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The relationship of fantasy football participation with NFL television ratings

John A. Fortunato

KEYWORDS:

Fantasy Sports, NFL, Television Ratings

ABSTRACT

An estimated 30 million people participate in fantasy football leagues, yet little academic research has been conducted on this topic. While there are many factors that can contribute to the television rating of a sports event, this study asks if fantasy football participation can serve as an additional motivating factor for fans to watch National Football League (NFL) games on television. Results provide some evidence that games with more NFL players starting in a high percentage of fans' fantasy football leagues have higher Nielsen ratings, although there are differences for the games on NBC vs. ESPN, percentage of starting fantasy players, teams' combined winning percentage, and closeness of game.

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Introduction

Fantasy football, where fans compile player statistics from actual professional games to compete against opponents in their fantasy matchups, continues to be a phenomenon with an estimated 30 million people participating in fantasy leagues (Pucin, 2009). According to Nielsen Media Research more than 1.2 billion minutes were spent on fantasy websites in 2008 (Kimball, 2008). Despite these fantasy sports participation statistics, Baerg (2009) points out that little academic research has been conducted on this topic.

The purpose of this study is to examine whether fantasy football participation can serve as an additional motivating factor for fans to watch National Football League (NFL) games on television. The primary research question is: does a game having more NFL players that are starting in a high percentage of fans' fantasy football leagues lead to an increase in that game's television rating? To address this question this study analyzed the relationship between games that featured NFL players starting in a high percentage of fantasy leagues for that particular week and

the television rating for the games that were televised on NBC's Sunday Night Football and ESPN's Monday Night Football. There are several factors that can contribute to the television rating of a sports event, therefore, it must be clearly noted that it is not being argued here that fantasy football participation is the dominant factor influencing viewing, but rather testing to see if there is a relationship between fantasy football participation and viewing NFL games on television. Because there are so many factors that can influence a television rating, the variables of teams' combined winning percentage and margin of victory in the game are also analyzed in comparison to the television rating for the NFL games on NBC and ESPN.

The issue of audience motivations for media use has long been discussed in the mass communication literature. In the specific context of motivation of media use for sports content, researchers have identified the unknown outcome of the game as the motivating factor that most influences the behavior of watching. For sports fans, another major motivation is seeing favorite teams and players win or teams and players they

do not like lose (e.g., Gantz, 1981; Wann, Schrader, & Wilson, 1999; Wenner & Gantz, 1998; Zillman, Bryant, & Sapolsky, 1989). Therefore, the unknown outcome of fans' favorite team's games influences the behavior of viewing their games on television. These researchers, however, were only evaluating fans' motivations to watch these games based on their results factoring into the actual, real-life sports league standings. The question that emerges is: couldn't these same motivations for watching teams and players win or lose extend to the unknown outcome of fans' games in their fantasy football leagues? Could the unknown outcome of fans' fantasy team's games influence the behavior of viewing NFL games on television?

Literature Review

Some of the seminal works in the field of mass communication try to account for the motivational factors in the media use behavior of the audience (e.g., Blumler & Katz 1974; Katz, Blumler, & Gurevitch 1974; Rosengren, Wenner, & Palmgreen 1985). Rubin (1984, 2002) identifies two media-use orientations toward a medium and its content that are based on audience motives, attitudes, and behaviors: (1) ritualized media use and (2) instrumental media use. Ritualized media use focuses on how people use their leisure time and which medium they attend to when multiple media options are available. In ritualized media use the tendency is to use the medium regardless of the content.

Instrumental media use focuses on purposive exposure to specific content and is more intentional and selective on the part of the individual audience member (e.g., Rubin, 1984, 2002). It is the content available through a particular medium at a particular time that motivates the media use behavior. In the context of sports content this instrumental mass

media use can be a factor in a person organizing his or her day so as to be done with any other activities and be available to watch the game live at the time it is being played.

Television networks attempt to tap into both the ritualized and instrumental media use orientations by aligning certain programming with the leisure time of their desired audience (e.g., Fortunato, 2008). The NFL and its television partners have created a consistent programming schedule for the times that NFL games are played to capitalize on the ritualized nature of television viewing (Sunday afternoon at 1:00 and 4:00 est., Sunday night, Monday night, and a few games on Thursday night or Saturday night at the end of the season on the NFL Network). The NFL and its television partners then try to schedule the best teams and the best players to participate in the televised games, especially the games in prime-time, as the means to help increase the instrumental viewing component (e.g., Fortunato, 2008).

