ISE 560 Project Proposal

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1 Overview

1.1 Model

1.2 Metrics

2 NPS & Telemetry

3 Key Variables and Parameters

Identify and describe critical uncertainties within the model with regards to parameters and decision variables. Identify those uncertainties that may be dynamic (stochastic).

- Three variables of interest
  - pNPS
  - PSI and Star rating
  - Telemetry
- Discretize probabilities.
- We are given time series data for two years.

4 Critical Uncertainties

5 Markov Decision Process

6 Preliminary Data Analysis

Segment	Total Products	Products w/both Sentiment and NPS	w/Battery	w/Wifi	w/Driver Reliabity
Consumer	487	74	TBD	TBD	TBD
Commercial	238	46	TBD	TBD	TBD
SMB	59	18	TBD	TBD	TBD

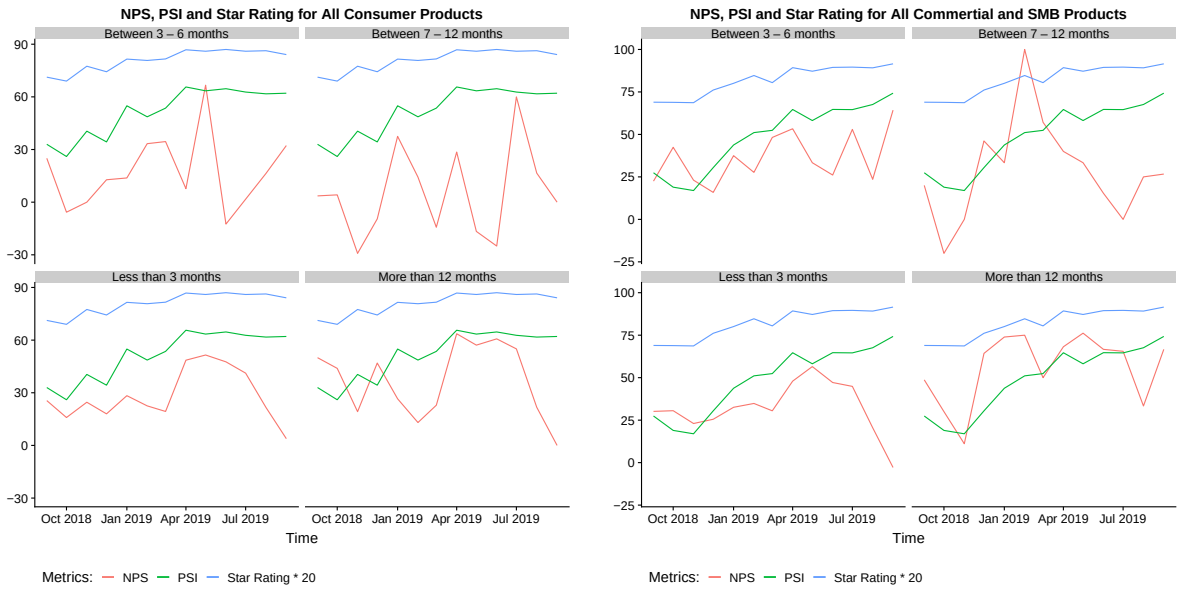

Figure 1: Trends in the pNPS, PIS and average star rating for downsampling over 1-month intervals.

Figure 1 provides a broad overview of the trends within pNPS, PIS and the star rating. Note that pNPS was calculated using the given formula. PIS was calculated by:

$$PIS = \frac{\text{Positive mentions} - \text{Negative mentions}}{\text{Positive mentions} + \text{Negative mentions}} \times 100. \tag{1}$$

The period of interest is one month. Star ratings are averaged over a month for each segment. In order to observe trends, star rating is scaled by a multiplicative factor of 20. Further note that as ownership durating is avaiable only for the surveys, the PIS and Star rating per segment will be identical in each facet.

6.1 Customer Sentiment

6.2 Telemetry