Twitter Analytics Dashboard - Power BI

Introduction

This report outlines the process of building a comprehensive Power BI dashboard aimed at analyzing Twitter performance metrics using advanced filtering logic and dynamic visualizations. The project emphasizes practical application of DAX, time-based filtering, and data storytelling.

Background

The dataset consists of detailed tweet-level metrics such as impressions, engagement rate, media views, likes, retweets, replies, and various click types. The main goal is to create conditionally visible, interactive charts that allow stakeholders to derive granular insights based on tweet performance.

Learning Objectives

Develop dynamic Power BI visuals using advanced DAX.

Apply conditional visual filters (time, text, and numeric constraints).

Implement user-centric visualizations with drill-down capabilities.

Filter content dynamically at the visual level only.

Activities and Tasks

Task 1

Pie Chart: Total Clicks Breakdown with Drill-Down
Visualize the proportion of total clicks (URL, user profile, hashtag) for tweets with more than 500 impressions, including a drill-down into individual tweets.

Task 2

Engagement and Impressions for H1 2020
Chart showing average engagement rate and total impressions for tweets between 01-01-2020 and 30-06-2020 with at least 100 impressions and 0 likes, shown only during 3PM–5PM IST.

Task 3

Scatter Chart: Media Engagements vs Media Views
For tweets with >10 replies, highlight those with engagement rate >5%, posted between 6PM–11PM IST on odd dates, with word count >50.

Task 4

Clustered Bar Chart: Clicks by Tweet Category
For tweets with at least one of the interaction types and posted between 3PM–5PM IST, with even tweet dates and word count >40.

Task 5

Top 10 Tweets by Retweets + Likes
Exclude weekends; include tweets with even impressions, odd dates, and word count <30, only shown between 3PM–5PM IST.

Task 6

Dual-Axis Chart: Media Views vs Media Engagements by Weekday
For the last quarter, show tweets with even impressions, odd dates, and character count >30, visible between 3PM–5PM and 7AM–11AM IST, removing tweet words containing letter "H".

Task 7

Line Chart: Monthly Engagement Rate Trend
Compare tweets with vs without media, for those with even engagement, odd dates, and character count >20, removing words containing letter "C".

Task 8

Comparison Chart: Replies, Retweets, Likes with High Media Engagement
For tweets from June–August 2020, with media engagements above median, odd dates, even media views, and character count >20, removing words with letter "S".

Task 9

Comparison of Engagement Rate: App Opens vs No App Opens
Tweets between 9AM–5PM on weekdays, with even impressions, odd dates, character count >30, and no words with letter "D", shown only during 12PM–6PM and 7AM–11AM IST.

Skills and Competencies

Proficient use of Power BI Visual-level Filters.

Advanced DAX for time and text-based conditions.

Data storytelling through visual hierarchy and interactivity.

Handling large datasets with complex logic chains.

Feedback and Evidence

User interactions confirmed improved insight clarity and control through conditional filtering and visual segmentation. The drill-down and dynamic visibility ensured relevance of data during appropriate time windows.

Challenges and Solutions

Challenge: Complex text cleaning (removal based on letters).

Solution: Applied DAX-based CONCATENATEX and string filtering.

Challenge: Dynamic visual hiding.

Solution: Used NOW() + HOUR() logic in DAX for time-based visual gating.

Challenge: Avoiding unpivoting.

Solution: Built static helper tables and SWITCH logic for comparison charts.

Outcomes and Impact

The dashboard enables real-time, context-specific decision-making on tweet performance, improves granularity in metrics evaluation, and supports robust storytelling. Stakeholders can quickly explore and drill into relevant metrics without unnecessary clutter.

Conclusion

This Power BI project successfully demonstrates the use of advanced DAX, dynamic visuals, and user-centric dashboards for social media analytics. By integrating conditional visibility, drill-downs, and logical filtering, it offers a scalable model for other interactive dashboards in marketing and analytics domains.