

# ‘INSIDE OUT’ – UNDERSTANDING USER EMOTIONS



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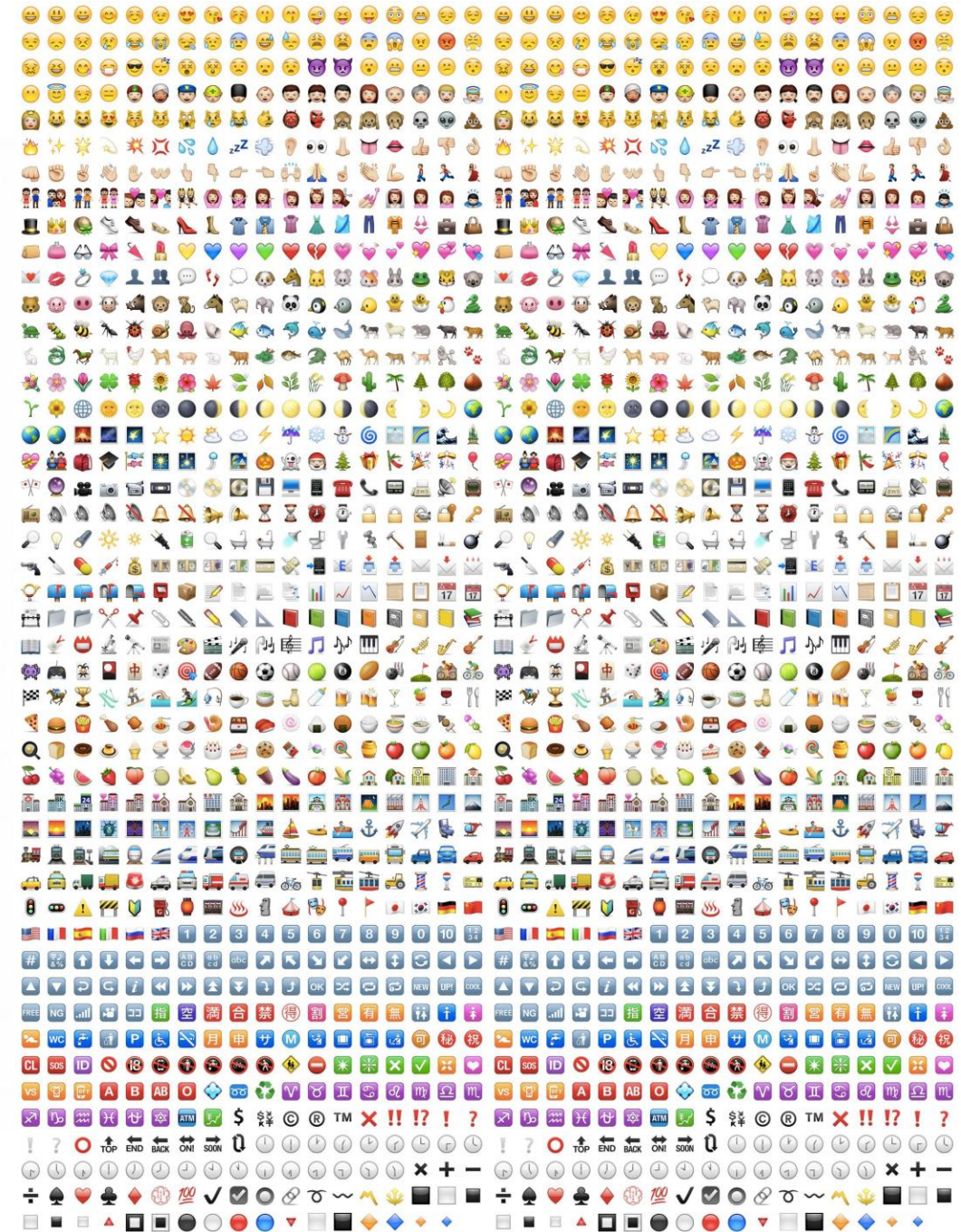
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