Project: Maven Market Data Analysis

Introduction:

The goal of the Maven Market project involves analysing data from various sources to derive insights and make informed business decisions. This data analysis project was conducted using Power BI, a powerful tool for visualizing and interpreting data. The goal of this project is to provide actionable insights to Maven Market stakeholders based on comprehensive data analysis.

Part 1: Data Preparation:

Data was prepared using the following steps:

Customer Table

i. Data from the MavenMarket_Customers csv file is imported and named as "Customers".
ii. Ensured accurate data types, including whole numbers for customer_id, and text for customer_acct_num and customer_postal_code columns respectivel columns respectively.
iii. Added a new column "Full_Name" by merging first_name and last_name.
iv. Created "birth_year" column extracting the year from the "birthdate" and formatting it as text.
v. Created a conditional column "has_children" based on the presence of children.

Products Table:

i. Data from the MavenMarket_Products csv file as "Products" is imported.
ii. Verified data types, including whole number for product_id, text for product_sku, and decimal numbers for product_retail_price and product_cost.
iii. Used statistics tools to find distinct product brands and names.
iv. Added a calculated column "discount_price" at 90% of the original retail price, rounded to 2 digits.
v. Calculated the average retail price by brand and name the new column "Avg Retail Price".
vi. Replace "null" values with zeros in "recyclable" and "low-fat" columns.

Stores Table:

i. Data from the MavenMarket_Stores csv file as "Stores" is imported.
ii. Ensured accurate data types, with whole numbers for store_id and region_id.
iii. calculated column "full_address" was added by merging store_city, store_state, and store_country.
iv. calculated column "area_code" was added by extracting characters before the dash in store_phone column.

Other Tables:

MavenMarket_Regions and MavenMarket_Calendar csv files were imported

i. Data validation was carried out to ensure accurate data types and perform necessary data manipulations.

Part 2: Building the Data Model:

i. Tables in the MODEL view were arranged with lookup tables above data tables.
ii. Relationships between tables were established using valid primary and foreign keys.
iii. Date fields and relevant columns were formatted & categorized for improved analysis.

Part 3: Implementing DAX Measures:

i. DAX was used to add calculated columns and measures for various metrics such as transaction details, revenue, profit, returns, and more.
ii. Measures were formatted as appropriate for clear visualization.

Part 4: Report Dashboard:

i. Report layout was designed with relevant visuals, including matrices, KPI cards, maps, charts, and gauges.
ii. Bookmarks and notes were utilized to highlight key insights and trends.
iii. Interactive features like drill-down and filters were added for enhanced user experience.

A concise, informative, Dynamic Report Dashboard was established.

Conclusion:

The Maven Market data analysis project leverages Power BI to transform raw data into actionable insights. By preparing the data, building a robust data model, implementing DAX measures, and constructing a comprehensive report, stakeholders can make informed decisions to optimize business operations and drive growth.

Data Source:

Course: Microsoft Power BI Desktop for Business Intelligence | Udemy