ABSTRAK

Penelitian ini mengembangkan model matematika dinamika *compulsive buying* yang dipengaruhi oleh *review* dan *influencer*, terdiri atas lima subpopulasi: *Potential* (P), *Medium Compulsive* (M), *Influencer* (I), *High Compulsive* (H), dan *Recovered* (R). Analisis model meliputi penentuan titik ekuilibrium, parameter ambang batas $\mathcal{R}_0$ yang digunakan untuk menentukan penyebaran perilaku *compulsive buying* dalam populasi, dan analisis kestabilan menggunakan kriteria Routh–Hurwitz. Hasil analisis menunjukkan bahwa model memiliki dua titik ekuilibrium, yaitu titik ekuilibrium bebas *compulsive buying* E^0 stabil asimtotik jika $\mathcal{R}_0 < 1$, dan titik ekuilibrium adanya *compulsive buying* E^* stabil asimtotik jika $\mathcal{R}_0 > 1$. Simulasi numerik dilakukan untuk mengkaji pengaruh parameter *review* dan *influencer* dalam memengaruhi penyebaran perilaku *compulsive buying* dalam populasi. Hasil simulasi menunjukkan bahwa parameter *review* r merupakan parameter yang paling dominan meningkatkan $\mathcal{R}_0$ dan mempercepat penyebaran perilaku *compulsive buying* dibandingkan parameter pengaruh *influencer* terhadap subpopulasi *potential* (ρ) dan parameter pengaruh *influencer* terhadap subpopulasi *medium compulsive* (θ).

Kata kunci: *compulsive buying*, *e-commerce*, model matematika, bilangan reproduksi dasar, kestabilan, *review*, *influencer*

ABSTRACT

This study develops a mathematical model of *compulsive buying* dynamics influenced by *reviews* and *influencers*, consisting of five subpopulations: *Potential* (P), *Medium Compulsive* (M), *Influencer* (I), *High Compulsive* (H), and *Recovered* (R). The model analysis includes the determination of equilibrium points, the threshold parameter $\mathcal{R}_0$ used to assess the spread of *compulsive buying* behavior within the population, and stability analysis using the Routh–Hurwitz criterion. The analysis reveals that the model has two equilibrium points: the *compulsive buying*-free equilibrium E^0, which is asymptotically stable when $\mathcal{R}_0 < 1$, and the *compulsive buying*-present equilibrium E^*, which is asymptotically stable when $\mathcal{R}_0 > 1$. Numerical simulations are conducted to examine the effects of the *review* and *influencer* parameters on the spread of *compulsive buying* behavior in the population. The simulation results indicate that the *review* parameter r is the most dominant parameter in increasing $\mathcal{R}_0$ and accelerating the spread of *compulsive buying* behavior, compared to the *influencer* effect parameter on the *potential* subpopulation (ρ) and the *influencer* effect parameter on the *medium compulsive* subpopulation (θ).

Keywords: *compulsive buying, e-commerce, mathematical model, basic reproduction number, stability, review, influencer*