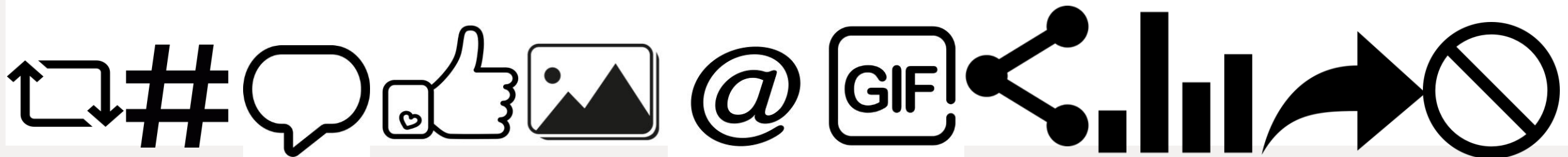
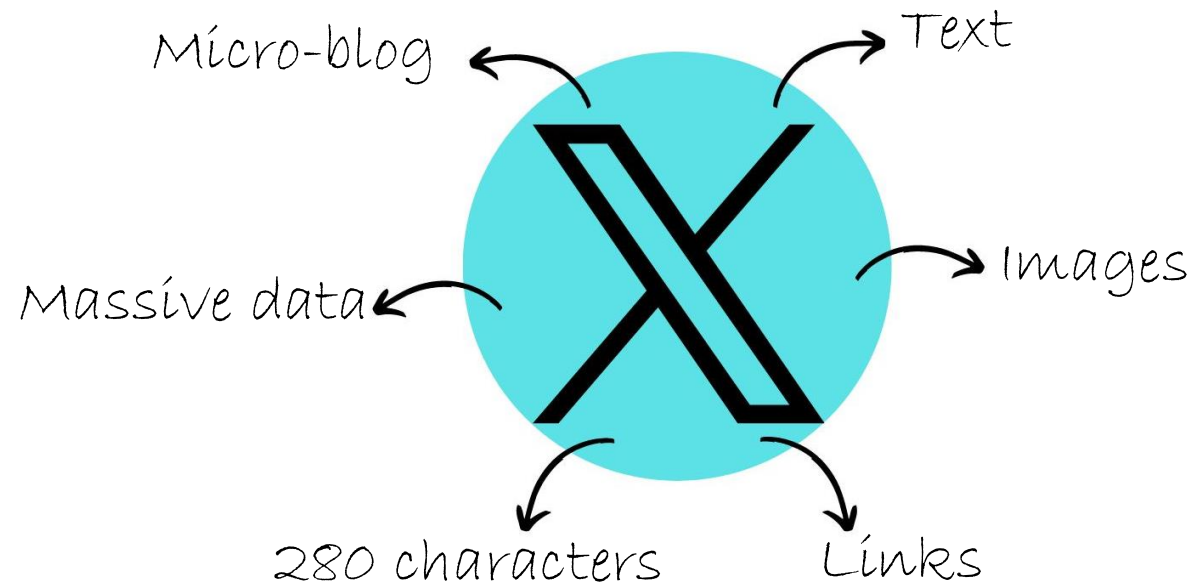
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# AGENDA

