What influences the rise of influencers?

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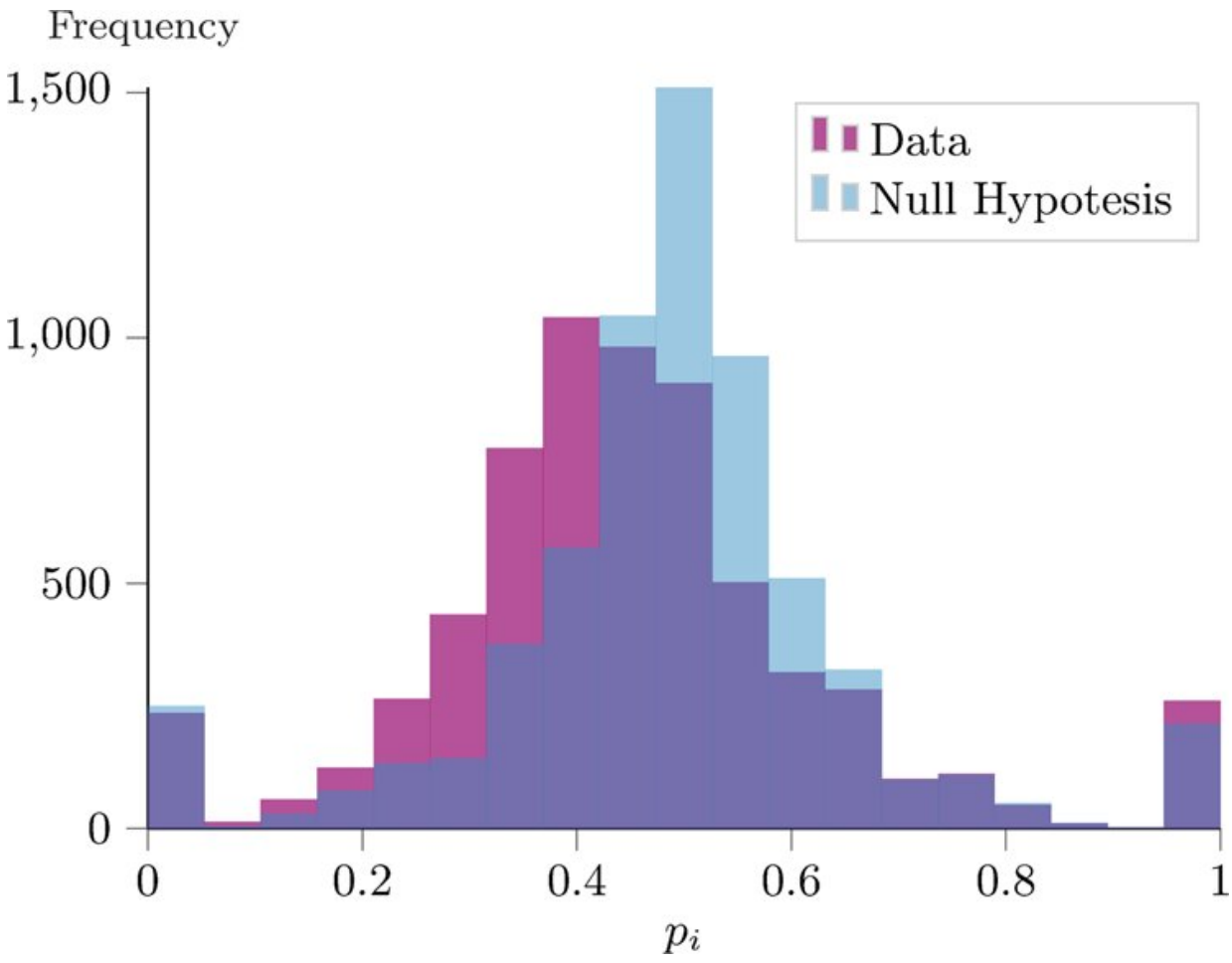

Fig. 1: Median-rule violation on the Twitter data set. In purple, we plot the histogram of the probability pi as defined in eq. (1). The data refer to N = 6474 agents out of the original 6757 by considering those with an out-degree of at least two. The median of the distribution is 0.436 (mean and std: 0.450, 0.189). In light blue, we compute the same distribution upon reshuffling the temporal sequences of the connections (null hypothesis). The median of this distribution is 0.5 (mean and std: 0.489, 0.173). The two distributions are statistically

significantly different (p value of Kolmogorov–Smirnov test ≪ 10−8). Credit: DOI: 10.1038/s41467-021-27089-8

A model to describe the formation of online communities and rise of influencers on social media platforms, based on the quality of user generated content, is reported in a study published in *Nature Communications*. The findings could improve our understanding of how social media influencers arise.

Social networks can often play a central role in the dissemination of information and can influence public opinion, but our understanding of the phenomena that takes place within these platforms remains elusive. In many popular social media platforms, such as Instagram, YouTube, TikTok and Twitter, users share content and actively engage with the content of other users to form virtual friendships. Interest-based communities often emerge through prominent users that can influence other users with their content.

Nicolò Pagan, Wenjun Mei and colleagues propose a mathematical model for social network formation, where users decide to link/follow each other based on the quality of their content according to their interests. The authors then tested their model against Twitter data in a network composed of over 6,000 scientists. The results suggest that users aim to increase the quality of the content they receive, and continually search for providers of the best quality content through integrated search engines. They found that users producing the highest quality content had twice as many followers as the second, and so on. The authors then validated their model using datasets from Twitch, a popular platform for online gamers. They suggest that the model maps the increase in popularity and network formations more realistically than previous models.

The findings provide insights into a possible mechanism for how social network communities and influencers are formed.

More information: Nicolò Pagan et al, A meritocratic network formation model for the rise of social media influencers, *Nature Communications* (2021). DOI: 10.1038/s41467-021-27089-8

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