MOBILE SALES DASHBOARD

PROJECT DOCUMENTATION

📊 PROBLEM STATEMENT

A mobile retail business needs to analyze sales performance across multiple dimensions to understand business health, customer behavior, and market trends. The company sells various mobile phone brands across major Indian cities through different payment methods and wants to make data-driven decisions to optimize inventory, marketing strategies, and customer satisfaction.

Business Challenges

- **Lack of visibility** into sales performance across different time periods
- **Difficulty in identifying** top-performing products and underperforming models
- **Need to understand** customer payment preferences and regional sales patterns
- **Requirement to track** sales trends and compare year-over-year performance
- **Need to analyze** customer satisfaction levels and their impact on business

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🎯 KPI's REQUIREMENT

We need to analyze key indicators for our mobile sales data to gain insights into our business performance. Specifically, we want to calculate the following metrics:

1. Total Sales (Revenue)

The sum of total revenue generated from all mobile sales, calculated by multiplying Units Sold by Price Per Unit for each transaction.

DAX Formula:

dax

```
Total_Sales = SUMX(Sales_Data, Sales_Data[Units Sold] * Sales_Data[Price Per Unit])
```

2. Total Quantity Sold

The sum of all units of mobile phones sold across all transactions.

DAX Formula:

dax

```
Total_Quantity = SUM(Sales_Data[Units Sold])
```

3. Total Transactions

The total number of sales orders/transactions placed by customers.

DAX Formula:

dax

```
Transactions = COUNTROWS(Sales_Data)
```

4. Average Price Per Unit

The average selling price of mobile phones, helping understand pricing trends and product mix.

DAX Formula:

dax

```
Average_Price = AVERAGE(Sales_Data[Price Per Unit])
```

5. Month-to-Date Sales (MTD)

Cumulative sales from the beginning of the current month to the present date, enabling real-time performance tracking.

DAX Formula:

dax

```
MTD = TOTALMTD([Total_Sales], Custom_Calendar[Date].[Date])
```

6. Quarter-to-Date Sales (QTD)

Cumulative sales from the beginning of the current quarter to the present date.

DAX Formula:


dax

```
QTD = TOTALQTD([Total_Sales], Custom_Calendar[Date].[Date])
```

7. Year-to-Date Sales (YTD)

Cumulative sales from the beginning of the current year to the present date.

DAX Formula:


dax

```
YTD = TOTALYTD([Total_Sales], Custom_Calendar[Date].[Date])
```

8. Same Period Last Year (SPLY)

Sales from the equivalent period in the previous year, enabling year-over-year comparison.

DAX Formula:


dax

```
Same Period Last Year = CALCULATE([Total_Sales], SAMEPERIODLASTYEAR(Custom_Calendar[Date]))
```

📈 CHARTS REQUIREMENT

We would like to visualize various aspects of our mobile sales data to gain insights and understand key trends. We have identified the following requirements for creating charts:

1. Geographic Sales Distribution

Chart Type: Filled Map with Bubble Size

Purpose: Display total sales across different cities in India

Fields:

- Location: City
- Bubble Size: Total_Sales

Insight: Identifies high-performing and underperforming geographic markets, helps in regional marketing strategy and inventory distribution decisions.

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2. Monthly Quantity Trend Analysis

Chart Type: Line Chart

Purpose: Track the trend of total quantity sold month-over-month throughout the year

Fields:

- X-axis: Date (Month from Custom_Calendar)
- Y-axis: Total_Quantity

Insight: Reveals seasonal patterns, peak sales months, and inventory planning opportunities. Shows whether sales volume is growing or declining over time.

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3. Customer Satisfaction by Rating Status

Chart Type: Funnel Chart

Purpose: Show distribution of customer ratings categorized as Good (≥4), Average (>2 and <4), and Poor (≤2)

Fields:

- Category: Rating_Status
- Values: Count of Customer Ratings

Calculated Column:


dax

```
Rating_Status = IF(Sales_Data[Customer Ratings]>=4, "Good",
                IF(Sales_Data[Customer Ratings]>2, "Average", "Poor"))
```

Insight: Measures customer satisfaction levels and identifies areas for service improvement. High percentage of "Poor" ratings signals quality or service issues.

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4. Payment Method Preference Distribution

Chart Type: Pie Chart

Purpose: Show percentage distribution of transactions across different payment methods

Fields:

- Legend: Payment Method
- Values: Transactions (displayed as percentages)

Insight: Understands customer payment preferences (UPI, Debit Card, Credit Card, Cash), helps optimize payment gateway partnerships and promotional strategies.

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5. Top 3 Mobile Models by Revenue

Chart Type: Horizontal Clustered Bar Chart

Purpose: Highlight the best-selling mobile models based on total sales revenue

Fields:

- Y-axis: Mobile Model
- X-axis: Total_Sales
- Filter: Top 3 by Total_Sales

Insight: Identifies star products that drive maximum revenue, guides inventory stocking decisions and promotional focus.