- ☐ Introduction
- ☐ Review of Literature
- ☐ Objectives
- ☐ Methodology
- ☐ Results
- ☐ Discussion



# INTRODUCTION





# AN OVERVIEW OF THE PREVIOUS RESEARCH

Younis and Eman (2015) mined tweets to gain insights into the sentiments of customer tweets regarding two stores

**2015**

Sentiment Analysis is among the fields of Natural Language Processing (NLP). It is an intellectual process for a user to extricate their feelings and emotions

**2016**

Hu et al., (2023) used retweets to understand the gender discrepancies in discursive political engagement and its influence on Twitter, and the analysis showed that men have more influence than women

Ramon-Gonen, R., Dori, A. & Shelly, S.(2023) used topic analysis to generate clinical insights for accurately making diagnosis through the data

**2023**

A comparative analysis carried out between India and the USA drives the point home that loneliness can be varied and would need different strategies to counter the negative feelings associated with loneliness Ali and Mowafa(2024)

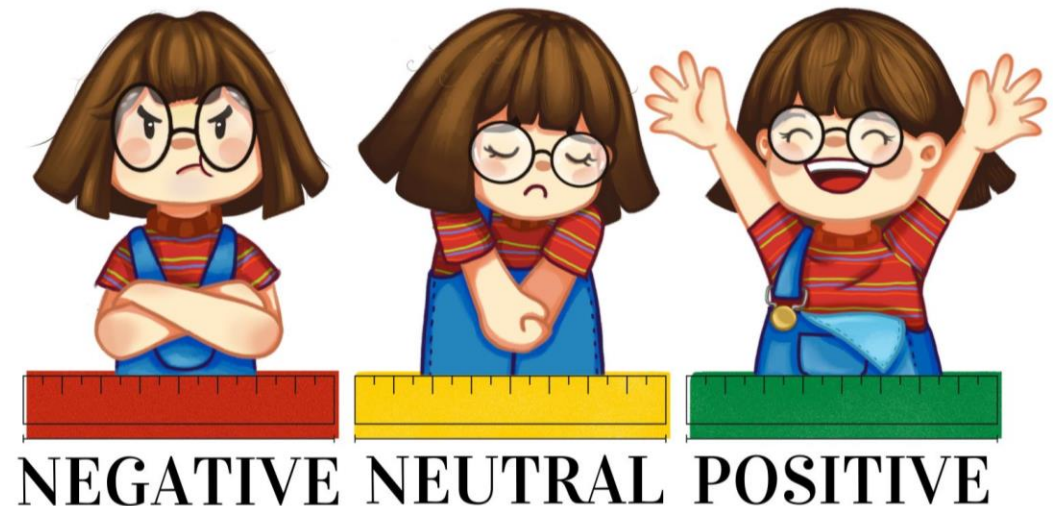
**2024**

# OBJECTIVES

- X Examine the sentiments on #research as expressed on X platform
- X Mining of retweets on #research
- X Identify & Quantify emotions on #research
- X Categorize user emotions based on key topics

## SCOPE AND COVERAGE

- Source : Twitter
- Time : Aug 5, 2022 – Aug 6, 2022
- Language : English
- Programming Language : Python



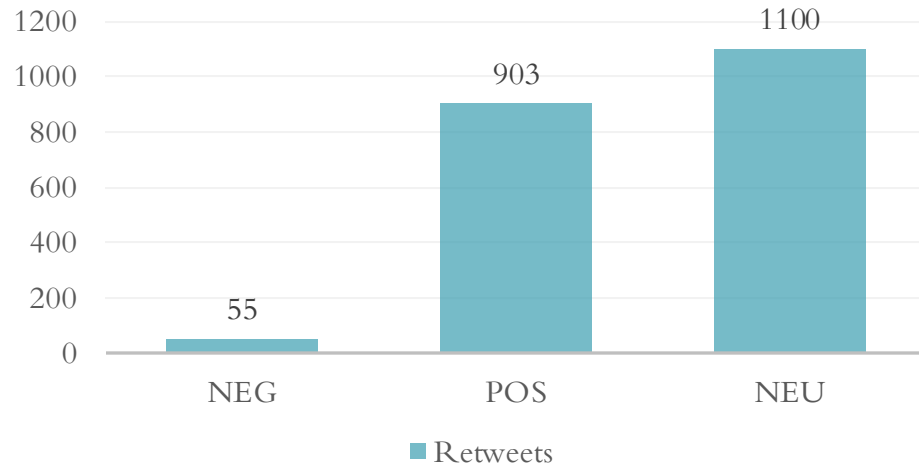
# METHODOLOGY

The Python script conducts sentiment analysis and topic modeling on a dataset of tweets using the *pysentimiento* library and *BERTweet*.

- **Sentiment Analysis:** Utilizes *pysentimiento* with a pre-trained BERTweet model for context-aware sentiment analysis
- **Topic Modeling:** Utilizes *cardiffnlp/tweet-topic-21-multi* Transformer model trained on 124 million tweets to extract topics efficiently.
- **Model Details:** *BERTweet* ensures accurate sentiment analysis, while *cardiffnlp/tweet-topic-21-multi* provides state-of-the-art topic extraction.

