Determinants of Television Viewership in NCAA College Basketball: Does Quality Predict Quantity?

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Introduction
Television broadcasting and media rights are a critical and growing revenue stream for both the National Collegiate Athletic Association (NCAA) and the respective athletic departments participating at the highest level of competition (Salaga & Tainsky, 2015). In the 2014 fiscal year, the NCAA reported revenues of $989 million, with approximately 90 percent of those revenues coming from the agreement with CBS Sports and Turner Broadcasting for television rights to the Division I Men’s Basketball Championship Tournament (Strachan, 2015).

Furthermore, a recent contract extension with these companies through the 2032 season for the broadcast rights to March Madness is expected to push the value of television rights to over a billion dollars per year (Sherman, 2016). There has been a growing interest in understanding of what drives television viewership for these contests as the value of live sports broadcasting continues to increase (Salaga & Tainsky, 2015), and with this contextual expansion to include intercollegiate sports, where the “major” and “mid-major” conferences often square off, the national appeal of status can be quantified. Moreover, university administrators’ arguments to move up to a higher level of competition are in no short supply (Sandy & Sloane, 2004). Accordingly, the purpose of this study is twofold. One, to estimate the determinants of television viewership for NCAA Division I men’s college basketball; two, to estimate the impact of various quality measures including conference membership.

Relevant Literature
The topic of estimating demand for live sport is a cornerstone area of investigation in the field of sports economics. However, the majority of previous research on demand has commonly used game day attendance as a proxy of demand (Borland & MacDonald, 2003). The settings of these studies are largely concentrated in European club football (Forrest & Simmons, 2002; Szymanski, 2001) and North American major league sports (Humphreys, 2002; McDonald & Rascher, 2000; Schmidt & Berri, 2001). While there are certainly advantages to using game-day attendance as a proxy of demand, one persistent issue is that attendance largely captures preferences of consumers who support the home team.

More recently, researchers have turned to utilizing television ratings to estimate demand in a wide array of leagues and sports. An advantage of utilizing television viewership as a proxy of demand is that it is more likely to represent the preferences of a wider variety of consumers. But again, most of the work which estimates television demand lies in European club football (Alavy, Gaskell, Leach, & Szymanski, 2010; Buraimo, 2008; Buraimo & Simmons, 2009; Forrest, Simmons and Buraimo, 2005; Johnsen and Solvoll, 2007), North American major league sports (Mongeon & Winfree, 2012; Paul & Weinbach, 2007; Tainsky, 2010; Tainsky & McEvoy, 2012; Tainsky, Xu, Salaga & Mills, 2013) and NCAA college football (Salaga & Tainsky, 2015). To our knowledge, there are no existing studies which estimate the determinants of consumer interest in NCAA college basketball.

Data and Model
We utilize television viewership figures for all nationally televised regular season and post-season conference tournament games during the 2014-2015 season. All viewership figures were collected from sportsmediawatch.com. In total, there are 948 contest-level observations. We estimate a viewership model using zero-truncated negative binomial regression as our data is truncated from the left and overdispersed. Our dependent variable is raw national viewership for each contest. On the right-hand side, we included predictors accounting for expected game quality,
actual game quality, temporal factors, and consumer availability with all variables measured in real-time at the point in time the contest is played. The general form of the estimating equation follows:

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\text{Viewership} = B_0 + B_1 \text{Expected Quality} + B_2 \text{Actual Quality} + B_3 \text{Temporal Factors} + B_4 \text{Availability} + \varepsilon
\]

The expected game quality variables include the average Ken Pomeroy power rating of the competing teams, the raw difference in Pomeroy rating between the two teams, the average current season winning percentage of the competing teams, the average winning percentage of the competing teams in the three prior seasons, the absolute value of the pre-game closing line point spread, the closing line over/under total, conference indicators, a Power Five out-of-conference game indicator, a conference tournament game indicator, and a conference tournament championship game indicator. Actual game quality variables include the final scoring margin of the contest and the total points scored in the contest. Temporal variables include month of season indicators and the time which the game aired. Availability variables are indicators identifying the television channel which the game was broadcast.

Results
Our initial results demonstrate strong consumer sensitivity to absolute contest quality as lower average Pomeroy ratings (higher quality teams) are significantly associated with increased ratings. Alternatively, we do not see support for sensitivity to relative contest quality as the difference in Pomeroy rating between the competing clubs is non-significant. The modeling also illustrates that even after controlling for Pomeroy power ratings, viewership is significantly higher when the contest features teams with higher current season winning percentages and higher multi-season winning percentages (we have verified that correlation between these variables is not problematic).

In opposition to the prediction of the uncertainty of outcome hypothesis (UOH; Rottenberg, 1956), our results indicate that ratings are significantly higher when the absolute value of the closing line point spread is larger. This indicates consumers have a preference for contests expected to be more certain. This result supports existing work which analyzes television viewership in college football (Salaga & Tainsky, 2015). Similar to Paul & Weinbach (2006), we also find that viewership is sensitive to anticipated scoring as consumer interest is significantly greater when the closing line over/under total is higher.

With respect to actual contest quality, viewership is higher for games in which the actual scoring margin is smaller. This indicates that consumers initially prefer games expected to be more certain, but also respond to games where outcome uncertainty is increased.

We also uncover that viewership is significantly lower in the start of the season, when college basketball more directly competes with televised college football.

Our modeling also illustrates that viewership is very sensitive to conference affiliation as viewership is significantly greater for conference games in the ACC, Big 10 and SEC only. Remarkably, no premium existed for Pac 12 and Big 12 schools in spite of their widespread acceptance as “major” conferences. Accordingly, there is mixed support for the notion that mere membership of a major conference increases viewership.

Implications
To our knowledge, this is the first study which estimates the determinants of television viewership in NCAA college basketball. Given the growing value of television broadcasting rights for NCAA content, it is vital to understand what drives television viewership in this context. This work adds to a small, but growing line of literature which examines demand for televised sport. Our results also add to an emergent line of empirical results which provide evidence against the longstanding UOH as it relates to anticipated game uncertainty. The results are also relevant to broadcasting networks and NCAA conferences as we demonstrate the degree to which consumers prefer contests with specific status characteristics. This can aid in determining optimal broadcast matchups in order to increase television ratings, which is directly tied to advertising fees and ultimately NCAA conference revenues.