

The Susceptible-Infected-Recovered (SIR) Model for the Spreading of News in Twitter during Covid-19 Pandemic

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ABSTRACT

Twitter is one of the most used social media in Malaysia to spread the news to other users. However, the excessive spread leads to the issue going viral. Furthermore, factors that contribute to virality is not fully investigated. This study aimed to determine which topic has a higher virality rate in Malaysia. Specifically, this study is conducted to identify whether the number of followers affects the virality of news, verify which type of Twitter account has a higher virality rate, and investigate the effect of the parameter for this study. The numbers of followers and following for each selected Twitter user have been recorded. The two types of Twitter accounts, verified and unverified for each account, are also recorded. For each selected tweet, the number of comments, retweets and likes has been recorded every two hours for three days. The Susceptible-Infected-Recovered (*SIR*) model has been used to achieve the goal of this study. There are two steps in analyzing the data, step one is model formulation and second step is numerical experiment. This study found that Twitter users in Malaysia have a higher interest in news related to health issues compared to natural disaster issues. The result of this study shows that the number of followers does affect the virality of a tweet made by verified and unverified user accounts. The unverified account has a higher virality rate in spreading the news. The number of followers also encourages the virality of a tweet. Based on the result, it is recommended that other researchers use another extension method of the *SIR* model, such as the *SEIR* model, to investigate this study.

Keywords: SIR, Twitter, Tweet, Topic, Virality