# RESULTS

Retweets



## Topic analysis

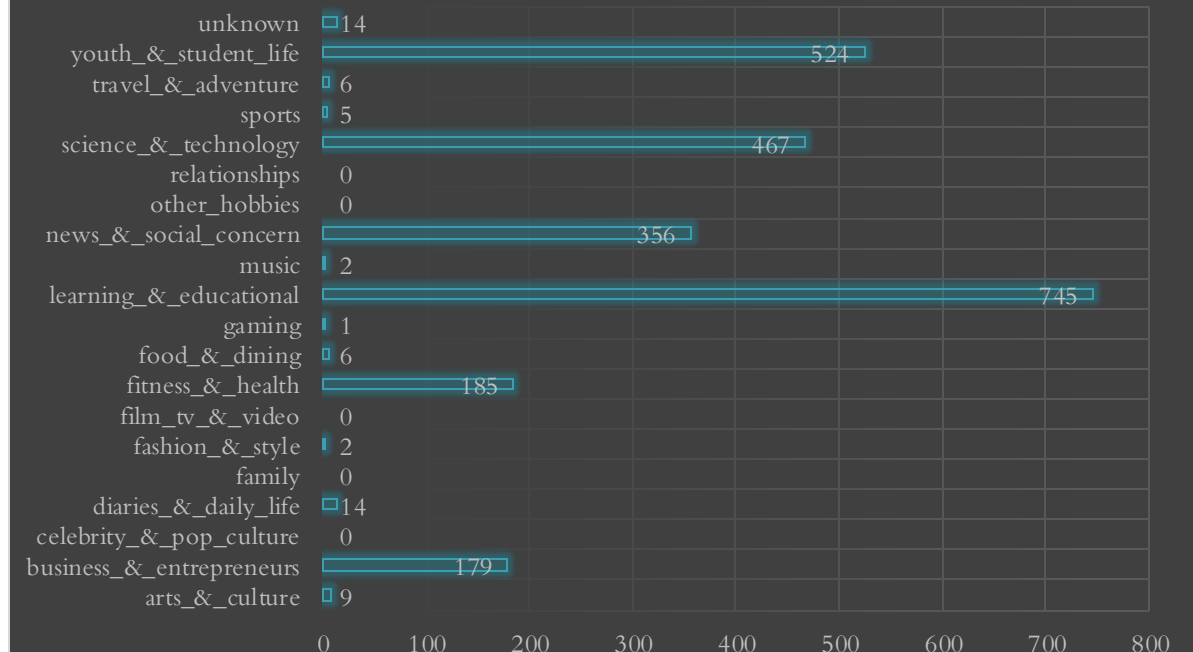
- 'Learning & educational' category dominates retweet activity
- 'Science & technology' and 'youth & student life' also show significant retweet numbers
- 'Relationships' and 'other hobbies' have lower retweet rate.

## Retweets analysis

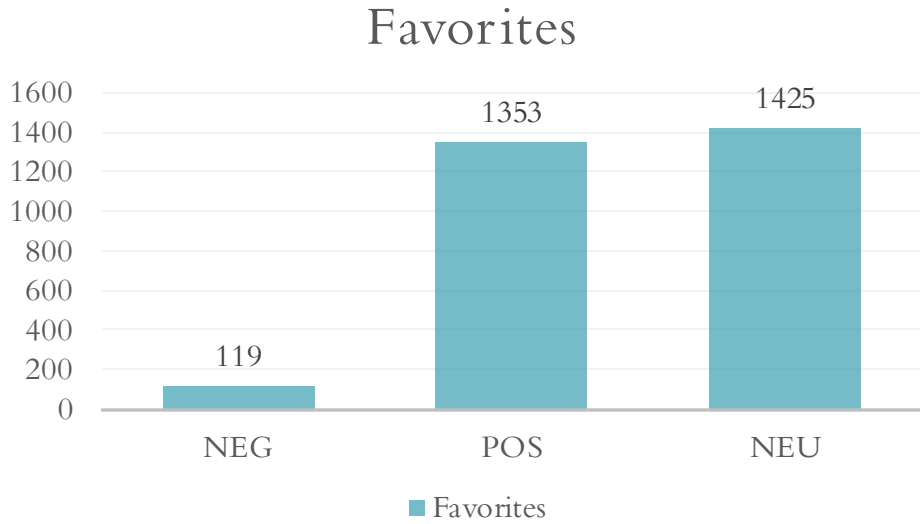
### Sentiment analysis

- Neutral tweets have the highest retweet count (1100), followed by positive tweets (903)
- Indicating a preference for less polarizing content.

