**Project Overview**

Objective: Analyse sales data and create a comprehensive dashboard to visualize the impact of promotions on revenue and evaluate sales performance.

**Data Source:**

**Analysis Approach**

1. Data Preparation and Exploration

• Identified relevant columns: 'user\_id', 'event\_date', 'channel', 'event\_type', 'product\_id', 'price', 'discount', etc.

• Explored the dataset for quality check, cleaned any inconsistencies or missing values.

2. Promotion Analysis

• Analysed the impact of promotions on sales:

• Defined metrics: total sales, revenue after discount, etc.

• Calculated metrics during promotion periods versus non-promotion periods.

• Visualized sales trends during promotions using line/bar charts.

3. Dashboard Creation

Created an interactive dashboard to visualize sales performance, customer insights, promotion/event performance and marketing effectiveness insights.

**Dashboard Components**

1. Promotion/event Performance Analysis:

• Line and bar chart showcasing sales trends during promotion periods for each product id.

• Line chart showcasing no. of event/promotion by week day.

• KPI cards displaying total sales, average discount, and revenue after discounts.

• Table with promotion details: promotion ID, dates, products, discounts.

2. Total Revenue Analysis:

• Calculated total revenue after discounts using 'TotalRevenueAfterDiscount' measure.

• Stacked column chart comparing revenue before and after discounts.

3. Geospatial Visualization:

• Map visual depicting sales distribution geographically.

• Highlighting regions or locations with higher sales.

**Technical Details**

• Used Power BI for data visualization and analysis.

• Employed DAX expressions for calculations (e.g., 'TotalRevenueAfterDiscount', 'Discounted\_Price').

**Dashboard Insights**

• Identified trends: Increased sales during promotions, impact of discounts on revenue.

• Evaluated promotion effectiveness based on sales metrics and customer behaviour.

• Explored geographical patterns of sales distribution.

**Conclusion**

• The dashboard provides insights into promotion performance, revenue impact, and sales trends, aiding in strategic decision-making.

**Recommendations**

• Use the dashboard to track future promotions, assess their impact, and refine strategies accordingly.

• Continuously update data to keep insights relevant and actionable.

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This documentation outlines the analysis steps, dashboard components, technical details, insights gained, and recommendations based on the analysis of sales data and the creation of a promotion-focused dashboard in Power BI.

**Business Questions**

**who can use this dashboard?**

**Marketing Teams**: They can use it to understand customer behavior, preferences, and the effectiveness of marketing campaigns. Insights on which channels, promotions, or product categories perform best can guide future marketing strategies.

**Sales Teams:** They can utilize the data to identify high-value customers, understand buying patterns, and tailor their sales approaches accordingly.

**Product Development**: Insights into popular products, categories, or brands can aid in new product development or modifications to existing products based on customer preferences.

**Management/Leadership:** Executives can use this to assess overall sales performance, track key metrics, and make strategic decisions to drive growth based on the trends observed.

**Finance Teams**: Understanding sales patterns can help in budgeting, forecasting, and making financial decisions related to pricing strategies, inventory management, etc.

**Business Analysts/Data Analysts:** They can dig into the data further, perform advanced analytics, and generate more specific insights that can benefit various departments within the company.

**what value would be generated by using this dashboard?**

Informed Decision-Making

Improved Marketing Effectiveness

Enhanced Customer Experience

Optimized Operations

Increased Sales and Revenue

Identification of Growth Opportunities

**what additional data can be helpful to add more insights and value to the team?**

**Customer Feedback and Sentiment Analysis:** Incorporating data from customer feedback, reviews, and sentiment analysis can offer insights into customer satisfaction, pain points, and preferences. This can guide improvements in products and services.

**Seasonal Trends and External Factors:** Adding data on external factors like economic indicators, weather patterns, holidays, or industry-specific events can help identify correlations between external factors and sales patterns.

**Product Performance Data:** Detailed data on product attributes, customer ratings, returns, and reviews can offer insights into what features or aspects of products drive customer satisfaction and sales.

**Also, the given data was incomplete for user\_score, we also need to know on what basis is the user\_score (1,2,3,4) users are segmented.**

**And if we are provided user\_session with starting and ending session time it will help to add more insights to the customer behaviour and website prmotion.**