

# How Does Community Structure Affect a Group's Opinion Diversity?

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Different social media environments enable different levels of community connectedness, which in turn affects the information that a user is exposed to. For example, a Facebook user is locally connected with their friends and generally only sees their friend's activities. A subreddit follower is globally connected with everyone else who interacts with the group, and sees everyone's activities. We investigate how these different levels of connectedness affects a group's diversity in opinions.

## Methods

We constructed an agent-based model where a group of agents individually judge whether they like/dislike a number of items. At each round, each agent sees the item that is most highly-ranked amongst its connected neighbors. Each item has a quality score that indicates the likelihood that an agent would like the item. We focus on the following three measurements:



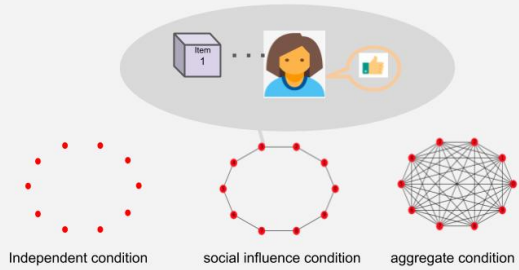
Opinion Diversity



Item Popularity



Network Efficiency



## Findings

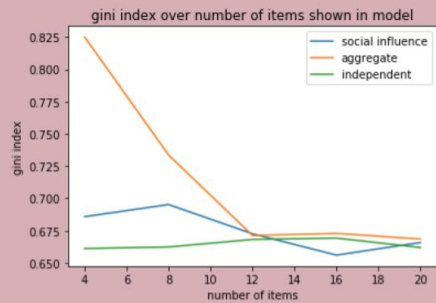
### 1: Local connections lead to greater diversity

	Heterogeneity score
Independent	0.607
Social influence	0.4984
Aggregate	0.406

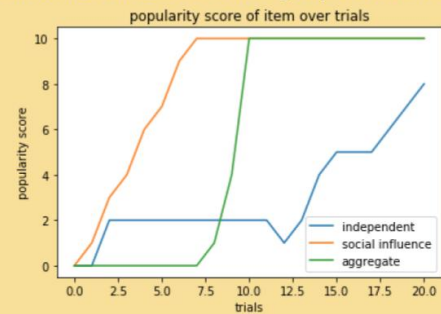
### 2: Global connections lead to greater item popularity skewness

	Gini index
Independent	0.34
Social influence	0.504
Aggregate	0.710

### 3: Item popularity skewness decreases as the group sees more items



### 4: Global connection leads to shorter group-level attention span



## Discussion

- We are currently in the process of measuring network efficiency.
- Our next step is to validate the model outcomes by conducting an empirical experiment through MTurk.
- For future work, it would be interesting to see if the finding of global connection leading to shorter group-level attention span is present on social media platforms with different levels of connectedness.