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6. Weekly Sales Pattern Analysis

Chart Type: Area Chart

Purpose: Display sales performance across different days of the week

Fields:

- X-axis: Day Name (from Custom_Calendar)
- Y-axis: Total_Sales

Insight: Reveals which days of the week generate the most sales, helps optimize staffing, promotions, and marketing campaigns timing.

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7. Brand Performance Summary

Chart Type: Table

Purpose: Provide detailed breakdown of sales and transaction metrics by brand

Fields:

- Columns: Brand, Total_Sales, Transactions

Insight: Compares performance across different mobile brands (Apple, Samsung, OnePlus, Vivo), identifies which brands are most popular with customers.

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8. Month-to-Date Cumulative Trend

Chart Type: Line Chart

Purpose: Show progressive accumulation of sales throughout the selected month/quarter/year

Fields:

- X-axis: Date (from Custom_Calendar)
- Y-axis: MTD measure
- Additional: Total_Sales for comparison

Insight: Tracks real-time performance against targets, enables quick identification if sales are falling behind projections.

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9. Year-over-Year Comparison - Annual View

Chart Type: Clustered Column Chart

Purpose: Compare current year sales with same period last year by year

Fields:

- X-axis: Year
- Y-axis: Total_Sales and Same Period Last Year

Insight: Measures business growth year-over-year, identifies if the business is expanding or contracting.

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10. Year-over-Year Comparison - Quarterly View

Chart Type: Clustered Column Chart

Purpose: Compare current year sales with same period last year by quarter

Fields:

- X-axis: Quarter
- Y-axis: Total_Sales and Same Period Last Year

Insight: Identifies which quarters show improvement or decline compared to previous year, helps understand seasonal business cycles.

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11. Year-over-Year Comparison - Monthly View

Chart Type: Clustered Column Chart

Purpose: Compare current year sales with same period last year by month

Fields:

- X-axis: Month
- Y-axis: Total_Sales and Same Period Last Year

Insight: Provides granular month-by-month comparison to identify specific months with growth opportunities or concerns.

🎛️ INTERACTIVE FEATURES

Filter Slicers

- **Mobile Model Dropdown:** Filter entire dashboard by specific phone models

- **Payment Method Dropdown:** Analyze sales by payment type
- **Brand Dropdown:** Focus on specific brand performance
- **Month Button Slicer:** Navigate through different months with button-style interface
- **Year/Quarter/Month/Day Slicer:** Drill down to specific time periods in MTD and SPLY reports

Cross-Filtering Control

Edit Interactions configured to prevent Month slicer from affecting the Total Quantity by Month line chart. Ensures proper visual independence where needed.

Page Navigation

- **Home Dashboard:** Main overview with all key metrics and visuals
- **MTD Report:** Month-to-date performance tracking
- **Same Period Last Year:** Year-over-year comparison analysis
- **Summary/Q&A:** Natural language query interface for ad-hoc analysis

Q&A Natural Language Interface

Enables users to ask questions like:

- "Top cities by average price"
- "What is the total sales by city"
- "Show me total sales for the last year"
- "Top mobile models by MTD"
- "What is the total unit sold"

🗄️ DATA MODEL ARCHITECTURE

Fact Table: Sales_Data

Contains transactional data with fields:

- Date
- Units Sold
- Price Per Unit
- Customer Ratings
- Mobile Model
- Payment Method
- Brand
- City

Dimension Table: Custom_Calendar

Date dimension table containing:

- Date (primary key)
- Year
- Quarter
- Month
- Day
- Day Name

Relationship: One-to-Many from Custom_Calendar[Date] to Sales_Data[Date]

✅ SUCCESS METRICS

This dashboard enables the business to:

1. **Monitor real-time performance** through MTD/QTD/YTD metrics
2. **Identify top-performing products and regions** for focused marketing
3. **Understand customer preferences** in payment methods and brands
4. **Track year-over-year growth** to measure business expansion
5. **Analyze customer satisfaction** through rating distributions
6. **Optimize inventory** based on geographic and product performance
7. **Make data-driven decisions** through interactive filtering and drill-down capabilities

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📋 PROJECT SUMMARY

Data Period: 2021 - 2024 (4 years, 1461 days)

Key Achievements:

- Total Sales: ₹769M
- Total Transactions: 4K
- Total Quantity Sold: 19K units
- Average Price: ₹40.11K

Top Performing Cities: Delhi, Mumbai, Lucknow, Chennai, Bangalore

Top Brands: Apple, OnePlus, Samsung, Vivo

Payment Methods: UPI (26.36%), Debit Card (24.22%), Credit Card (24.69%), Cash (24.72%)

Dashboard designed and developed using Microsoft Power BI Data Analysis & Visualization Project