Several researchers have examined the motivational factors for the media use behavior of the audience in the very specific context of sports (e.g., Trail, Anderson, & Fink, 2000; Trail & James, 2001; Wann & Branscombe, 1993; Wenner & Gantz, 1998). It is the characteristics of the sports audience that make the motivational factors of this group's media use unique. The sports audience has been described as very loyal and watching sports has been found to satisfy emotional needs (e.g., Gantz & Wenner, 1995; Mullin, Hardy, & Sutton, 2007; Wann, et. al., 1999; Zillmann et. al., 1989). Wenner and Gantz (1998) point out "concerns with seeing 'who wins' and how one's 'favorite does' are among the strongest individual motivations for sports viewing. These tend to combine with the enjoyment that comes with experiencing the 'drama and tension' and the excitement of 'rooting' for a player or team to win" (p. 236).

Zillmann, Bryant, and Sapolsky (1989) recognize the sports fans desire to see their favorite teams win and that fans also display emotions towards teams they do not like in their disposition theory of sportsfanship. The disposition theory claims that enjoyment of watching sports contests and athletic excellence, “depends to some extent, at least, on the particular person displaying such excellence, and on the particular team to which this person belongs. People applaud great play on the part of their favorite athletes and teams. The same excellence, the same mastery of skills, seems to be far less appreciated, possibly even deplored, when it is exhibited by disliked athletes or resented teams” (p. 256). For example, fans in Green Bay will applaud the skills of Packers quarterback Aaron Rogers, but now deplore the similar skills of a player they once cheered, former Packer quarterback and current member of the Minnesota Vikings, Brett Favre. Along with an obvious interest in watching their favorite team’s games, in applying the disposition theory of Zillmann et. al. (1989), Fortunato (2004) also found that fans have a strong interest in watching games when their favorite team is not playing, but the outcome of the game has an impact on their favorite team’s position in the league standings.

These theoretical concepts of ritualized and instrumental viewing, the unknown outcome of the game, or seeing how a favorite team or player performs were, however, only described in motivating the audience to watch actual, real-life sports events. This paper applies these motivations to fans watching football on television because of their fantasy football participation. Fans now might be motivated to watch NFL games to root for the players on their fantasy team. Or, in applying the disposition theory, fans might be motivated to watch the game to root against an NFL player on a fantasy team that they are competing against that week or a game that features an

NFL player who is on a fantasy team that is in the same division in their fantasy league. It is still the unknown outcome of the game, the concern for seeing how players perform, and the fans’ desire to win that serve as the motivating factor in an instrumental media use behavior of the audience.

Fantasy Sports

Academic research about the phenomenon of fantasy sports is continuing to develop. Several articles chronicle the history, participant demographic profile, economic impact, and cultural impact of fantasy sports (Baerg, 2009; Davis & Duncan, 2006; Roy & Goss, 2007). One prominent area in the study of fantasy sports focuses on the motivations of fantasy sports participants (e.g., Bernhard & Eade, 2005; Davis & Duncan, 2006; Farquhar & Meeds, 2007; Kaplan, 1990; Rein, Kotler, & Shields, 2006; Roy & Goss, 2007). Roy and Goss (2007) contend that fantasy sports participation is motivated by both internal psychological variables and external social variables. They explain the internal psychological variables are the ability to: (1) exert control as the owner of a team with the ability to select the players, make trades, and put together a starting lineup, (2) the desire to escape reality in getting away from daily routines and stress, and (3) the feeling of achievement obtained by being successful in defeating the competition in a fantasy matchup.

Other scholars have elaborated on these internal motivations. Regarding the control motivation Kaplan (1990) emphasizes the ability to personalize a team through activities such as creating a team name and logo. Davis and Duncan (2006) identify the ability to demonstrate ones sports knowledge in drafting players, while the ability to gather information and statistics about the actual sport and its players has also been consistently found in the literature as a motivating factor for fantasy

participation (e.g., Farquhar & Meeds, 2007; Rein, et. al., 2006). Several authors comment on the competition aspect of fantasy sports participation. Farquhar and Meeds (2007) argue that the fantasy sports participants' desire for victory motivated their behavior for joining a fantasy league. Bernhard and Eade (2005) claim that the gambling involved could be a motivating factor for fantasy participants.

Roy and Goss (2007) document the external variables of being a part of a community with shared interests and the opportunity to socialize with family, friends, and colleagues.

