

How do online social networks help spreading sentiments?: A comparative analysis of anti-xenophobic campaigns and social movements during the time of COVID-19

Jiayue (Gaveal) Fan

Cornell University, Ithaca, NY
Department of Information Science
jf675@cornell.edu

Motivation

Collective Actions and Social Networks: Formal operations within groups utilize properties of their networks and online activism turns into collective actions in many real-world case studies. (Krinsky & Crossley, 2014; Tremayne, 2013)
Movements and Campaigns: Both strategies aim for mobilizing sentiments: one is in a grass-root decentralized manner, and another is implemented top-down.
Anti-Xenophobic Sentiment amid COVID-19: Studies focus on emerging xenophobic and racist behaviors populating online spaces while ignore the opposite. (Tahmasbi et al., 2021)

Research Questions

How do anti-xenophobic campaigns and movements differ while simultaneously achieving the purpose of spreading sentiments?

1. How do they expand network size to outreach more audience?
2. What are their respective network patterns?
3. What are the respective factors to catalyze the spread of anti-xenophobic sentiments?

Data Collection

Methodology

Twitter API: parameters = {text, tweet id, author id, public metrics, refernced tweets, hastags}
Network Visualization and Analysis: ForceAtlas2 on Gephi: graph layout algorithm to identify clusters and groups (Jacomy et al., 2014)
WordCloud: WordCloud package on Python



Empirical Case Study

Campaigns: #IStillBelieveInOurCity (N=81), #OurCityNYC (N=416)

- Organized by New York City Commission on Human Rights
- Incorporated both offline exhibition of AAPI artists' works to promote anti-xenophobic sentiments and online Twitter hashtag campaign
- Focused on the online campaign part

Movements: early stage of #IAmNotAVirus (N=6652)

- Anti-xenophobic social movement started by spontaneous counteractions to COVID-19 related scapegoating behaviors.
- Later taken care by an organization to become a campaign.
- Focused on the early stage (first 3 months) of its growth on Twitter

Results and Discussion

How to Outreach?

- a. Campaigns: organizers as the main contributor;
- b. Movements: scattered individual-oriented posting

