

Internship Report

Social Media Tweet Analysis Dashboard

1.Introduction:

This report presents an overview of my internship experience focused on developing a “**Social Media Tweet Analysis Dashboard**” using Power BI. The primary goal of this project was to analyse tweet interactions and user engagement through various metrics, providing actionable insights that could enhance strategies for content creation and user interaction. The dashboard aims to equip stakeholders with valuable data to inform decisions regarding social media strategies and improve overall engagement with target audiences.

2.Background:

In the current digital landscape, social media plays a critical role in communication and marketing. Twitter, with its fast-paced and interactive nature, provides a unique platform for brands and individuals to engage with their audience. Understanding user engagement on Twitter is essential for developing effective content strategies that resonate with users. This project was initiated to delve into the dynamics of tweet performance and engagement patterns, ultimately seeking to leverage data-driven insights to enhance online presence and interaction.

The analysis utilised a dataset containing various engagement metrics, including URL clicks, user profile clicks, hashtag clicks, likes, retweets, and media engagements. By employing Power BI, I aimed to create a visually appealing and informative dashboard that would facilitate the exploration of these metrics, allowing for deeper insights into user behaviour.

3.Learning Objectives:

The primary objectives of this internship were to:

- *Gain Hands-On Experience:* Acquire practical knowledge in data visualisation using Power BI, including its various functionalities and features.

- *Analyse Social Media Engagement Metrics:* Develop a comprehensive understanding of how different metrics contribute to overall user engagement and tweet performance.
- *Enhance Data Skills:* Improve my skills in data cleaning, manipulation, and visualisation, ensuring that I could effectively prepare and analyze datasets.
- *Understand User Engagement Behaviours:* Learn to interpret user engagement metrics and their implications for content strategy and audience interaction.
- *Foster Analytical Thinking:* Develop critical thinking skills to derive insights from data and formulate recommendations based on findings.

4.Activities and Tasks:

The following summarises the tasks completed during the project:

Task 1: Clustered Bar Chart – Sum of URL Clicks, User Profile Clicks, and Hashtag Clicks by Tweet Category

- Objective: Visualise the total URL clicks, user profile clicks, and hashtag clicks for each tweet category to understand which categories drive user interactions.
- Status: Initially, the chart displayed user profile clicks, but adjustments were required to include URL clicks and hashtag clicks for a more comprehensive view.
- Steps Taken: Created a clustered bar chart, refined the data model to ensure accurate calculations, and adjusted the visual layout for clarity.

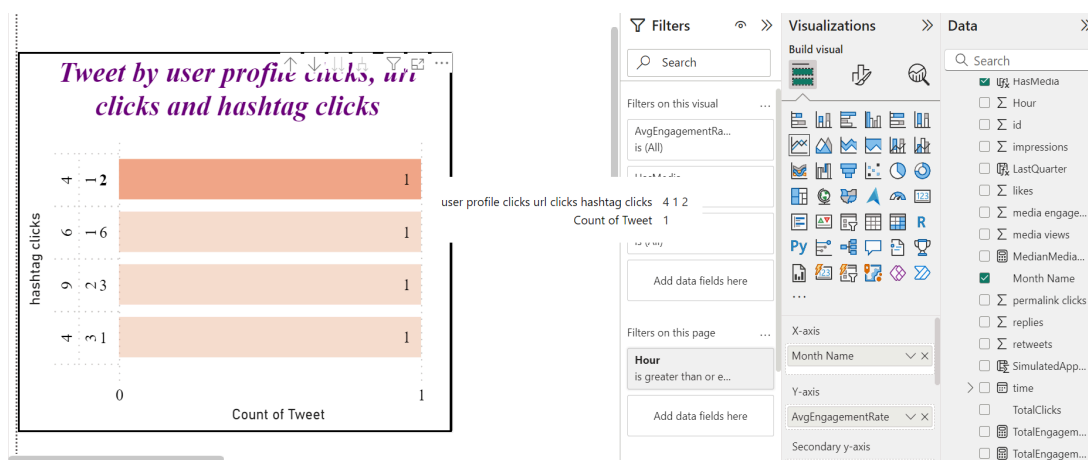


Fig1:URL Clicks, User Profile Clicks, and Hashtag Clicks by Tweet

Task2: Top 10 Tweets by Retweets and Likes (Excluding Weekends)

