

Case Study: Improving Sales Insights for a Beverage Retailer

Background

You have been hired as a Data Analyst for **JustDrinks Ltd**, a fictional retailer specializing in beverages. The company operates multiple stores across regions, sources products from various vendors, and tracks product sales across brands. The management seeks to enhance their understanding of sales operations through data-driven insights.

Problem Statement

The management has identified the following challenges:

1. Data inconsistencies, including missing values and poorly formatted columns.
2. A lack of clarity on key metrics such as revenue trends, top-performing regions, and brand contributions.
3. Limited actionable insights from existing sales data.

Your tasks:

1. Clean and prepare the data for analysis.
 2. Establish relationships between tables to model the data effectively.
 3. Use DAX to calculate essential metrics.
 4. Create meaningful visualizations to present actionable insights.
 5. Recommend additional data points that could improve business performance.
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Hints

Hint 1: Data Cleaning

1. **Identify and Resolve Data Issues:**
 - Replace missing values in the "Region" table CityName column with "Unknown".
 - In the **Brand** table:

- Create two new columns called Description and Size by splitting the Description_size column. Delete the original Description_size column after the split.
 - In the **Vendor** table:
 - Use the VendorInformation column to create two new columns: VendorNumber and VendorName. Split the column using a delimiter and remove the original column.
 - Ensure all text/string columns are formatted in **Proper Case** (e.g., "dry gulch" → "Dry Gulch").
 - Carry out any additional cleaning that is required across the tables.
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Hint 2: Data Modeling

- Establish relationships between tables:
 - **Vendor** ↔ **Purchased**: Link via VendorNumber.
 - **Brand** ↔ **Purchased**: Link via Brand_id.
 - **Region** ↔ **Purchased**: Link via Store.
 - **Calendar** ↔ **Purchased**: Create a calendar table Using DAX Language

Hint 3: Data Analysis & Visualization

Using Power BI create Dax measures as needed and appropriate visualisations:

1. Calculate **Total Revenue** for the business.
2. Calculate the **Average Purchase Price per Item**.
3. Identify the **Top 5 Brands by Revenue**.
4. Analyze **Revenue by Region**, grouping by the CityName column.
5. Create a **Time-Series Analysis** chart using PODate to show revenue trends over time.
6. **Vendor Contributions** as a percentage share of the total revenue.

Use appropriate charts to visualize as needed. Be creative.

Chief Finance Officer's Expectations

The CFO has requested an **executive dashboards** to address the following:

1. What is the **total sales revenue** and the **percentage breakdown** of wine vs. spirits?
 2. What is the most **popular size** for wine and spirits based on total sales revenue and quantity sold?
 3. Which stores have the **highest and lowest average sales prices** for wine and spirits?
 4. Be creative! Present any additional insights you find valuable to help improve sales and operations.
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Task 5: Recommendations

The CFO has also asked for your opinion:

- Suggest additional data or variables you would recommend collecting to improve the business and explain why these data points are important.
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Final Deliverable

You would be doing a presentation on a call and you are expected to showcase:

1. Your approach to cleaning and modeling the data.
2. Key metrics calculated and visualizations created.
3. Insights derived, supported by visuals.
4. Recommendations for additional data collection if any, along with their potential business impact.