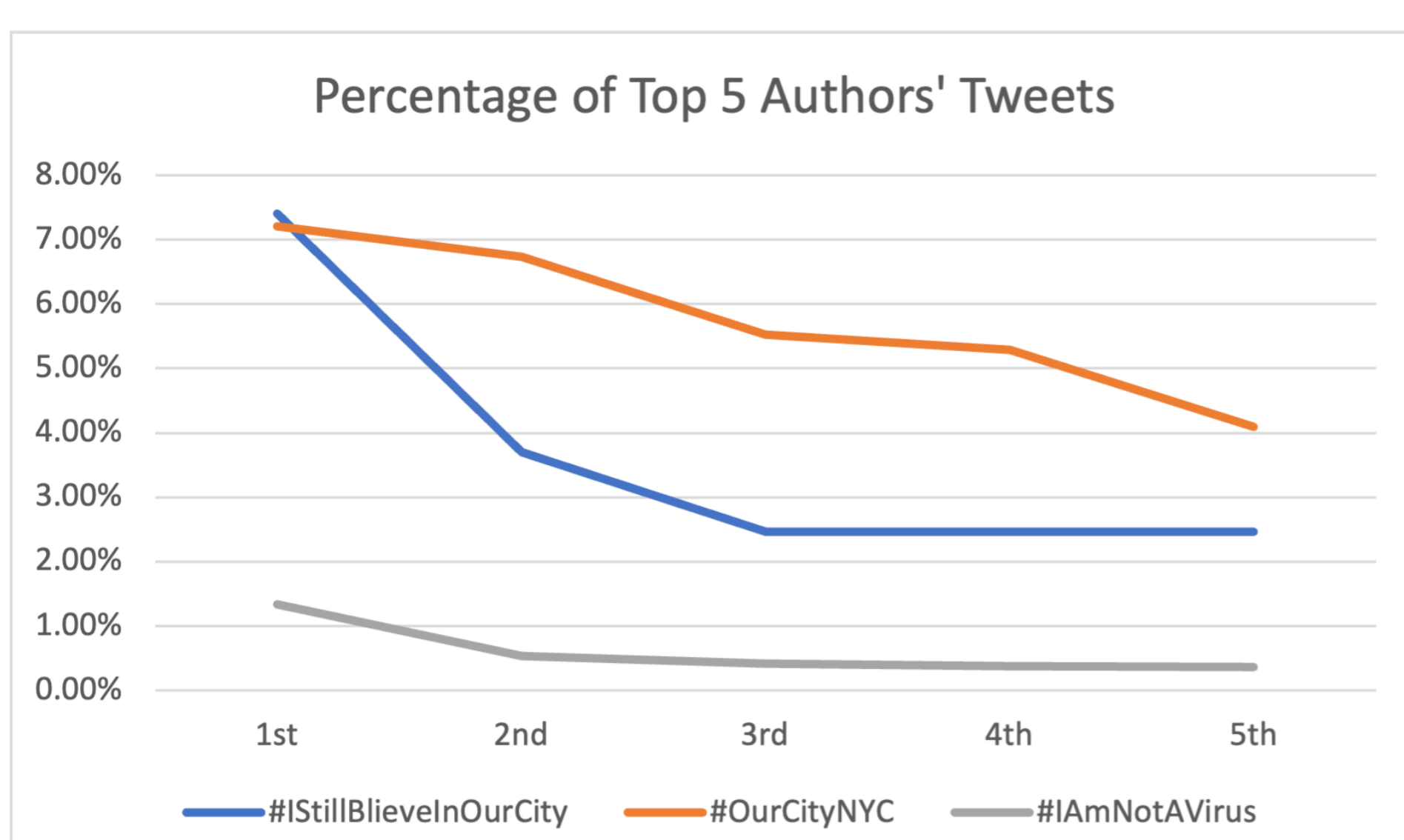


Figure 1. Percentage of Top 5 Authors' Tweets

Usage of Likes/Replies in Networks

- a. pluralistic ignorance: "likes" reduce pluralistic ignorance. (Tufekci, 2017)