- Objective: Identify and display the top 10 tweets based on retweets and likes while excluding tweets posted on weekends to focus on weekday performance.
- Status: The chart successfully showcased tweet interactions but needed Filtering logic to remove weekends and highlight the top 10 tweets.
- Steps Taken: Implemented a DayOfWeek column and applied top N filtering to display the top tweets accurately.

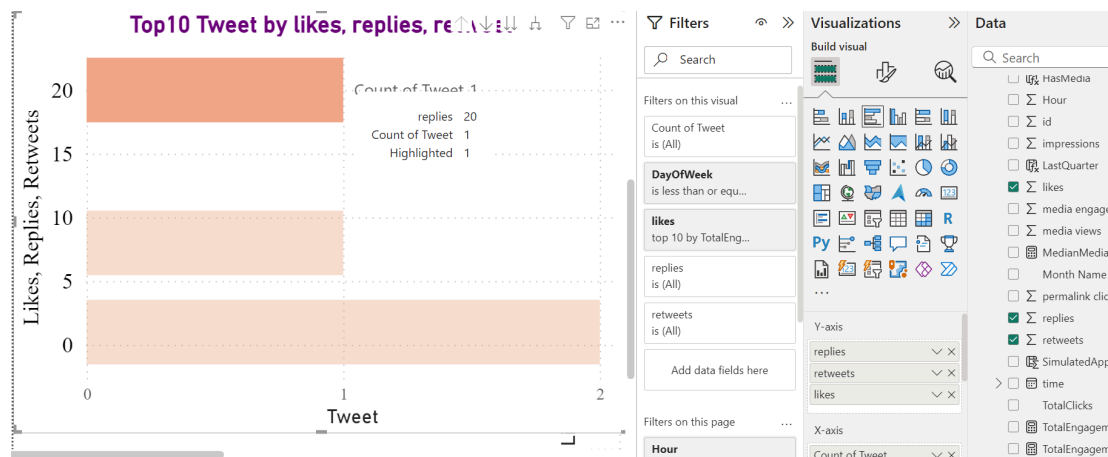


Fig2: Top 10 Tweets by Retweets and Likes (Excluding Weekends)

Task 3: Line Chart Showing Average Engagement Rate Over Each Month

- Objective: Visualise the average engagement rate over months, differentiating between tweets that contain media and those that do not.
- Status: Successfully implemented, providing insights into monthly trends in engagement rates and highlighting the impact of media on user interactions.
- Steps Taken: Developed a line chart that tracked average engagement rates over time, enabling comparisons between media-inclusive and media-exclusive tweets.

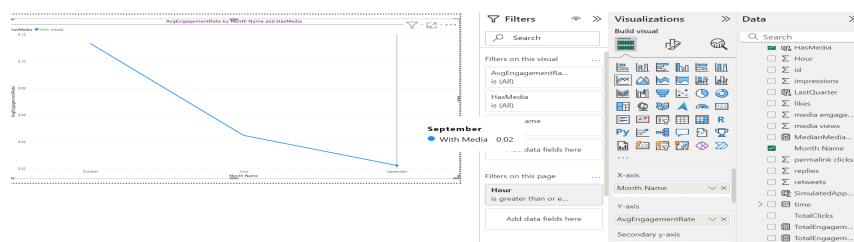


Fig3: Average Engagement Rate Over Each Month

Task 4: Comparison of Replies, Retweets, and Likes for Tweets with Media Engagements Greater Than Median

- Objective: Compare interactions (replies, retweets, likes) for tweets with media engagements that exceed the median engagement level to identify high-performing content.
- Status: Completed with the application of a median filter to isolate tweets with significant media engagement.
- Steps Taken: Visualised interaction metrics for tweets surpassing the median, providing insights into how media content drives engagement.

