

Situationship Analytics: Data-Driven Exploration of Emotional Patterns through Instagram Activity

Introduction

This project looks at how social media activity might change during emotionally significant events. By analysing Instagram activity, the study aims to find patterns in posting, engagement, and messaging during three failed situationships. The focus is on three specific intervals:

- Interval x1: October 2023 to January 2024
- Interval x2: August 2024
- Interval x3: October 2024 to November 2024

Since there are only three situationships to analyse, the conclusions are limited, but some trends and patterns can still be observed.

Methodology

The study was carried out in two main parts:

1. **Instagram Activity Analysis:** Data was downloaded from Instagram, including posts, stories, likes, and topics of interest. This data was cleaned and visualized to identify changes in engagement over time.
2. **Situationship Analysis:** The Instagram data was divided into the three intervals corresponding to the situationships. Using tools like Python, graphs were created to study trends in activity and engagement during these periods.

Results and Analysis



Figure 1: Word cloud of topics of interest

1. **Topics of Interest:** A word cloud shows that topics like “Travel,” “Care,” “Fashion,” and “Beauty” were the most engaging. These interests seem to reflect a focus on lifestyle and self-expression, which could hint at underlying emotional states during the intervals.

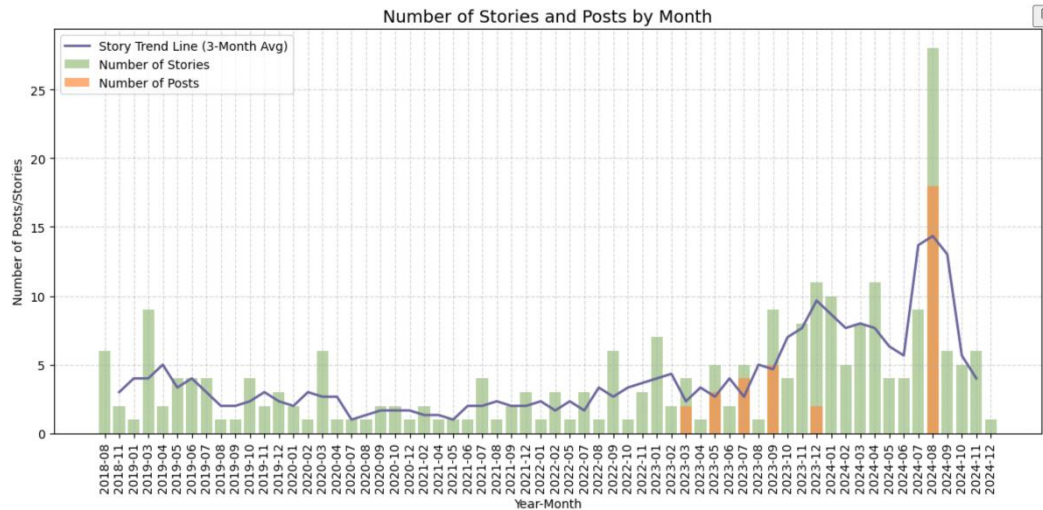


Figure 2: Number of stories and posts by month

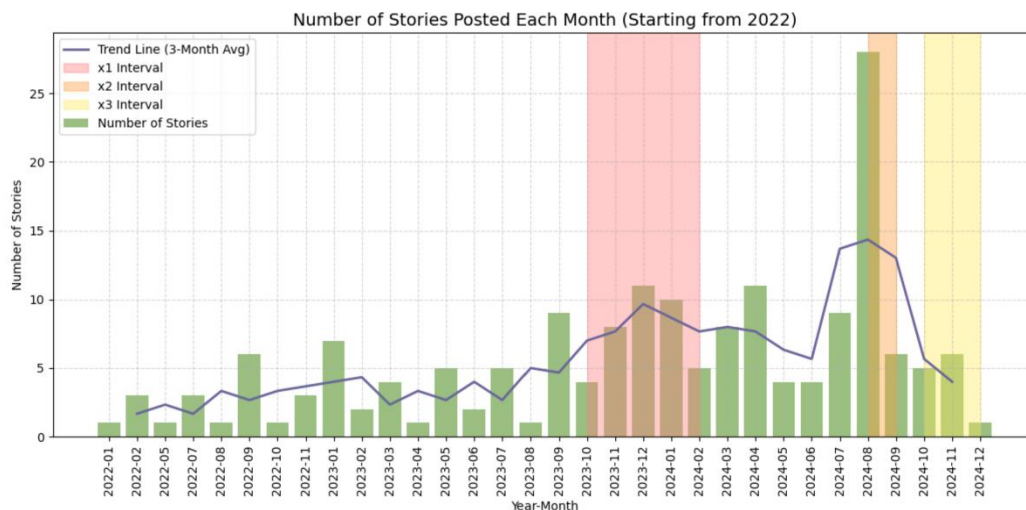


Figure 3: Stories posted each month for the given intervals

2. **Posting and Story Trends:** The analysis of posts and stories reveals specific trends across the intervals. During interval x1 (October 2023 to January 2024), activity surged in November 2023, with a noticeable peak in both posts and stories. This likely reflects heightened emotional engagement during the initial stages of the situationship. However, as January 2024 approached, a gradual decline in activity was evident, coinciding with the deterioration phase.