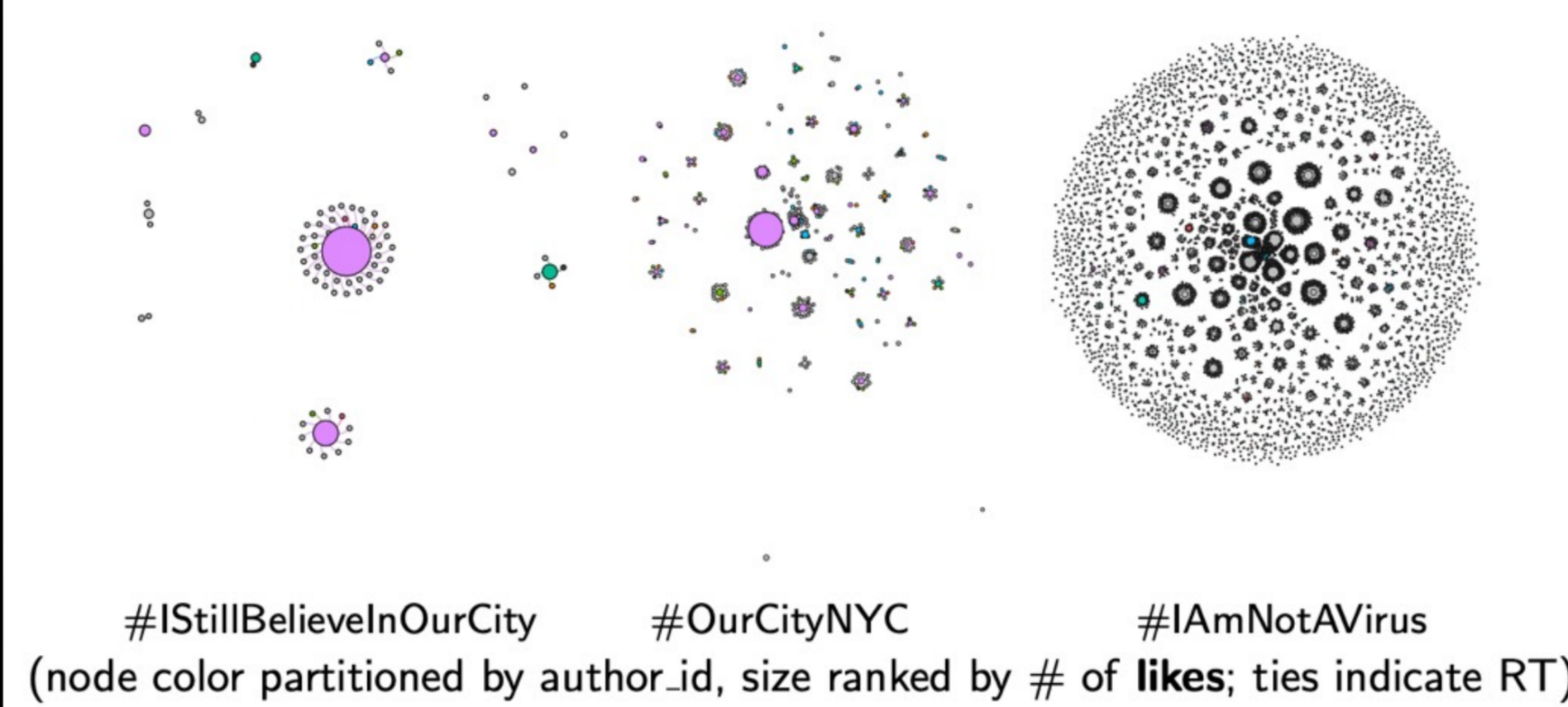


Figure 2. Visualized Networks (Part 1)