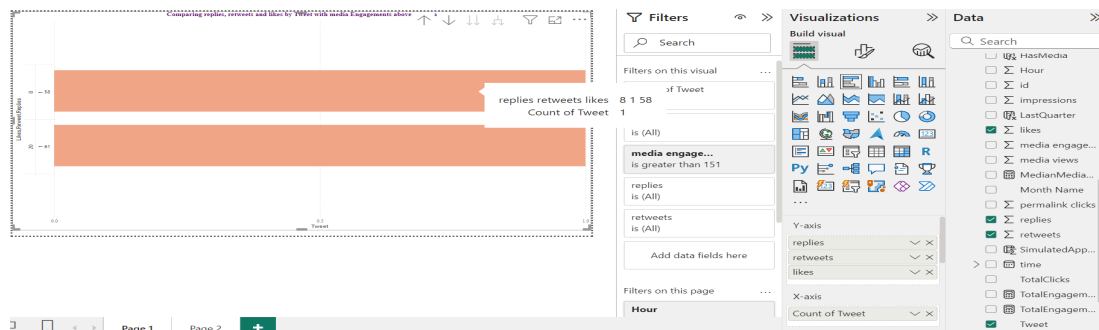


fig4:Comparison of Replies, Retweets, and Likes for Tweets with Media Engagements Greater Than Median

Task 5: Engagement Rate Comparison for Tweets with and Without AppOpens (Between 9 AM and 5 PM)

- Objective: Analyse and compare the average engagement rate for tweets that were opened via the app versus those that were not, specifically during business hours.
- Status: Created a bar chart to illustrate engagement rates for app-open and non-app-open tweets, filtered to focus on the most relevant time period.
- Steps Taken: Implemented filtering logic to isolate tweets posted during business hours (9 AM to 5 PM) and visualised the results effectively.

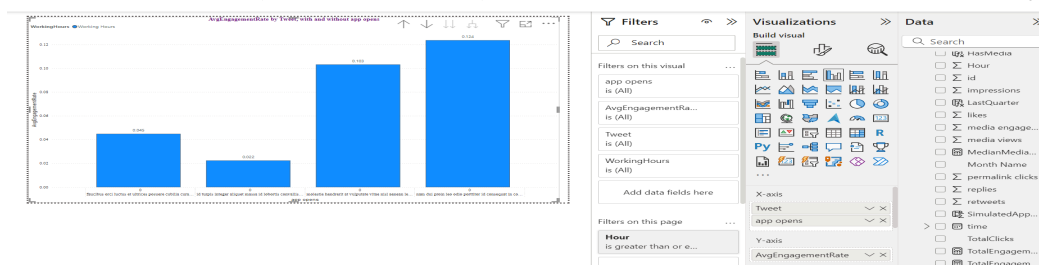


Fig5:Engagement Rate Comparison for Tweets with and Without App Opens (Between 9 AM and 5 PM)

Task 6: Dual-Axis Chart for Media Views and Media Engagements by Day of the Week

- Objective: Compare media views and media engagements across different days of the week to identify trends and optimal posting times.
- Status: Successfully implemented a dual-axis chart that depicted both media views and engagements, allowing for a comprehensive view of daily trends.
- Steps Taken: Created a dual-axis chart to visualize the relationship between media views and engagements throughout the week, revealing peak engagement days.

