**Superstore Sales – Forecasting & Predictive Measures**

**Introduction**

Predictive analytics empowers businesses to anticipate future outcomes and plan strategically. This project applies advanced analytics techniques in Power BI using the Superstore Sales Dataset. The analysis covers two years of historical data, generates a 15-day sales forecast, and evaluates operational performance through KPIs such as delivery time.

**Dataset Overview**

* Dataset: Superstore Sales Dataset
* Time Period: 2 years (2019–2020)
* Key Fields: Order Date, Ship Date, Sales

The dataset provides both sales and logistics details, enabling forecasting and operational insights.

**Data Preparation for Forecasting**

To ensure accurate forecasting, sales were summarized by date using DAX:

Sales forecast =

SUMMARIZE(

SuperStore\_Sales\_Dataset,

SuperStore\_Sales\_Dataset[Order Date],

"Total Sales", SUM(SuperStore\_Sales\_Dataset[Sales])

)

This daily sales summary formed the basis for time-series forecasting in Power BI.

**Forecasting in Power BI**

Using the summarized dataset, Power BI’s forecasting tool (based on Exponential Smoothing, ETS) was applied.

* Historical window: Jan 2019 – Dec 2020
* Forecast horizon: 15 days (Jan 2021)

A screenshot of a computer screen

AI-generated content may be incorrect.Confidence interval: Displayed as shaded bands

**Supporting Predictive KPI – Delivery Performance**

To assess operational efficiency, an average delivery time KPI was created:

Avg\_delivery =

DATEDIFF(

SuperStore\_Sales\_Dataset[Order Date],

SuperStore\_Sales\_Dataset[Ship Date],

DAY

)

**Result:** The average delivery time is 4 days.  
This indicates that on average, customer orders are shipped within four days, reflecting stable logistics performance.

**Validation of Forecast**

* The forecast for Jan 2021 (3K sales) aligns with similar post-holiday demand dips observed in Jan 2020.
* Seasonal patterns in the historical data validate the reliability of the prediction.
* 95 percent confidence intervals ensure uncertainty is factored into the forecast.

**Rollback Strategy**

* **If sales are less than expected**  
  → Buy fewer products and slow down ads so stock doesn’t pile up.
* **If sales are more than expected**  
  → Quickly get extra products from backup suppliers or speed up deliveries.

**Business Insights**

* **Seasonality**: Sales peak in Nov–Dec each year due to holiday demand.
* **Forecast**: A downward trend in early January 2021 with 3K expected sales.
* **Operational KPI**: Delivery times (Avg\_delivery) are stable, supporting customer satisfaction.

**Conclusion**

By combining Power BI’s forecasting capability with supporting KPIs, this project demonstrates how predictive analytics can be applied to the Superstore dataset. The 15-day sales forecast, delivery performance measure, and defined rollback strategies provide valuable insights for proactive business planning and operational efficiency.