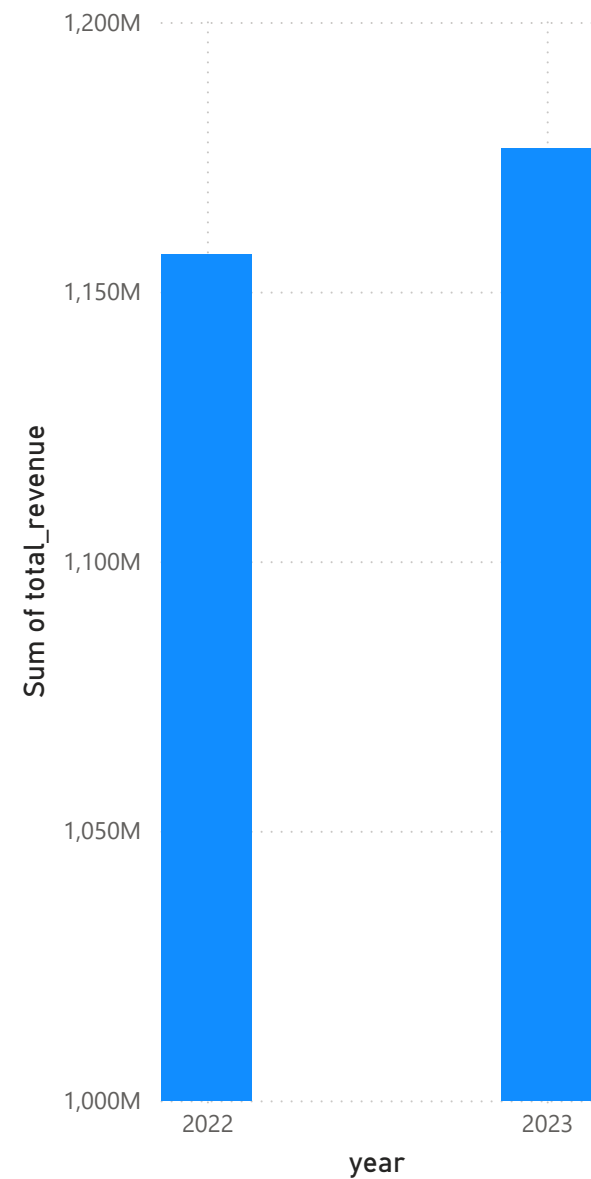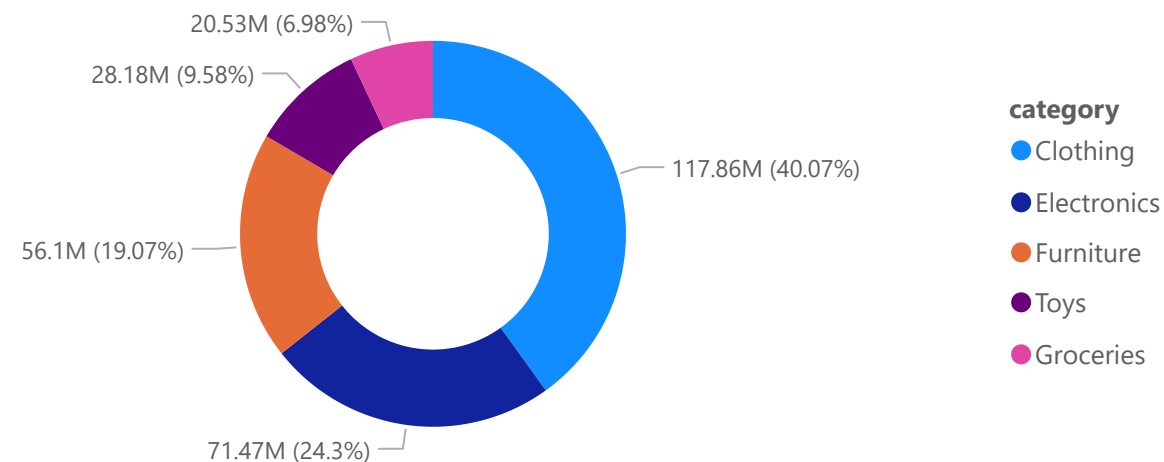| abc_classification	Sum of total_revenue	category	product_id
A - High Value	1,05,56,372.46	Clothing	P0016
A - High Value	1,07,68,865.79	Clothing	P0046
A - High Value	1,06,27,795.26	Clothing	P0057
A - High Value	1,08,98,967.11	Clothing	P0061
A - High Value	1,08,86,381.16	Clothing	P0066
A - High Value	1,04,29,999.87	Clothing	P0069
A - High Value	1,06,41,654.03	Clothing	P0125
A - High Value	1,04,67,641.20	Clothing	P0126
A - High Value	1,10,44,694.86	Clothing	P0133
A - High Value	1,07,75,112.29	Clothing	P0178
A - High Value	1,07,57,701.15	Clothing	P0187
B - Medium Value	90,46,210.54	Electronics	P0031
B - Medium Value	90,66,669.98	Electronics	P0171
B - Medium Value	90,38,645.39	Electronics	P0183
C - Low Value	88,83,565.19	Electronics	P0068
C - Low Value	88,30,028.80	Electronics	P0070
C - Low Value	89,65,041.34	Electronics	P0085
C - Low Value	87,38,290.91	Electronics	P0159
C - Low Value	88,99,248.69	Electronics	P0175
A - High Value	94,31,117.84	Furniture	P0067
A - High Value	94,13,388.40	Furniture	P0079
A - High Value	93,93,868.55	Furniture	P0116
B - Medium Value	93,83,797.59	Furniture	P0129
B - Medium Value	92,21,839.22	Furniture	P0149
B - Medium Value	92,59,355.27	Furniture	P0153
A - High Value	1,01,41,930.51	Groceries	P0094
A - High Value	1,03,87,575.71	Groceries	P0166
Total	**29,41,40,414.55**		

