

DAY 9 – POWER BI ADVANCED ANALYSIS (DAX & INTERACTIVITY)

Dataset: Superstore Sales Dataset

Tool Used: Power BI Desktop

Analysis Type: Advanced Data Visualization & DAX

1. Objective of Day 9

The objective of Day 9 was to enhance the existing Power BI dashboard using **advanced DAX measures** and **interactive features** such as drill-through, tooltips, ranking, and conditional formatting. This day focused on making the dashboard more analytical, dynamic, and business-ready.

2. Importance of Advanced Power BI Features

Advanced Power BI features are important because they:

- Enable deeper business insights
- Allow comparison across time periods
- Improve dashboard interactivity
- Help decision-makers explore data independently
- Make dashboards interview and portfolio ready

3. Advanced DAX Measures Implemented

3.1 Year-over-Year (YoY) Sales Growth

```
YoY Sales Growth =  
VAR CurrentYearSales = [Total Sales]  
VAR PreviousYearSales =  
    CALCULATE(  
        [Total Sales],  
        SAMEPERIODLASTYEAR('superstore_clean'[Order Date])  
    )  
RETURN  
CurrentYearSales - PreviousYearSales
```

Observation:

- Measures the absolute change in sales compared to the previous year.
- Positive values indicate growth, negative values indicate decline.

3.2 Year-over-Year Sales Growth Percentage

```
YoY Sales Growth % =  
DIVIDE(  
    [YoY Sales Growth],
```

```

CALCULATE(
    [Total Sales],
    SAMEPERIODLASTYEAR('superstore_clean'[Order Date])
),
0
)

```

Observation:

- Shows the rate of growth rather than absolute change.
- Useful for comparing performance across years.

3.3 Ranking Sub-Categories by Profit

```

Profit Rank =
RANKX(
    ALL('superstore_clean'[Sub-Category]),
    [Total Profit],
    ,
    DESC
)

```

Observation:

- Ranks sub-categories based on total profit.
- Helps identify top and bottom performers.

4. Advanced Interactivity Features

4.1 Drill-Through Analysis

- Created a drill-through page for detailed category analysis
- Enabled users to right-click a category and explore sub-category performance
- Added navigation buttons for better usability

Business Value:

- Allows deep analysis without cluttering the main dashboard

4.2 Tooltip Pages

- Designed custom tooltip pages
- Displayed KPIs such as Sales, Profit, and Profit Margin
- Activated tooltips on category-level visuals

Business Value:

- Provides contextual insights without navigating away from the main view

5. Conditional Formatting

- Applied conditional formatting to highlight:

- Loss-making products (red)
- Profitable products (green)

Business Value:

- Instantly draws attention to problem areas
- Improves readability of tables and matrices

6. Dashboard Design & Performance Optimization

Design Improvements

- Consistent color scheme
- Clear visual titles
- Balanced layout with minimal clutter

Performance Considerations

- Used measures instead of calculated columns
- Limited number of visuals per page
- Optimized slicer usage

Key Insights from Day 9

- Year-over-year analysis reveals true business growth
- Ranking helps prioritize high-performing products
- Interactive features enhance user exploration
- Advanced DAX adds analytical depth to dashboards

Business Recommendations

- Focus on categories with consistent YoY growth
- Investigate declining segments early
- Use ranking to guide inventory and marketing decisions
- Leverage drill-through for detailed performance reviews

Key Learnings from Day 9

- Writing advanced DAX measures
- Understanding time intelligence functions
- Implementing drill-through and tooltips
- Designing interactive and efficient dashboards

