

Universiti Teknologi MARA

**The Susceptible-Infected-Recovered (SIR)
Model for Viral Marketing using
Instagram**

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STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

E-business is a transaction of exchange between the information of products or services with the payments using Internet through the online business in social media. Meanwhile, viral marketing is a marketing technique that induces social media users to spread a product's or service's details. Required a short time to disseminate information, it is called as a very powerful medium of transmission. Understanding the dynamic of viral marketing through Instagram in a given period of time is the purpose of this study. Among others social media, Instagram provide a good environment for analyzing the diffusion of information by using image posts. In this paper, the epidemiology model consists of system of three differential equations with three compartments which are susceptible (S), infected (I) and recovered (R). In the three compartment, parameter is present between susceptible to infected which is stated as β and the parameter γ which is from infected to recovered. This research only focus on the SIR model without demography as the rate of birth, death and immigration excluded. As the data being collected, the parameter values being performed and the solution of the model obtained. Results showed that the messages transmission reaches its peak within two days. The solution from the number of reproduction also shows that an epidemic has occur. The parameters variation being applied to this model to analyze the different of scenarios that effect the transmission. This finding shows that SIR model is a reliable method for analyzing the dynamic of viral marketing.

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