Sum of total_revenue by category

- 20.53M (6.98%)
- 28.18M (9.58%)
- 117.86M (40.07%)
- 56.1M (19.07%)
- 71.47M (24.3%)

category
- Clothing
- Electronics
- Furniture
- Toys
- Groceries

Sum of total_revenue by abc_classification

- 44.32M (15.07%)
- 64.32M (21.87%)
- 185.51M (63.07%)

abc_classification
- A - High Value
- B - Medium Value
- C - Low Value
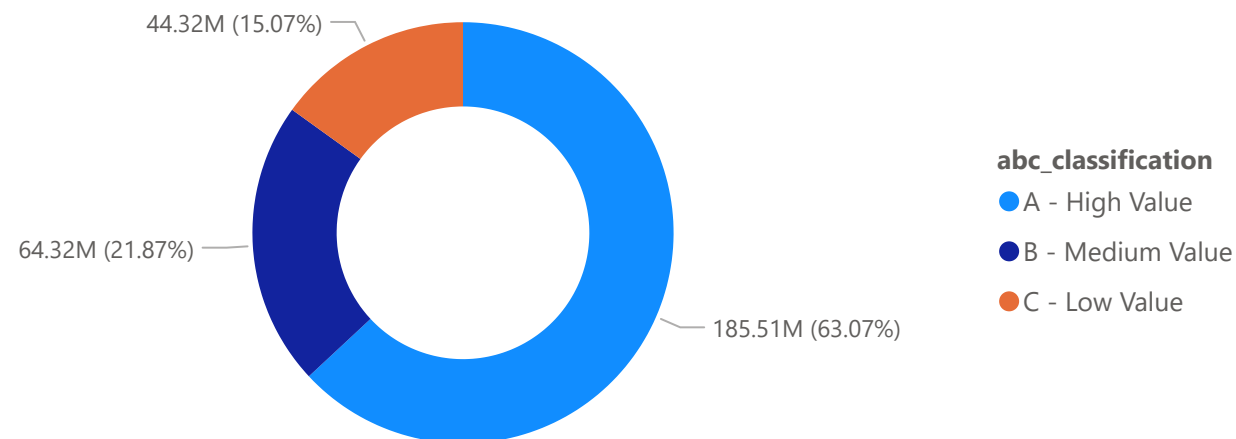
INVENTORY TURNOVER ANALYSIS