Other scholars also comment on the motivational value of building and maintaining social relationships (e.g., Bernhard & Eade, 2005; Davis and Duncan, 2006; Rein, et. al., 2006). Bernhard and Eade (2005) stressed the importance of the Internet in assisting with the socialization aspect of playing fantasy sports with participants permitted to post comments on league message boards.

Roy and Goss (2007) also applied marketing principles of product, price, and promotion in their analysis. The fact that participating in fantasy sports is made easy through online Web sites and often free or of little expense contributes to the number of fantasy players. These forms of media facilitate the ability to engage in competition, an important motivating variable as discussed above. The fantasy-game competition is easy to follow through the Internet with Web sites updating real-time statistics and through the traditional media of watching games on television. Russo and Walker (2006) emphasize the intersection of fantasy participation and television viewing. Baerg (2009) points out because fantasy sports are an increasingly important part of the sports culture, traditional media outlets are devoting more attention to fantasy sports.

While the motivations for fan participation in fantasy sports have been provided, sports leagues and television networks would

be interested in how this fantasy sports participation is a motivating factor for another behavior vital to the sports business, the watching of games on television. There is some evidence of this relationship. Birch (2004) identifies that fans' focus on individual performance can make games more attractive. Davis and Duncan (2006) provide some evidence from fantasy players who state their motivation for watching a game is due to having a player participating in the real game on their fantasy team. Still, there needs to be additional evidence based on an important statistical measure, such as television ratings, that can further substantiate the impact of fantasy sports. Baerg (2009) claims that scholars need to pay more attention to the fantasy sports industry, specifically identifying how fantasy sports fits into the content delivery strategy of television networks as one area of desired inquiry.

The Football Industry: Televising, Scheduling, and Ratings

The relationship of fantasy football participation with the television ratings of NFL games might provide the NFL and television networks another resource in scheduling its games. Executives from the NFL and its prime-time television partners (NBC for Sunday night games and ESPN for Monday night games) try to select games that are so attractive they will lead to the instrumental viewing as described by Rubin (1984, 2002). The selection of which teams will appear on nationally televised games is the first step in setting up the entire schedule of games for the NFL (e.g., Fortunato, 2008). Formulating the schedule for the upcoming season in the spring is a challenge for the NFL and its television partners. For example, the New Orleans Saints won the Super Bowl, but were never on NBC's Sunday Night Football during the 2009 regular season, while the Chicago Bears had a record of 7-9 in 2009, but

appeared in three games on NBC.

This difficulty created the need for the NFL to allow NBC to have a flexible schedule for the last seven weeks of the NFL regular season (e.g., Fortunato, 2008). In 2009, NBC exercised its option to flex out of one previously scheduled game and into a more desirable matchup once when in week thirteen it did not broadcast the game between the New England Patriots and the Miami Dolphins and instead televised the Minnesota Vikings at the Arizona Cardinals. NBC does not have to choose its week seventeen matchup until six days prior to the game when it knows which game will have the greatest playoff implications. In 2009 NBC selected the Cincinnati Bengals at the New York Jets for its week seventeen game.

This study, therefore, attempts to address two concerns of scholars: the continued study of audience motivations for mass media use and the need for a more extensive examination into the influence of fantasy sports as expressed by Baerg (2009). With the popularity of fantasy football, it is valuable to provide some measure of this relatively new, but increasingly important phenomenon with a traditional measure of sports popularity and a major component of the sports business model, television ratings.

Research Questions

In accessing whether fantasy football participation can serve as an additional motivation to watch NFL games, the primary research question is:

Research Question One: Does a game having more NFL players that are starting in a high percentage of fans' fantasy football leagues lead to an increase in that game's television rating?

Trying to determine if there is a relationship between the variable

of NFL players starting in fantasy leagues with that game's television rating is important because it provides some measure of the cultural impact of fantasy sports as well as the passion and media use behavior of fantasy football participants.

To provide a more comprehensive analysis and acknowledge that the factors of team's combined winning percentage and margin of victory also have a relationship with the television rating of a sports event, the following research questions are also identified:

Research Question Two: Does a game between teams with higher winning percentages lead to an increase in that game's television rating?

Research Question Three: Does a game between teams with higher winning percentages lead to an increase in the number of NFL players starting in fans' fantasy football lineups?

Research Question Four: Does a game between teams with higher winning percentages from the 2008 season lead to an increase in the game's television rating when those teams played in 2009?

Research Question Five: Does a game with a smaller margin of victory lead to an increase in that game's television rating?

