MATHEMATICAL MODELING OF THE BEHAVIOR OF COLLEGE STUDENTS WHO ARE ADDICTED TO ONLINE SHOPPING IN ONLINE MARKETS (E-COMMERCE)

By	: William Christopher Dasdo Purba
Student Identity Number	: 02191029
Supervisor	: Indira Anggriani, S.Si., M.Si.
Co-Supervisor	: Kartika Nugraheni, S.Si., M.Si.

ABSTRACT

Online shopping is a process of purchasing goods and services through digital media or intermediaries. Now online shopping activities have grown and developed into a new habit among the community. For young people, especially students, understand that online shopping is an alternative way of shopping that makes it easy to meet their needs. The many promotions offered, as well as payment methods that make it easy for consumers, will certainly encourage students to behave consumptively, they will be willing to spend their money just for goods that are not really needed. Therefore, it is necessary to make efforts to prevent consumptive behavior in students who are addicted to online shopping. This research aims to build a model of online shopping addiction in college students using the principle of the SEIR model (Susceptible, Exposed, Infected, and Recovered). The mathematical model in this research has 4 sub-populations, namely the group of students who do not have an E-Commerce application, the group of students who have an account in the E-Commerce application, the group of students who are addicted to online shopping, and the group of students who stop being addicted to online shopping. After determining the model, an analysis is carried out by finding the equilibrium point, equilibrium existence conditions, and stability analysis. Furthermore, to prove the results of the analysis, numerical simulations are carried out using the software. The result of this study is a mathematical model of students addicted to online shopping in E-Commerce, with 3 equilibrium points E_0, E_1, *and* E_2 *where* E_0 *is the equilibrium point when free of online shopping addiction while* E_1, *and* E_2 *are endemic equilibrium points of online shopping addiction. With the stability analysis obtained, a stable equilibrium point is obtained with the assumed value of certain parameters.*

Keywords :

mathematical model, online shop, dots, stability analysis, numerical simulation