Turnover Ratio by Product

movement_classification ● Fast Moving ● Medium Moving ● Slow Moving
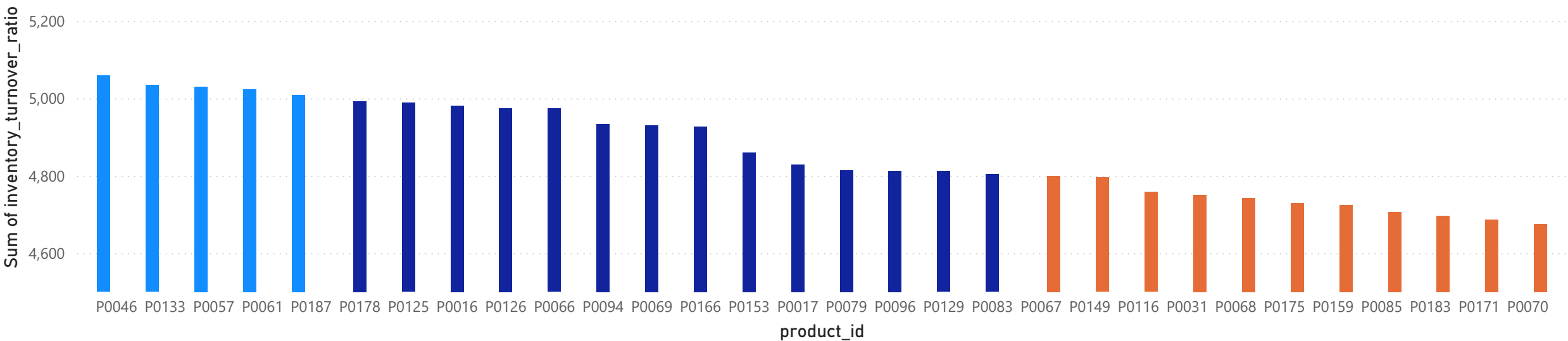
movement_classification	Sum of inventory_turnover_ratio	category
Fast Moving	25,155.52	Clothing
Medium Moving	29,841.88	Clothing
Slow Moving	37,712.68	Electronics
Medium Moving	14,487.20	Furniture
Slow Moving	14,353.40	Furniture
Medium Moving	9,861.04	Groceries
Medium Moving	14,445.56	Toys
Total	**1,45,857.28**	

Sum of avg_inventory_level	category	movement_classification
3,110.03	Clothing	Fast Moving
3,737.02	Clothing	Medium Moving
4,422.45	Electronics	Slow Moving
1,697.89	Furniture	Medium Moving
1,710.02	Furniture	Slow Moving
1,197.09	Groceries	Medium Moving
1,712.13	Toys	Medium Moving
17,586.63		

SEASONAL DEMAND ANALYSIS

category	Sum of avg_monthly_sales	Sum of overall_avg_sales	seasonality
Clothing	3,091.00	3,522.00	Autumn
Clothing	2,087.00	2,348.00	Spring
Clothing	3,117.00	3,522.00	Summer
Clothing	5,797.00	4,696.00	Winter
Electronics	2,164.00	2,151.00	Autumn
Electronics	1,427.00	1,434.00	Spring
Electronics	2,144.00	2,151.00	Summer
Electronics	2,831.00	2,868.00	Winter
Furniture	1,683.00	1,686.00	Autumn
Furniture	1,134.00	1,124.00	Spring
Furniture	1,689.00	1,686.00	Summer
Furniture	2,221.00	2,248.00	Winter
Groceries	565.00	606.00	Autumn
Groceries	381.00	404.00	Spring
Groceries	732.00	606.00	Summer
Groceries	748.00	808.00	Winter
Toys	841.00	849.00	Autumn
Toys	564.00	566.00	Spring
Toys	853.00	849.00	Summer
Toys	1,130.00	1,132.00	Winter
Total	**35,199.00**	**35,256.00**	