- b. Replies provide more concrete involvement to counteract slacktivism

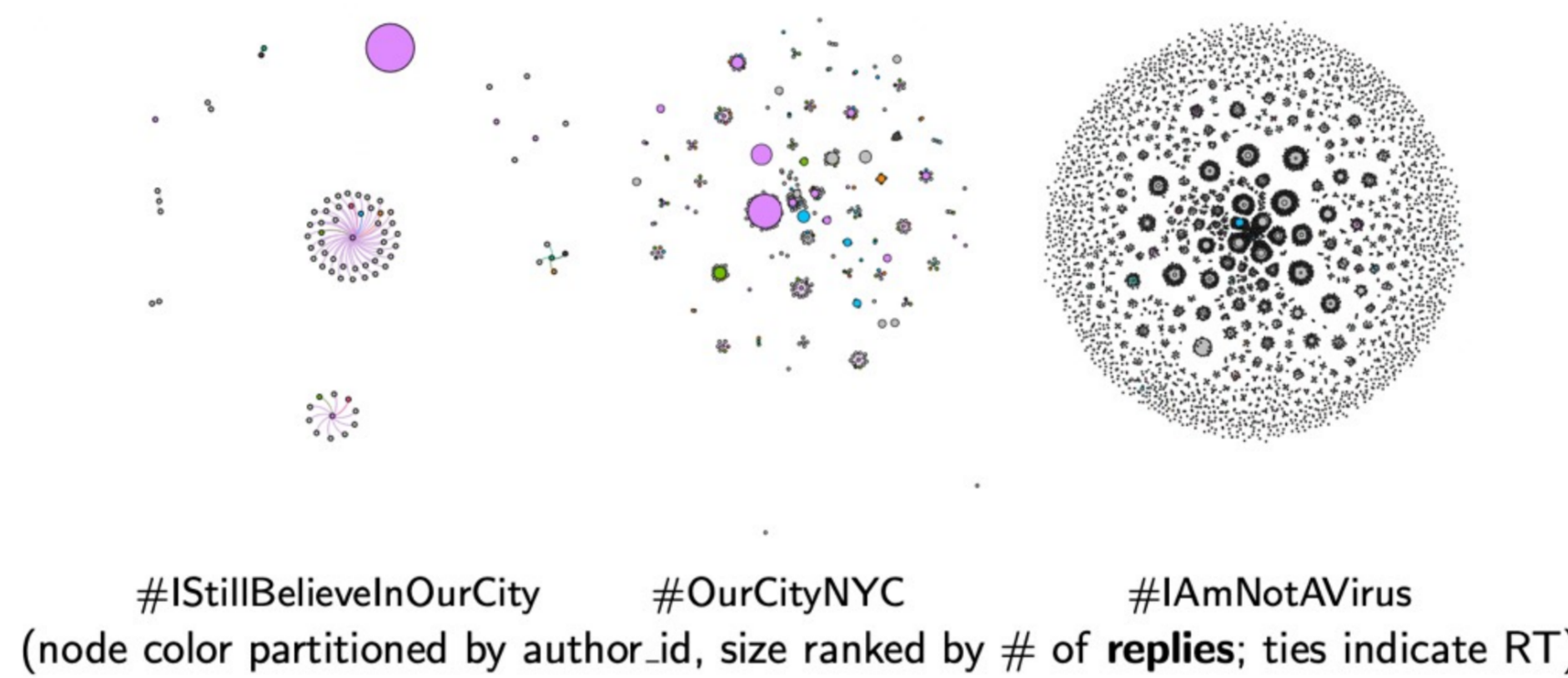


Figure 3. Visualized Networks (Part 2)

- c. Comparative Analysis
Similarities: # of Likes and RTs are proportional regardless of the size of networks
Differences: # of Replies and RTs have no visible relation in small-scale networks, while visibly proportional in large-scale networks
• Large-scale spread of sentiment needs reinforcement from replies to demonstrate the involvement

Catalyzing Factors

- a. Opinion Leader's Promotion

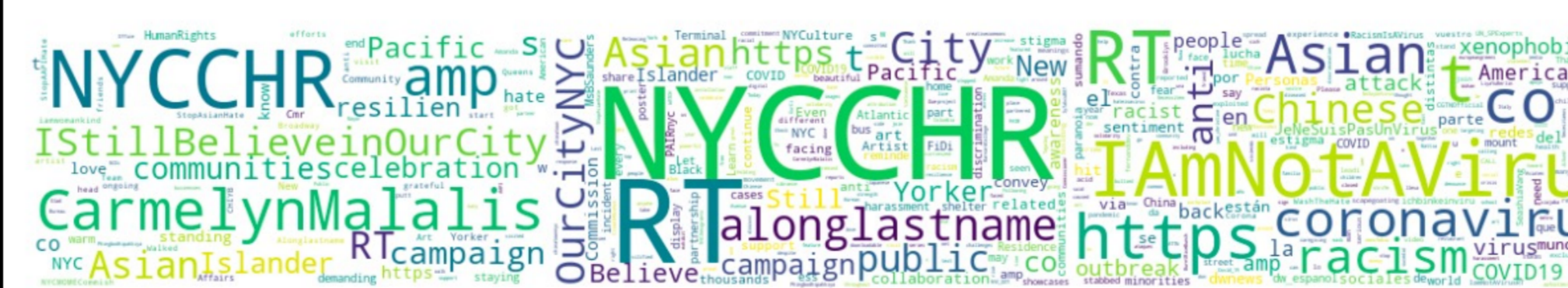


Figure 4. Word clouds generated under each hashtag

- b. External events (E.g, Trump tweeted "Chinesevirus" in mid/late-March, 2020)