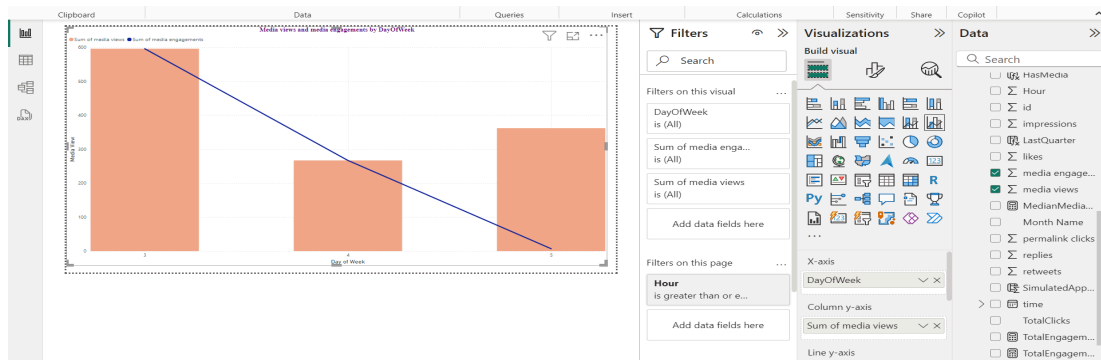


Fig6:Media Views and Media Engagements by Day of the Week

Task 7: Pie Chart for Proportion of Total Clicks for Tweets with More than 500 Impressions

- Objective: Display the distribution of total clicks (URL, user profile, and hashtag clicks) for tweets that received over 500 impressions to understand user interactions with high-impression tweets.
- Status: Completed with a pie chart effectively visualizing the proportion of clicks among tweets with significant impressions.
- Steps Taken: Analyzed total clicks for tweets exceeding 500 impressions and created a pie chart to illustrate the distribution among different click types.

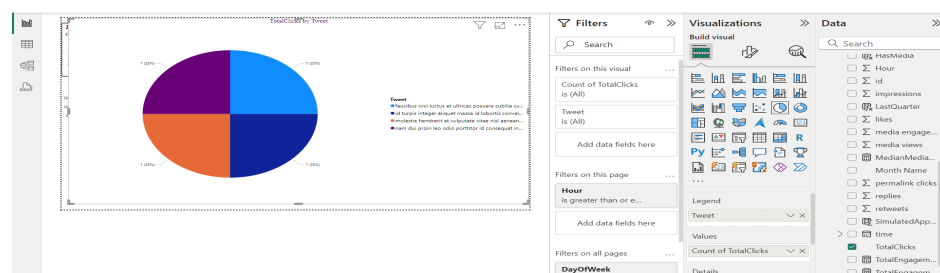


Fig7:Total Clicks for Tweets with More than 500 Impressions

5.Skills and Competencies:

- Proficiency in Power BI: Gained hands-on experience using Power BI for data visualisation, learning to navigate its interface, create various visualisations, and utilise advanced features like filtering and modelling.
- Data Manipulation and Cleaning: Enhanced my skills in preparing datasets for analysis, including handling missing values, transforming data types, and applying formulas to derive meaningful insights.
- Analytical Thinking: Improved my ability to analyse complex data sets and draw actionable insights from visualisations, enhancing my problem-solving capabilities.
- Understanding of Social Media Metrics: Developed a comprehensive understanding of social media engagement metrics and their implications for content strategy, user behaviour, and marketing effectiveness.
- Effective Communication of Insights: Learned to present data insights clearly and concisely through visual storytelling, ensuring that findings are accessible to various stakeholders.

6.Feedback and Evidence:

Feedback from my supervisor and peers emphasised the dashboard's effectiveness in providing clear insights into user engagement trends. The visualisations were praised for their clarity and ability to convey complex data in an easily digestible manner. The practical application of the dashboard during team discussions highlighted its value in informing content strategies and enhancing decision-making processes. Evidence of the dashboard's functionality, including screenshots and analysis results, can be found in the accompanying Power BI report files and presentation materials.