Retweets



# RESULTS



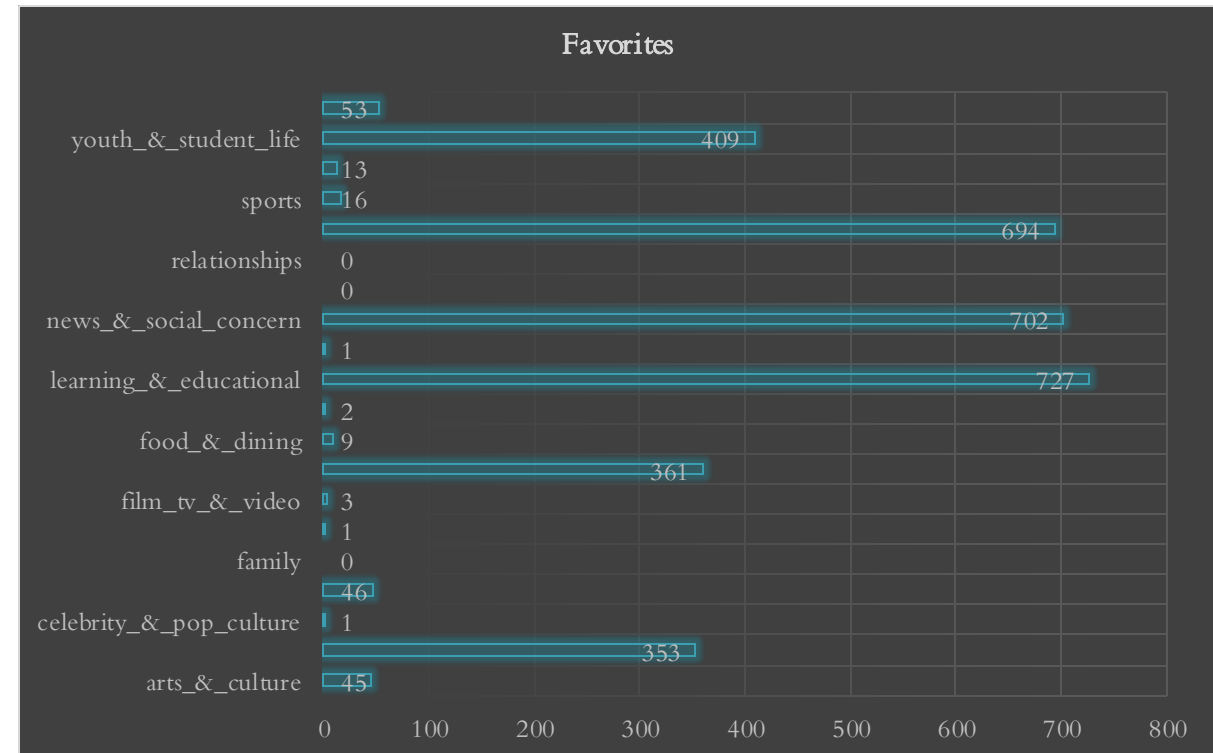
## Topic analysis

- 'Learning & Educational' content is most favored,
- 'News & Social Concern' and 'Science & Technology', indicating these topics resonate well with the audience.
- 'Unknown' category has a moderate number of favorites

