

Customer retention dynamics in a contractual setting: The paradox of increasing loyalty

Joseph Davies-Gavin, Harvard University
Peter Fader, University of Pennsylvania
Bruce Hardie, London Business School
Yuzhou Liu, New York University
Thomas Steenburgh, Harvard University

One of the most strongly held tenets in customer relationship management is that customers become more loyal (i.e., less likely to depart) as they gain tenure with a particular firm. Many retention strategies, loyalty programs, etc., are built directly upon this seemingly universal observation.

But is it really true?

We posit that it is easy to mistakenly infer “negative duration dependence” (i.e., a decreasing tendency to churn over time) when, in fact, most customers may actually be *increasingly likely to depart over time*. This apparent paradox is driven by the intertwined effects of heterogeneity and duration dependence, both of which are not well understood (or accounted for) by practicing managers.

In order to sort out these effects, we develop a simple but flexible discrete-duration model – the beta-discrete-Weibull. Using a variety of actual and simulated datasets, we demonstrate how easy it is for one of these effects to be mistaken for the other. Furthermore, we show (using real data) that when both factors are taken into account, there is little evidence to support negative duration dependence as the predominant dynamic trend. Finally, using readily available summary statistics (such as the aggregate retention rates from the first few time periods) we show how analysts can begin to tease apart the two effects and offer useful diagnostics about each of them.