Heterogeneity in Fan Demand for Visiting Team Quality in Major League Baseball

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The uncertainty of outcome hypothesis (UOH), initially developed by Rottenberg (1956), predicts that fans generally prefer games in which the winner is unknown. In other words, if one team is clearly the favorite, then fewer fans will attend that game. This work has driven much of the economic literature on sports attendance, most commonly estimating demand equations with standard panel regression models.

In most of these attendance studies fans are treated as monolithic. If you consider a fan in Seattle or Chicago, the only difference in their attendance would depend on their economic situation in each of the alternative cities. In these cases, all fans have the same qualitative response to the determinants of attendance choice, and the idea that preferences might well vary across fans is ignored. This fan heterogeneity may not only impact general demand estimation and managerial implications in different locations, but could also drive improper inference related to central theoretical contributions.

This work therefore focuses on preferences of Major League Baseball (MLB) fans for visiting team performance quality. Since this is strictly a preference variable, the elasticity of attendance with respect to quality of the visiting team may either be positive or negative. While it is typically included in demand analysis, it is assumed that preferences are homogeneous across fans. We directly evaluate the likely heterogeneity in fan consumption.

Our empirical analysis uses data from 1997-2017, and aggregates averages of the highest and lowest drawing visitors for each home team. We pair attendance averages with the average quality of these home and away teams over this same period to create a data set used for a flexible model-based cluster analysis. Our cluster analysis identifies six distinct clusters based on these inputs, revealing clear heterogeneity in the average fan response to visiting team quality – and implicitly to uncertainty of outcome – often closely tied to their own home team’s quality.

Specifically, fans of some lower-quality home teams prefer higher-quality visitors while fans of other low-quality home teams attend at higher rates when the home team is facing a closely matched visitor. The same goes for fans of high-quality home teams. We speculate why this is so: fans that are loyal supporters of a team when it is low quality are not the same fans that begin to appear only when the team increases in quality. Therefore, some fans are already different than other fans in the same venue. Indeed, as game attendance can also serve as a social event, many fans may be agnostic to uncertainty or quality altogether.

We stress that it would be wrong to conclude from our findings that there is no support for the UOH, generally speaking. Since this work is about preferences, UOH can hold for a given fan at some points in time and not others, with this preference moderated by home team quality. We expand up on the implications of fan heterogeneity with respect to both economic theory and empirical approaches to understanding both sports demand and the UOH.