## Favourites analysis

### Sentiment analysis

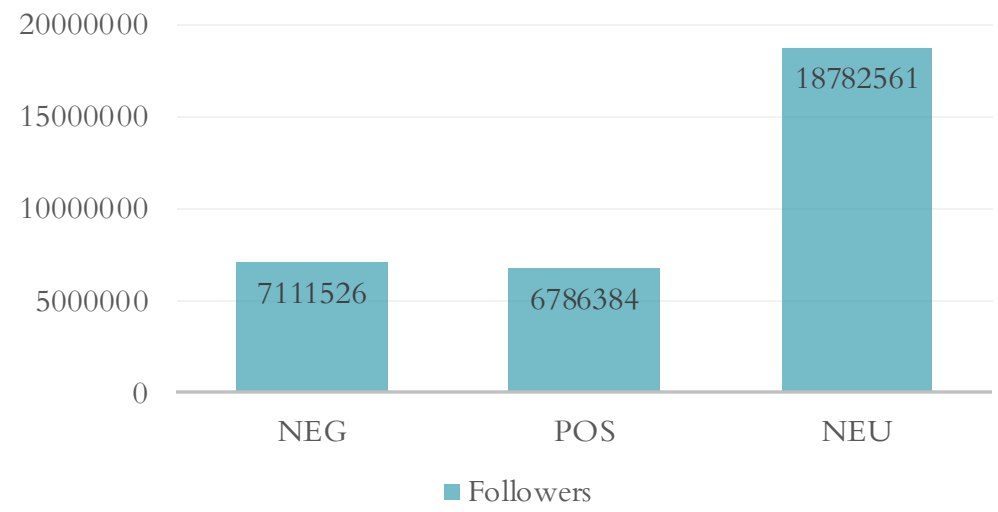
- Neutral tweets lead with 1425 favorites, followed closely by positive tweets (1353)
- Indicating both are well-received by users.





# RESULTS

Followers



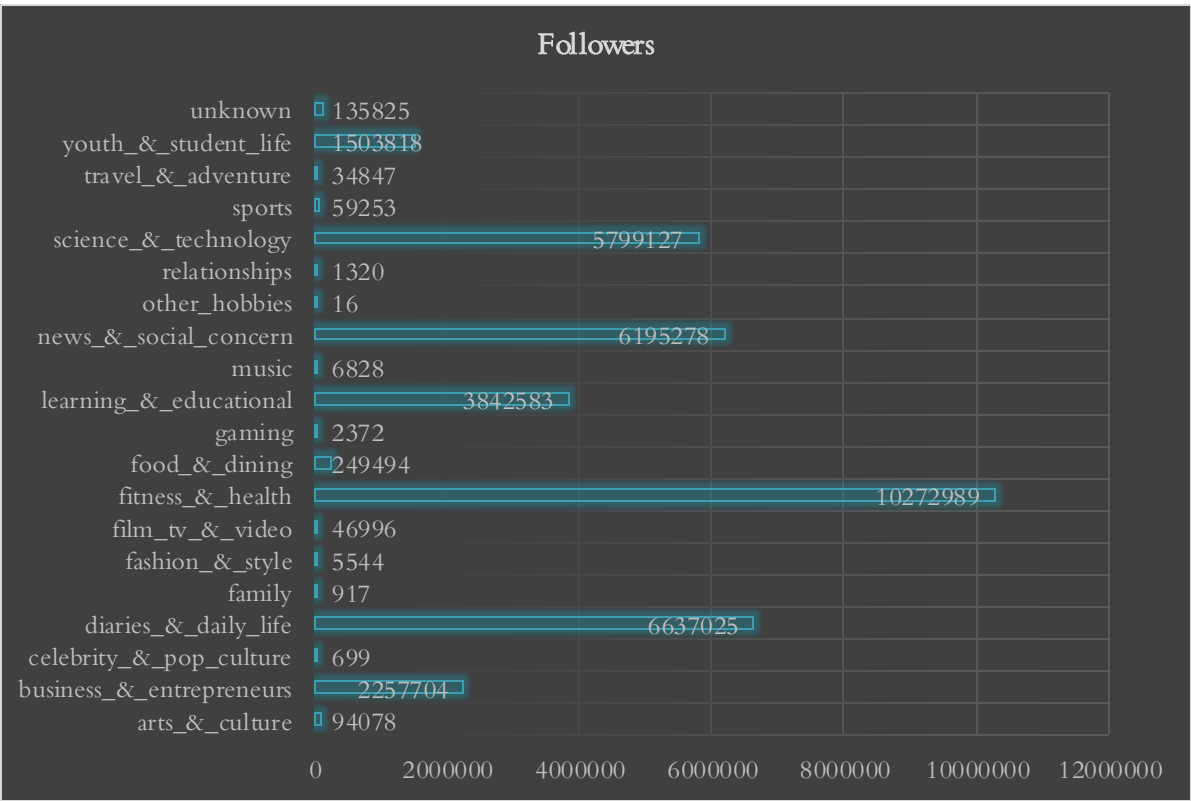
## Topic analysis

- ‘Fitness & health’ category has the highest number of followers, indicating a strong community interest towards well-being.
- Followed by ‘Science & technology’ and ‘news & social concerns’.