Figure 5. Number of tweets in a chronological order

Capacity of Movements and Campaigns

- a. Overlapped hashtags as brokerages

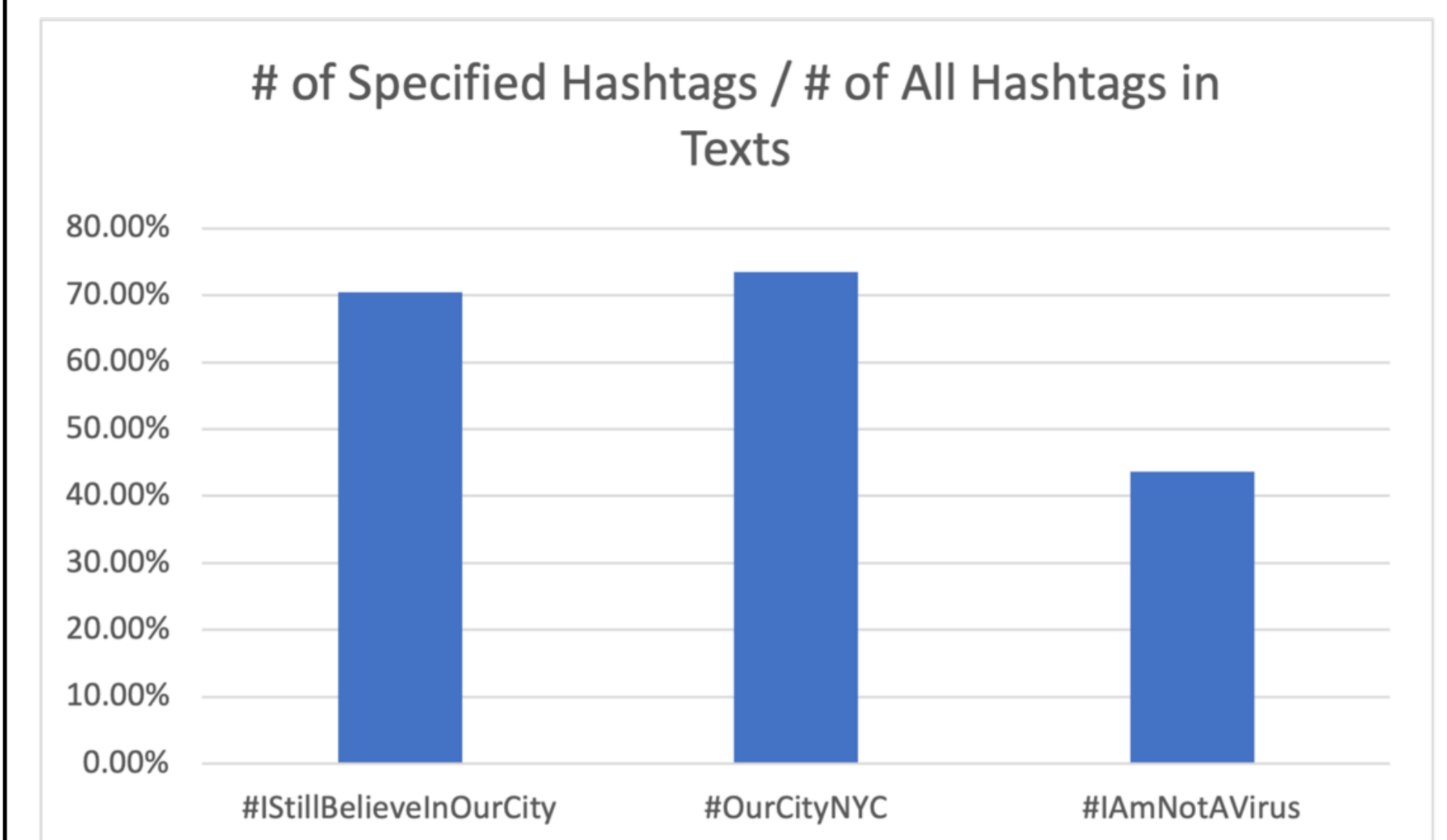


Figure 6. Numbers of Specified Hashtags / Numbers of All Hashtags

- b. Connected components to frame collective identities

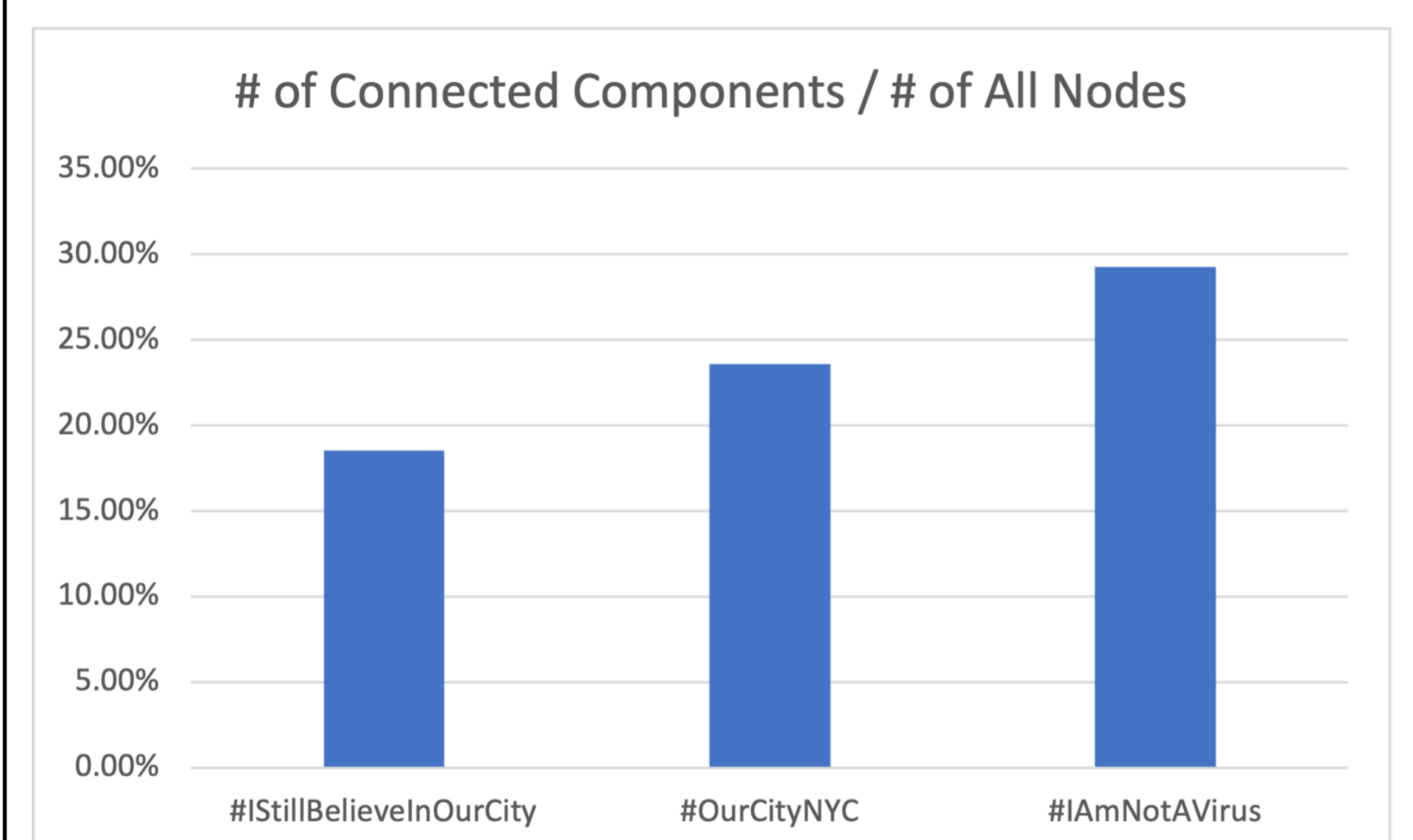


Figure 7. Numbers of Connected Components / Numbers of All Nodes

Implications

1. **Comparative Analysis:** differences and similarities in campaigns and movements spreading anti-xenophobic sentiments in the time of COVID-19
2. **Robustness:** if taking the organizers away, campaigns will easily fail; but individual-oriented sentiment spreading is more stable
3. **Recommendations:** opinion leaders matter, but individual involvement is essential in keeping enlarging the network size.

Future Work

1. Contexts could be broadened – instead of only focusing on COVID-19 related anti-xenophobic sentiments, also could identify other movements and campaigns that have wider coverage.
2. More quantification of identified communities' robustness could be done to offer more concrete recommendations to specific stakeholders within the community.

References

Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). FORCEATLAS2, a continuous graph layout algorithm for handy network visualization designed for the Gephi software. *PLoS ONE*, 9(6). <https://doi.org/10.1371/journal.pone.0098679>

Krinsky, J., & Crossley, N. (2013). Social Movements and social networks: Introduction. *Social Movement Studies*, 13(1), 1–21. <https://doi.org/10.1080/14742837.2013.862787>

Tahmasbi, F., Schild, L., Ling, C., Blackburn, J., Stringhini, G., Zhang, Y., & Zannettou, S. (2021). "go eat a bat, Chang!": On the emergence of Sinophobic Behavior on web communities in the face of covid-19. *Proceedings of the Web Conference 2021*. <https://doi.org/10.1145/3442381.3450024>

Tremayne, M. (2013). Anatomy of protest in the Digital Era: A network analysis of twitter and occupy wall street. *Social Movement Studies*, 13(1), 110–126. <https://doi.org/10.1080/14742837.2013.830969>

Tufekci, Z., & Tufekci, Z. (2017). The power and fragility of networked protest. In *Twitter and tear gas: The power and fragility of networked protest* (pp. 3–27). essay, Yale University Press.