Method

To respond to these research questions, correlations were conducted between NFL players starting in fantasy football leagues for that particular week and the television rating for that particular game. The NFL games that were broadcast on NBC's Sunday Night Football and ESPN's Monday Night Football during the 2009 regular season are chosen because they are

played at a time when there is no competition from other NFL games and these games are televised to the entire country. The games on Sunday afternoon televised on Fox or CBS are in many instances regionalized broadcasts with each city seeing the game of its local team. Using the NBC Sunday night games and ESPN Monday night games provide a sample size of 33 games.

Measures

CBS Sportsline is used to provide the percentage of fantasy leagues that an NFL player was starting in for that particular week. CBS Sportsline is used because CBS is also a broadcast rights holder for NFL games with the ability to cross-promote between the television network and the Web site. Roy and Goss (2007) comment on the important role that CBS Sportsline has played in cross-promoting fantasy football through its broadcast network. For every NFL player CBS Sportsline provides the percentage of fantasy leagues in which he is owned and the percentage of fantasy leagues that he is starting in for that particular week. For example, Peyton Manning, Indianapolis Colts Quarterback, in the week two game against the Miami Dolphins was owned in 100 percent of CBS Sportsline fantasy leagues and fantasy owners had him starting in 99 percent of those leagues. For each game on NBC and ESPN the percentage of fantasy leagues that the relevant fantasy players were starting in was gathered. The relevant fantasy players are the team's quarterback, running backs, wide receivers, tight end, kicker, and team defense. It is the players at these positions real-game statistics that account for fantasy points. It is only the players starting measure that is being used in this analysis as only those players' statistical performance influences the outcome of the fantasy games for that particular week.

Two versions of the fantasy player measure were used for the analysis: (1) the number of

NFL players starting in greater than 50 percent of the fantasy leagues on CBS Sportsline for that particular week and the game's television rating and (2) the number of NFL players starting in greater than 90 percent of the fantasy leagues on CBS Sportsline for that particular week and the game's television rating.

The second measure is the television rating for the NFL games on NBC's Sunday Night Football and ESPN's Monday Night Football for the 2009 regular season. For the NFL and its television partners television ratings are still the most important audience feedback measure (e.g., Fortunato, 2008). The television ratings have a direct impact on the business model of the sports industry. Sports leagues and television networks sign a broadcast rights contract where the network agrees to pay a sports league a certain dollar amount for a certain number of years for the rights to televise that league's games in order to provide the networks' advertisers access to desired audiences (e.g., Fortunato, 2008; Wenner, 1989). A higher television rating has an initial economic benefit to the network and eventually the league benefits when it negotiates its next broadcast rights contract. The ratings data presented here are provided by Nielsen Media Research and available through the Sports Media Watch website, <http://sportsmediawatch.blogspot.com>.

A third measure used in this study is the teams' winning percentage at game time, and overall from the prior year. For both the NBC and ESPN games, correlations were conducted to test the relationship between teams' combined winning percentage at the time of the game, and from the overall prior year, with the television rating for that game. As discussed above, a teams' prior season performance is a major factor in the number of prime-time games the team appears in for the upcoming season when the schedule is made.

It is important to note, and logical to assume, that NFL teams with a high winning percentage would be the teams with many players that are starting in a high percentage of fantasy leagues – after all, it is yards gained (passing, running, or receiving), touchdowns, and defensive performance that lead to NFL team success and determine fantasy success. A correlation was thus conducted using winning percentage and the number of NFL players starting in a high percentage of fantasy leagues for that particular week.

The final measure is the margin of victory in the game with the idea that closer, more competitive games might hold viewers longer and increase the rating.

Results

Ratings

Tables One (NBC) and Two (ESPN) provide the Nielsen ratings for each analyzed game.

The average rating for the NBC Sunday night games in 2009 was an 11.6 (SD=1.59). The highest rated game was the week two matchup between the New York Giants and the Dallas Cowboys, 15.1. The lowest rated game was the week seven contest between the Arizona Cardinals and the New York Giants, 9.1. The average rating for the ESPN Monday night games in 2009 was 9.0 (SD=1.83). The highest rated game was the week four contest between