# Followers analysis

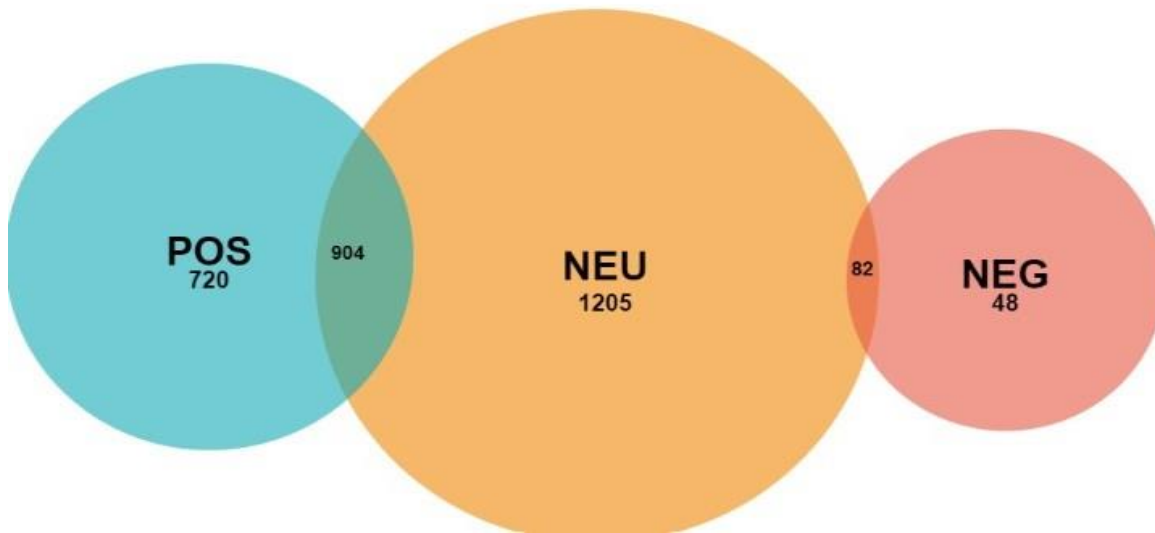
## Sentiment analysis

- Neutral sentiment accounts have the highest follower count (over 18 million)
- It is also notable that the negative has a significant rise than the positive