In interval x2 (August 2024), story and post activity peaked sharply in early August but dropped significantly by the month’s end. This interval was shorter, but the pattern of increased initial engagement followed by a decline remains consistent.

For interval x3 (October 2024 to November 2024), story activity was notably high in mid-October, aligning with the initial phase of the situationship. However, by

November, activity decreased sharply, reflecting emotional disengagement. These trends suggest that posting and story activity is typically higher during the early stages of a situationship, decreasing as it progresses and eventually ends.

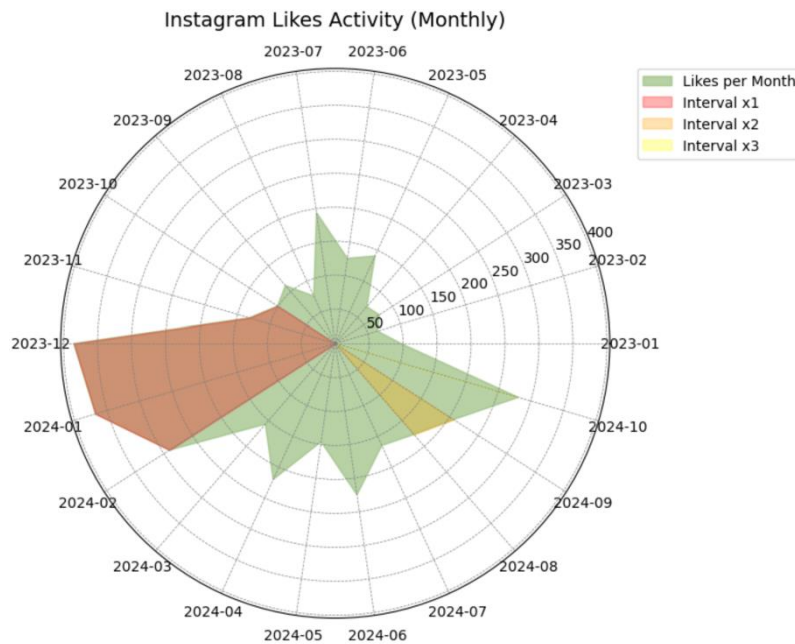


Figure 4: Instagram likes activity during the intervals

3. **Instagram Likes Activity:** The radar chart showing likes per month highlights some variations. During x1, likes peaked in October and November 2023, then dropped off as January 2024 approached. In x2, likes increased briefly in August but then fell. A similar pattern occurred in x3, with a high in October and a decline in November. This supports the idea that engagement starts strong and weakens as the situationship falls apart.