Monthly Sales vs. Seasonality Index

- Average of avg_monthly_sales
- Average of seasonality_index
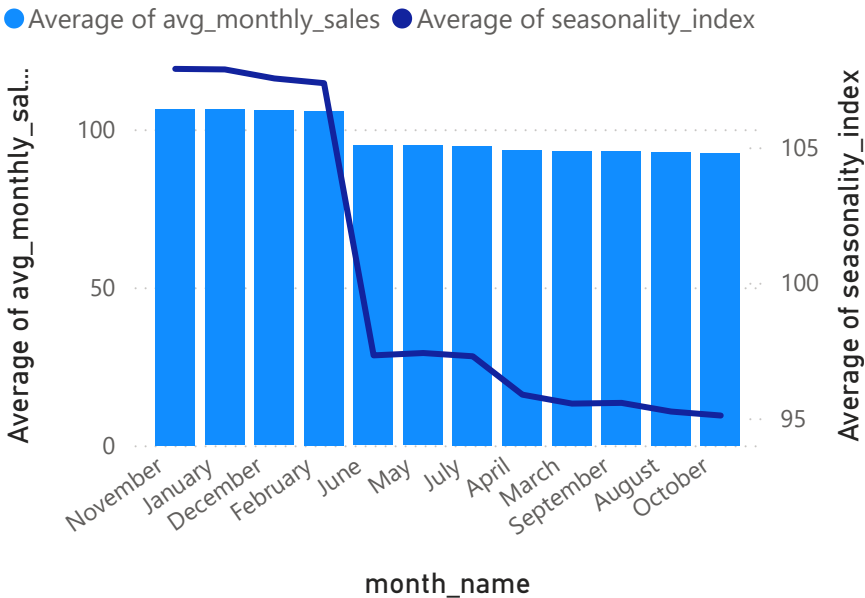
category	Sum of avg_monthly_sales	Sum of overall_avg_sales	seasonal_classification
Clothing	5,950.00	6,833.00	Low Season
Clothing	3,486.00	3,518.00	Normal Season
Clothing	4,656.00	3,737.00	Peak Season
Electronics	8,566.00	8,604.00	Normal Season
Furniture	6,727.00	6,744.00	Normal Season
Groceries	181.00	202.00	Low Season
Groceries	1,628.00	1,717.00	Normal Season
Groceries	617.00	505.00	Peak Season
Toys	3,388.00	3,396.00	Normal Season
Total	**35,199.00**	**35,256.00**	

DEMAND FORECAST ANALYSIS

15.73

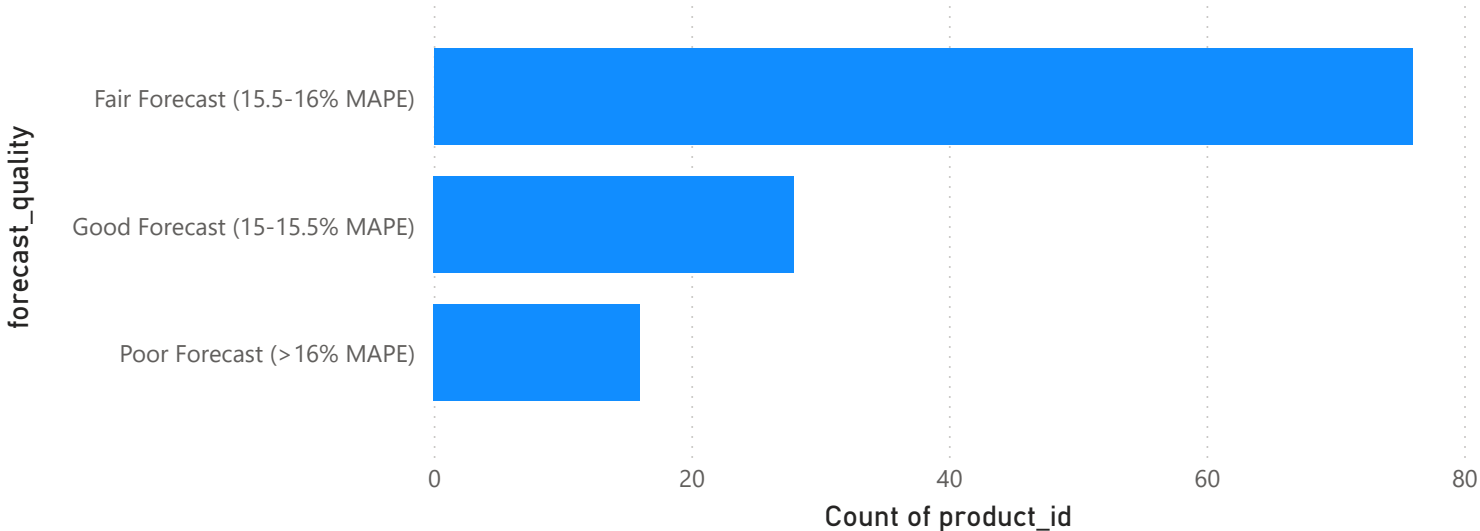Average of mape_percent
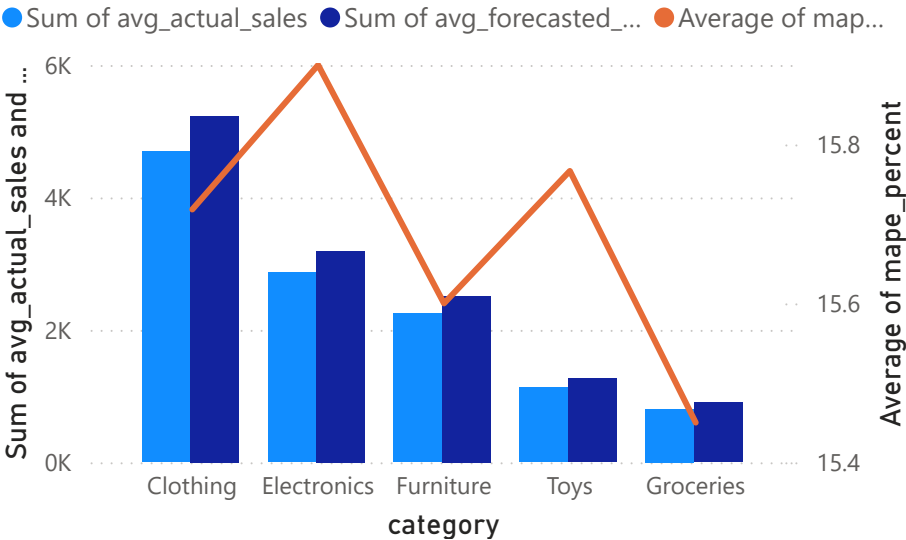
13.10K