# Overlapping analysis

## Sentiment overlapping

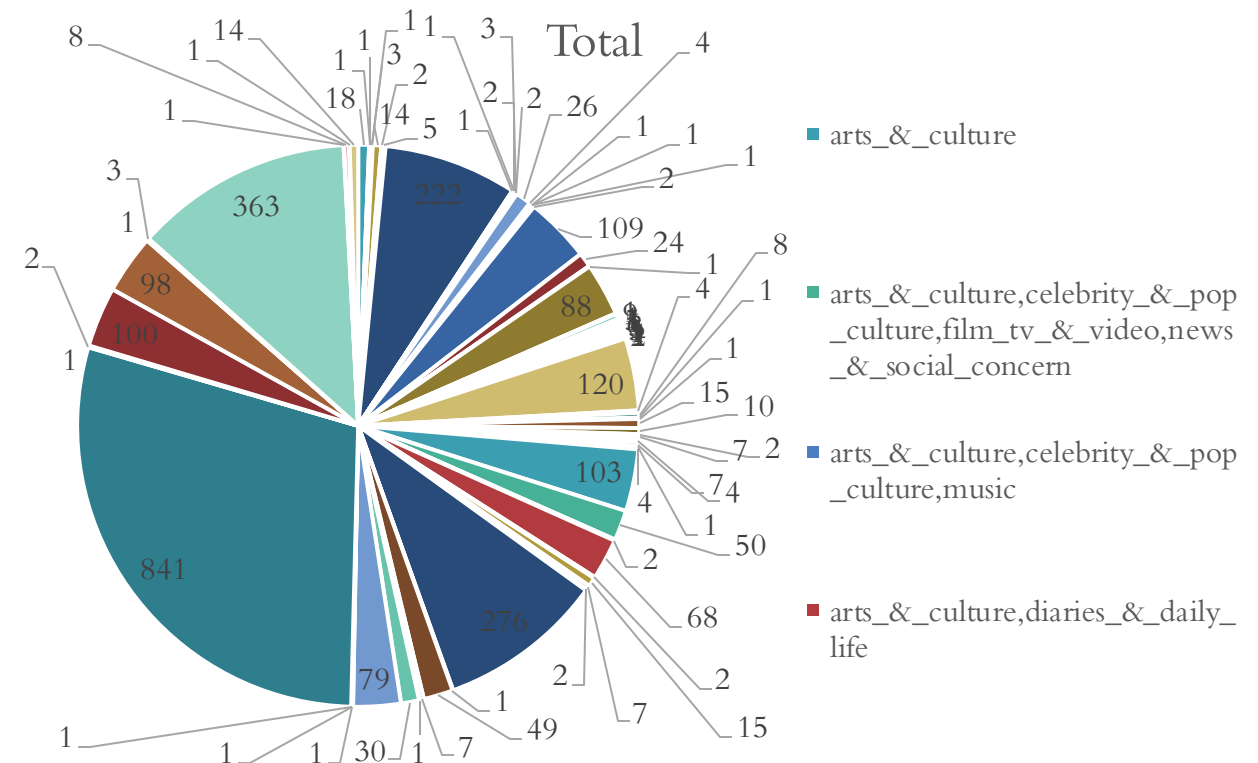


## Topic analysis

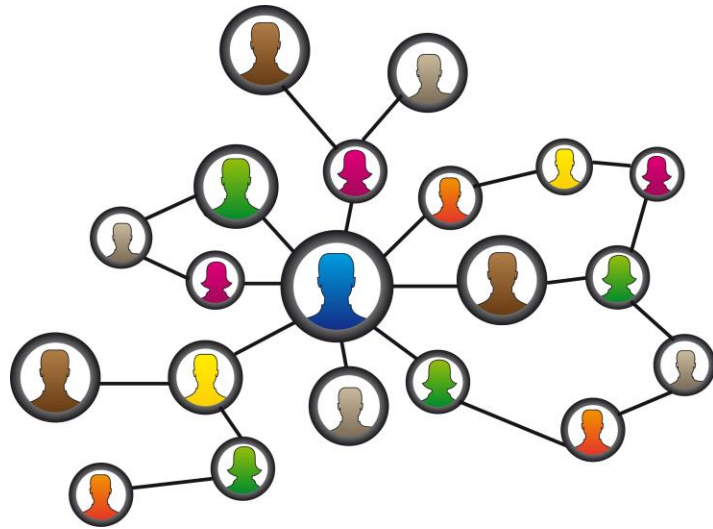
- Significant overlap between 'arts&culture' with other categories
- Particularly 'film tv & video', 'learning & educational', indicating common discussion topics.

## Sentiment analysis

- Significant overlap between positive and neutral sentiments (904 tweets)
- With most tweets being neutral, highlighting a tendency towards neutrality in the dataset.



# How can Sentiment analysis / Topic analysis help the Information professionals?



- User Feedback Analysis
- Collection Development
- Event Planning and Promotion
- Digital Resource Optimization
- Customer Service Improvement
- Information Literacy Programs
- Community Engagement



# CONCLUSION

- Neutral sentiments are found to dominate rather than positive or negative sentiments on #research
- ‘Learning & educational’ category dominates ‘Science & Technology’ follows with the highest number of **retweets** identified with neutral sentiments.
- Tweets with neutral sentiments lead with ‘Learning & educational’ as the highest **favorite** followed by positive sentiments
- Tweets from users with neutral sentiment have the highest **follower** count and the highest number of followers are for the topic ‘Fitness & health’
- ‘arts&culture’ is identified with higher levels of discussion and **sentiment overlapping** between neutral and positive
- These findings show that X can be a viable platform to understand users and their sentiments and to design and develop products and services based on their likes and dislikes.

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#research

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# Thank you!



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