7.Challenges and Solutions:

- **Data Inconsistencies:** Some datasets contained missing or inconsistent entries, which could potentially skew the analysis. To address this, I applied data cleaning techniques, including filtering out incomplete entries and imputing missing values when necessary.
- **Visualisation Limitations:** Initial visualisations did not effectively communicate the intended message. Through feedback and iterative design, I refined the visual layout and adjusted the type of visualisations used to ensure clarity and alignment with the analysis objectives.
- **Understanding Complex Metrics:** Some engagement metrics were initially challenging to interpret. I dedicated time to research best practices in social media analytics and sought guidance from my supervisor to better understand how to leverage these metrics effectively.

8.Outcomes and Impact:

The completed dashboard significantly improved the understanding of user engagement on social media platforms, particularly Twitter. Insights drawn from the analysis led to actionable recommendations for enhancing content strategies, particularly in terms of timing, media use, and overall engagement tactics. For example, the analysis revealed that tweets containing media were far more likely to garner higher engagement, leading to recommendations for integrating more visual content in future tweets. This project has the potential to influence future social media campaigns, driving better user interaction and ultimately enhancing brand visibility and user loyalty.

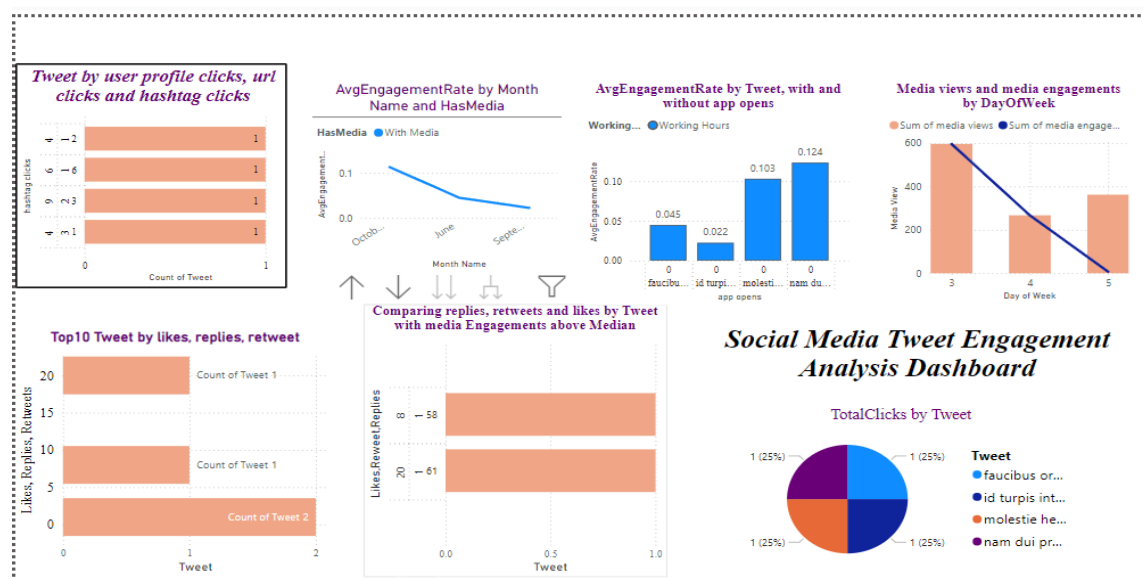


Fig8: Social Media Tweet Engagement Analysis Dashboard

9.Conclusion:

This internship provided a valuable opportunity to apply theoretical knowledge to practical scenarios in data visualisation and analysis. The experience gained through the “Social Media Tweet Analysis Dashboard” project not only enhanced my technical skills but also deepened my understanding of social media dynamics and user engagement behaviours. I am confident that the insights derived from this project will contribute positively to any future endeavours in data analysis and marketing strategies.

This report encapsulates my experiences and outcomes during the internship, demonstrating the skills I acquired and the tangible impact of my work. I am grateful for the opportunity to learn and contribute to a meaningful project that aligns with my career aspirations. Moving forward, I look forward to applying the skills developed during this internship to future projects and challenges.