Universiti Teknologi MARA

Marketing Related Video Analysis Using Susceptible- Infected-Recovered (SIR) Model

Shasha Fazlisa Binti Mazlan

Report submitted in fulfilment of the requirement for Bachelor of Science (Hons.) Management Mathematics Faculty of Computer and Mathematical Sciences

STUDENT 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.

Shasha

SHASHA FAZLISA BINTI MAZLAN

2017531413

AUGUST 5, 2020

ABSTRACT

One of the famous development technology in this world is Facebook. Facebook is a free social network site where everyone can connect with each other. In Facebook there is many feature for user to explore such as video. Nowadays, people like to record and post their video in Facebook especially for the entrepreneur. They can use Facebook medium to post their marketing video to promote their business. The main objectives in this study is to examine the dynamics of two different product marketing video that being spread. The sub-objectives in this study are to identify the cycle of product marketing video spreading and to compare the growth and the decline the number of viewers in regard in video marketing using an epidemiological model which is Susceptible- Infected- Recovered (SIR) model. In this study, two types of SIR model which is SIR model without demography and SIR model with demography were considered. The variable in this study is number of Facebook user who exposed to the video (Susceptible), the Facebook user who receive and share the video (Infected) and the Facebook user stop sharing the video (Recovered). Video of Naelofar Hijab new shawl and Aliff Syukri slimming product were chosen as case studies. The data were observed 7 days after the video is posted. The number of likes, number of share and number of comment were collected in this study to construct the model. The result showed that the content of the video does affect the spreading of the video. It can be conclude that based on this study, future researcher can take advantages in their future study by differentiating the viral of the video before and after COVID-19 cases.

Keywords: Facebook, Online Marketing Video, SIR Model

TABLE OF CONTENT

CONTENT	S	PAGE	
SUPERVIS	OR'S APPROVAL	ii	
DECLARA	iii		
ACKNOW	iv		
ABSTRAC'	V		
TABLE OF CONTENTS			
LIST OF F	IGURES	viii	
LIST OF TABLES			
CHAPTER	ONE: INTRODUCTION		
1.1	Background of the Study	1	
1.2	Problem Statement	4	
1.3	Objective of the Study	5	
1.4	Scope of the Study	5	
1.5	Significance of the Study	5	
CHAPTER	TWO: LITERATURE REVIEW		
2.1	Evolution of Social Network	6	
2.2	Facebook Features		
2.3	Online Video Marketing Tools	9	
2.4	Epidemiological Model	9	
	2.4.1 SIR Model	10	
	2.4.2 SEIR Model	11	
2.5	Summary	11	

CHAPTER THREE: RESEARCH METHODOLOGY

3.1	Method of Data Collection		
3.2	Method of Data Analysis		12
	3.2.1	SIR Model without Demography	13
	3.2.2	SIR Model with Demography	15
	3.2.3	Evaluate the Solution	18
CHAPTER 1	FOUR:	RESULTS AND DISCUSSIONS	
4.1	Data T	abulation	19
4.2	Analysis of parameter		21
4.3	The SIR Model without Demography		
	4.3.1	SIR Model without Demography Analysis	21
	4.3.2	Reproduction Number	22
	4.3.3	SIR Model Solution	23
4.4	The SIR Model with Demography		24
	4.4.1	Reproduction Number	25
	4.4.2	Linear Stability Analysis	25
		4.4.2.1 Naelofar Hijab New Shawl	25
		4.4.2.2 Aliff Syukri Slimming Product	27
CHAPTER 1	FIVE: C	CONCLUSIONS AND RECOMMENDATIONS	
5.1	Conclu	usions	28
5.2	Recommendations		31
DEFEDENC	FC		30