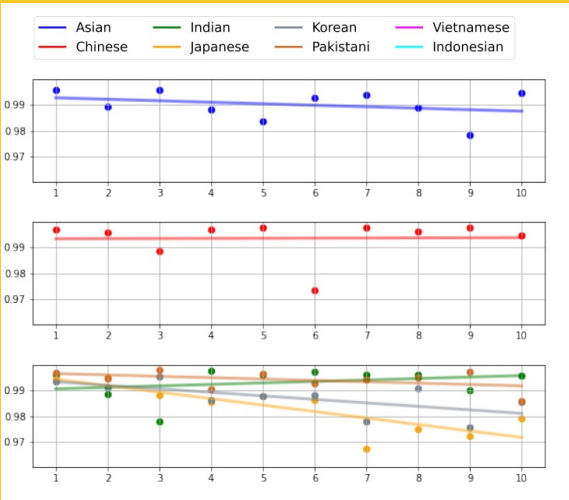


**RQ1: (a)** Are there changes in the magnitude of anti-Asian messages over time?  
**(b)** How do the trends over time vary across different ethnic groups?



Persistence Analysis

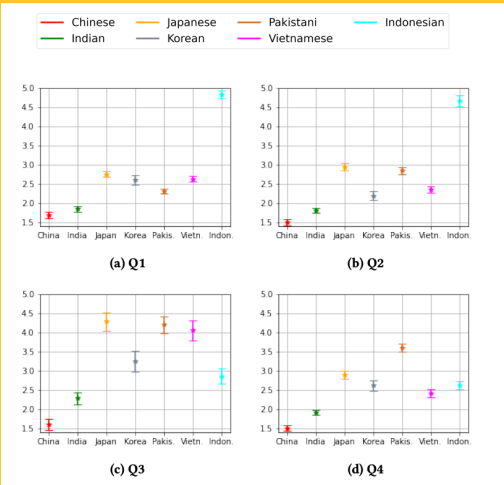


Nuanced differences exists in the temporal patterns when the data are disaggregated by ethnicity.

**RQ2: (a)** How semantically distant are anti-Asian messages when comparing those aimed at Asians in a general sense to those directed at specific sub-ethnic groups?  
**(b)** How do the semantic distances change over time?



Multiple Correspondence Analysis (MCA)



Toxic anti-Asian messages vary over time and target different sub-Asian ethnicities.

**RQ3: (a)** How are these topics distributed among messages targeting Asians in a general sense, those targeting major ethnic groups like Chinese and Indian, and those directed at smaller ethnic groups?  
**(b)** What are the prevalent topics of anti-Asian messages?



BERTopic

Group	Topic	Prob.	Representative words
Asian	Asian-on-other-race-trop	0.474	black, white, racist
Chinese	Hate against Chinese communism	0.408	realdonaldtrump, communist, government
Indian	India-Pakistan tension	0.643	terrorist, muslim, country
OtherAsian	Blasphemy surrounding K-pop	0.228	kpop, fan, bitch
	Anti-Pakistan	0.187	terrorist, muslim, country

Narratives targeting different groups have clear thematic differences in intensity and topic focus.