Local Viewership Demand in Major League Soccer

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Relevance and Literature Review
Sports fans have two central choices when consuming live sporting contests: attend the live game or to watch the game through a live broadcast. The stark difference between these two options is the cost associated in the consumption while decisions are dependent on individual preferences. Sport managers must understand any variation in preferences of consumers across these consumption avenues, as sales, marketing, and team performance quality strategies may hinge on appropriately addressing each market segment. Previous work has found that there exist different determinants affecting attendance and viewership demand in the context of National Basketball Association (Mongeon & Winfree, 2012). This finding indicates that it is important to treat these different types of demand for sports separately, and recent work has turned to broadcast ratings to establish the relationship between classical demand variables and consumer interest in game broadcasts (Tainsky, 2010; Tainsky & McEvoy, 2012). Nevertheless, further holistic research on both types of demand has been limited, particularly in terms of Uncertainty of Outcome Hypothesis (UOH). Rottenberg (1956) states that sports fans favor games with greater unpredictability in its possible outcome indicating that preferences for sporting contests are dependent upon close on-field competitiveness of the competing teams. Traditionally, this idea was tested mostly on the gate attendance, while more recent studies have focused upon viewership demand. However, there has been lack of studies particularly regarding viewership demand for Major League Soccer. Furthermore, in terms of the consumption choices, it is expected that the reference point for both types of demand will differ mainly due to the difference in associated costs (Coates, Humphreys, & Zhou, 2014), indicating that preference for uncertainty of outcome will be different for live attendance and viewership demand.

Previous literature on demand for MLS has found some evidence of fans’ preference on star players (DeSchriver, 2007; Lawson, Sheehan, & Stephenson, 2008; Jewell, 2017; Shapiro, DeSchriver, & Rascher, 2017) while asymmetric salary distributions negatively affect productivity (Coates, Frick, & Jewell, 2016). Additionally, Jewell (2017) found increased attendance demand for MLS rivalry matches. In terms of viewership demand, only Paul and Weinbach (2013) have investigated patterns of consumption by MLS fans. This work found evidence supporting the uncertainty of outcome hypothesis in MLS using national broadcasting based only on a single year of observations.

Purpose and Importance
Given this body of work, there are two areas that require further investigation pertaining to viewership demand for MLS. First, a more thorough investigation of outcome uncertainty and its relationship with viewership demand needs to be explored with time-series panel data to establish a more rigorous test of UOH in MLS. Secondly, because not all the MLS games are broadcasted nationally due to its limited contract with network affiliates in the past, inquiry into local market viewership may provide a more thorough understanding of MLS consumer interest as the league continues its expansion. We seek to address both gaps in the literature with this work.

Data and Methods
As is standard in the demand literature, we assume that local viewership of MLS games is defined by a general demand function:

\[ \text{AvgRating} = f(\text{EC}, \text{OU}, \text{TQ}, \text{SP}, \text{RV}, \text{TA}) \]

where the average rating (AvgRating) for a match is a function of economic characteristics (EC) such as income and population, outcome uncertainty (OU) such as implied probability from betting odds, team performance quality (TQ), the presence of super star players (SP) such as the number of designated players, rivalry matches (RV) like MLS rivalry cups, and each competing team’s age (TA) as a measure of the time over which fans may become more
For this study, we collected Nielsen Local People Meter live game average ratings for all televised MLS regular season games from 2010 to 2014 season for local markets that host an MLS team appearing in the televised games (both home and away). These include ratings for national broadcasts in the local market and local broadcasts in the local market, as well as Spanish language broadcasts where applicable. In the cases where a game is broadcasted simultaneously on multiple channels, we summed the average ratings for the broadcast, while using weighted ratings for games if it was aired separately in different channels based on total times broadcast on each channel. The Nielsen ratings for each game are used as the dependent variable in a regression model as follows:

$$\ln(\text{AvgRating}_{giijt}) = \beta_0 + \beta_1 \times \text{WP}_{giijt} + \beta_2 \times \text{WP}_{giijt}^2 + \beta_3 \times \text{HELO}_{git} + \beta_4 \times \text{AELO}_{git} + \beta_5 \times \text{HDP}_{it} + \beta_6 \times \text{ADP}_{jt} + \beta_7 \times \text{Rivalry}_{ij} + \beta_8 \times \text{HAge}_{it} + \beta_9 \times \text{AAge}_{jt} + \beta_{10} \times \text{HInc}_{it} + \beta_{11} \times \text{AInc}_{jt} + \beta_{12} \times \text{HPop}_{it} + \beta_{13} \times \text{APop}_{jt} + \theta_i + \tau_t + \mu_g + \delta_g + \epsilon_{giijt}$$

Here, $i$ and $j$ ($i \neq j$) represents competing home and away team in each game, $g$, in year $t$, respectively. Betting odds converted into home and away team’s winning probability is represented by WP; Elo ratings for home and away team are represented by HELO and AELO, the number of super star players (Designated Players) are represented by HDP and ADP, MLS rivalry games are represented by Rivalry, team age is represented by HAge and AAge, and income and population of home and away market are represented by HInc and HPop, AInc and APop. Home team fixed effects are represented by $\theta_i$, yearly effects are represented by $\tau_t$, while monthly and day of week effects are included as $\mu$ and $\delta$, respectively. As the minimum rating is recorded as zero, we will use a panel Tobit correction to account for this left-censoring in the data. We note that this work is ongoing, with all data collected, cleaned, and ready for analysis.

Discussion of Expected Results
As we assume viewership demand to be more risk neutral compared to live game attendance, and given past work on national broadcasts, we expect that home market team average ratings will be an increasing function of uncertainty of outcome, while its shape will resemble concave function where the highest bound is near the point where uncertainty of outcome is maximized. This hypothesis implies an inverse U-shaped curvilinear relationship when uncertainty is measured by win probability. We also anticipate team performance quality and presence of super star players to have positive effect on viewership demand. That is, home market team average ratings will be positively associated with home team quality as well as number of superstar players. In addition, rivalry games are expected to have greater ratings as well as team that has existed longer within the league. Interestingly, our preliminary summary of the data shows extremely large disparities in market size, as measured by viewership, relative to more established North American leagues. The magnitude by which ratings vary has important implications for the single entity status of MLS and its centralized control that may be necessary for league survival at least in the short term. We will discuss this important antitrust issue within our presentation.

Contribution to the Body of Knowledge
Overall, this study can improve the understanding of viewership demand and its determinants within the MLS that do not have the level of national coverage of other major U.S. leagues. Furthermore, our investigation could extend the discussion on the difference in preferences of outcome uncertainty for attendance and viewership demand in regards to sports consumption choices, whether broadcast or attendance, as a companion paper has shown that the absolute quality of teams dominates local game attendees’ interest in uncertainty of outcome. We will expand upon this contrast in our presentation.