Market Forecasting using Trial and Repeat Model

Trial and Repeat Models

The file "Amazon Visits.xls" contains visitation data for a panel of Amazon customers and shows the number of visits (N_w) and new visitors (n_w) in each week (w).

Amazon Visits.xls

1. Specify a set of initial values for a_T, b_T, a_R, b_R, g and d and calculate $E(T_w)$ and $E(R_{w|i})$ for each cohort by week.

2. Again, using the same set of initial values specified in (1), calculate predicted visits for each week.

3. Define your calibration data period as weeks 1-24 and estimate the model parameters using NLS and Solver.

4. What is the average number of weekly visits per trier? What is the average number of weekly visits per repeater? Compare and discuss the differences.

5. Forecast the behavior of the first 24 cohorts (defined by the 24 weeks) in weeks 25-35.

6. Estimate an exponential model on the number of new visitors (again, using only weeks 1-24 as your calibration sample).

7. Forecasts both the number of new visitors and the number of visits for weeks 25-35 and calculate the forecast-MAPE.