Sum of avg_forecasted_sales

11.75K

Sum of avg_actual_sales

Count of product_id by forecast_quality

Mape Percent Analysis

WEATHER AND COMPETITOR PRICE ANALYSIS

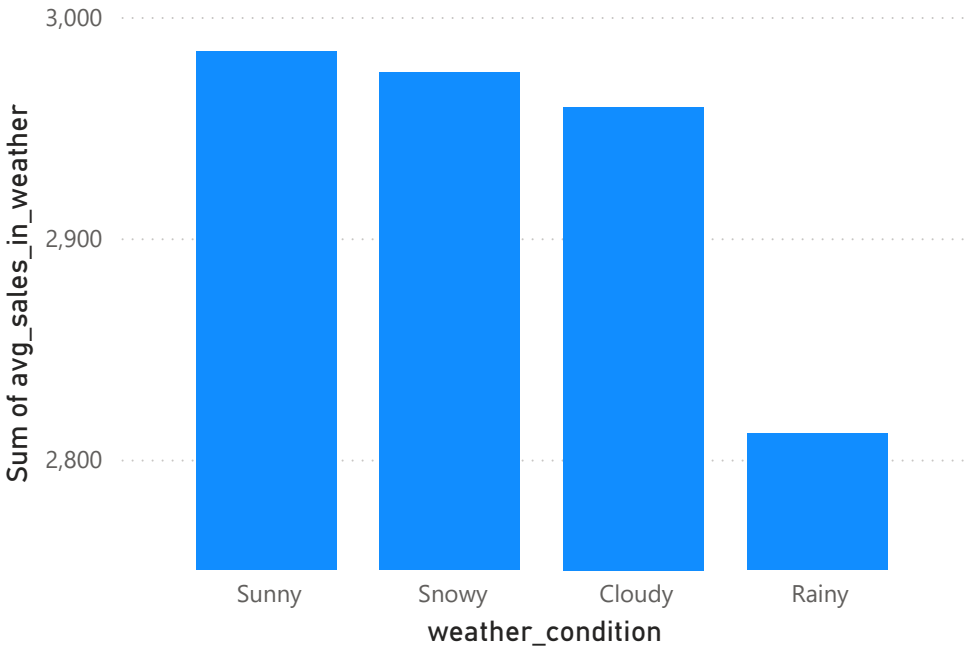|		
−0.01	**−17.90**	**0.03**
Average of weather_impact_percent	Min of weather_impact_percent	Average of price_premium_percent

Sales By Weather

Price Premium percent