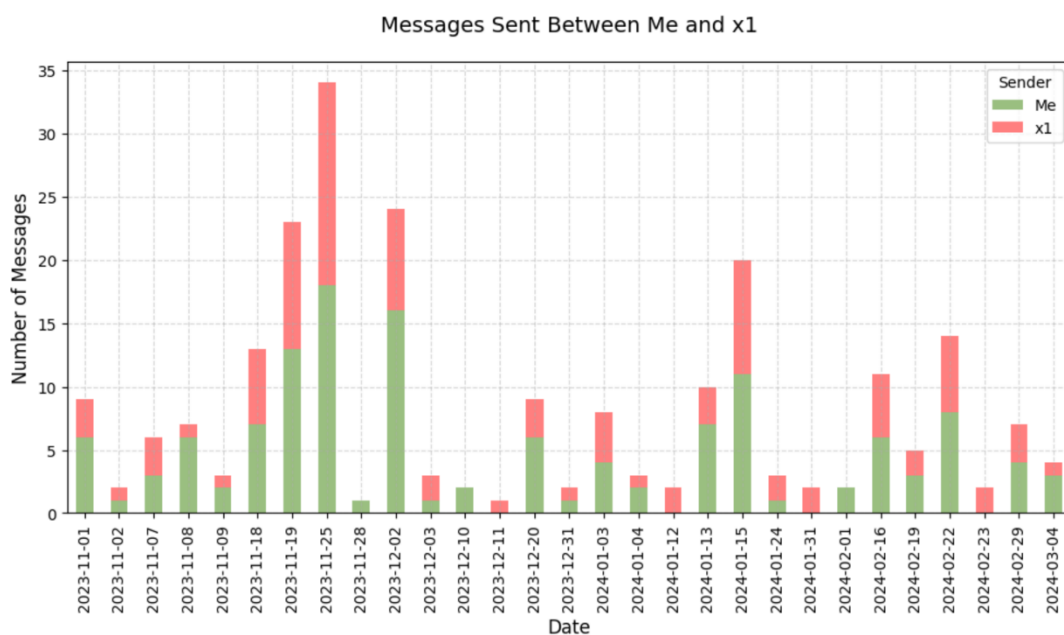


Figure 5: Messaging patterns for interval x1

4. **Messaging Patterns:** Messaging trends during x1 and x3 offer additional context. In x1, messages peaked in November 2023 but declined sharply by January 2024. In x3, messaging was high in mid-October but dropped rapidly afterward. These patterns mirror the changes in Instagram activity, suggesting a connection between social media engagement and communication frequency during these periods.

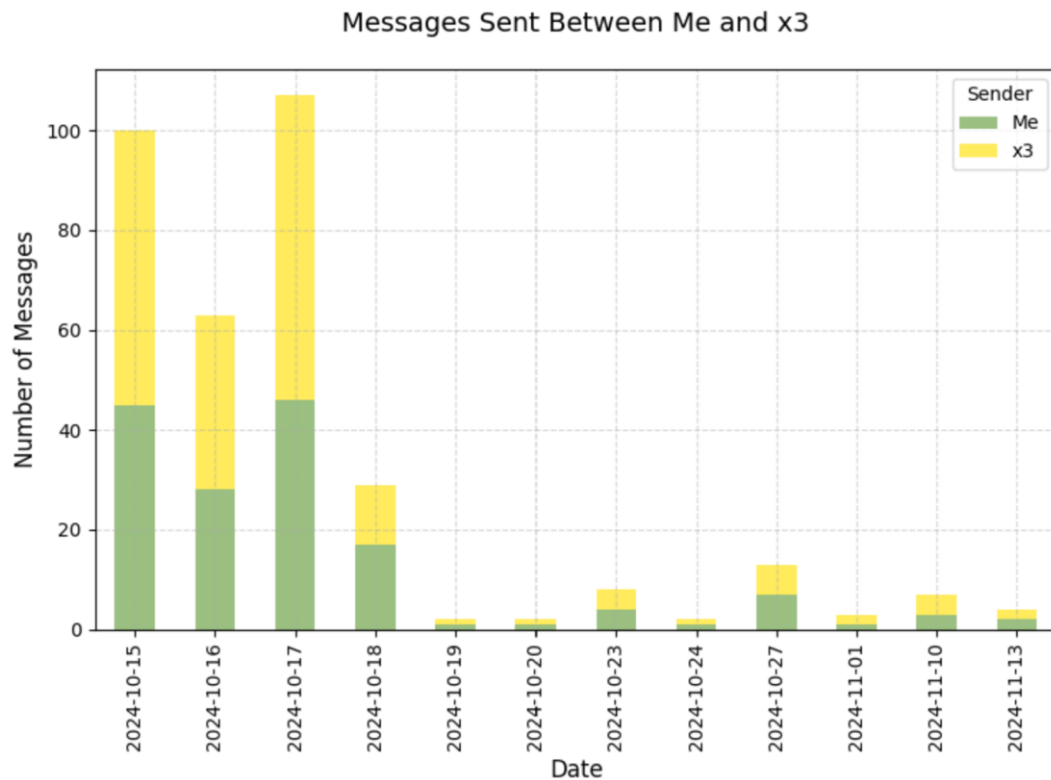


Figure 6: Messaging patterns for interval x3

Conclusion

The findings show that Instagram activity often follows a predictable pattern during situationships. Activity tends to increase at the start, stabilize, and then decrease as the situationship ends. Messaging trends also align with these changes in Instagram engagement. Although the dataset is small, the patterns observed provide some interesting insights into how digital behaviour might reflect emotional states.

Since only three situationships were analysed, these findings should be taken with caution. More data would be needed to confirm these patterns.

Next Steps

Future work could expand this analysis by incorporating other data sources, such as:

- **WhatsApp Data:** To explore how messaging habits change alongside Instagram activity.

- **Spotify Data:** To see if music preferences during these periods provide additional emotional context.

Adding more data sources could make the analysis more comprehensive and help better understand how digital behaviours change during significant emotional events.