Table 1
2009 Sunday Night NFL on NBC Television Ratings

Week	Game	Rating
1	Chicago at Green Bay	12.6
2	New York Giants at Dallas	15.1
3	Indianapolis at Arizona	10.7
4	San Diego at Pittsburgh	11.0
5	Indianapolis at Tennessee	9.7
6	Chicago at Atlanta	10.9
7	Arizona at New York Giants	9.1
9	Dallas at Philadelphia	13.1
10	New England at Indianapolis	13.7
11	Philadelphia at Chicago	10.6
12	Pittsburgh at Baltimore	11.5
13	Minnesota at Arizona	12.5
14	Philadelphia at New York Giants	12.7
15	Minnesota at Carolina	11.0
16	Dallas at Washington	10.9
17	Cincinnati at New York Jets	10.0
		11.6 avg (SD= 1.59)

Note: NBC did not televise a game on week eight due to the World Series

Source: Nielsen Media Research; <http://sportsmediawatch.blogspot.com>, January 9, 2010

Table 2
2009 Monday Night NFL on ESPN Television Ratings

Week	Game	Rating
1	Buffalo at New England	8.9
1	San Diego at Oakland	7.6
2	Indianapolis at Miami	9.4
3	Carolina at Dallas	9.9
4	Green Bay at Minnesota	13.2
5	New York Jets at Miami	8.4
6	San Diego at Denver	8.3
7	Philadelphia at Washington	8.1
8	Atlanta at New Orleans	7.7
9	Pittsburgh at Denver	9.9
10	Baltimore at Cleveland	6.5
11	Tennessee at Houston	7.7
12	New England at New Orleans	12.9
13	Baltimore at Green Bay	8.3
14	San Francisco at Arizona	8.3
15	New York Giants at Washington	7.3
16	Minnesota at Chicago	10.4
		9.0 avg. (SD= 1.83)

Note: ESPN televises two games on the opening Monday night of the season as per its broadcast rights contract with the NFL. There is no Monday night game in the final week of the NFL season.

Source: Nielsen Media Research; <http://sportsmediawatch.blogspot.com>, January 9, 2010

the Green Bay Packers and the Minnesota Vikings, 13.2. The lowest rated game was the week ten matchup between the Baltimore Ravens and the Cleveland Browns, 6.5.

Percentage of Starting Fantasy Players, and of Games Won

For the games on NBC there was an average of 8.25 (SD=2.14) NFL players starting in greater than 50 percent and an average of 3.25 (SD=2.28) players starting in greater than 90 percent of the fantasy leagues on CBS Sportsline for that particular week. Three games had eleven NFL players starting in greater than 50 percent of fantasy leagues: Green Bay Packers at Chicago Bears

in week one, Arizona Cardinals at New York Giants in week seven, and Dallas Cowboys at Philadelphia Eagles in week nine. The games in the last two weeks of the season between the Dallas Cowboys at the Washington Redskins and the Cincinnati Bengals at the New York Jets had only four players starting in over 50 percent of fantasy games for those weeks' games. The week ten game between the New England Patriots and the Indianapolis Colts had the most NFL players starting in over 90 percent of fantasy leagues with seven. Four games had only one player starting in over 90 percent of fantasy leagues: Pittsburgh Steelers at Baltimore Ravens in week twelve, Philadelphia Eagles at New York Giants in week fourteen, Dallas

Table 3*NFL on NBC Fantasy Players Starting, Win Percentage, & Margin of Victory*

Game	Fantasy Players over 50% start	Fantasy Players over 90% start	2009 win %	2008 win %	Margin of Victory
Chi/GB	11	5	.56	.47	6
NYG/Dal	7	5	1.00	.66	2
Indy/Ari	8	5	.75	.66	21
SD/Pitt	9	3	.50	.63	10
Tenn/Indy	7	4	.50	.78	22
Chi/Atl	8	4	.75	.63	7
Ari/NYG	11	2	.73	.66	7
Dal/Phil	11	4	.71	.56	4
NE/Indy	9	7	.88	.72	1
Phil/Chi	10	2	.50	.56	4
Pitt/Balt	7	1	.52	.72	3
Minn/Ari	9	4	.77	.59	13
Phi/NYG	9	1	.63	.66	7
Minn/Car	8	3	.62	.69	19
Dal/Wash	4	1	.46	.53	17
Cin/NYJ	4	1	.60	.41	37
Avg.	8.25	3.25	.66	.62	11.25
	(SD= 2.14)	(SD= 2.28)	(SD=.15)	(SD=.096)	(SD=9.7)

Note: The 2009 winning percentage is determined by the teams' records at the time of the game (i.e., in week three the Indianapolis Colts were 2-0 and the Arizona Cardinals were 1-1, providing a combined record of 3-1 and a winning percentage at the time of the game of .75). The 2009 season winning percentage for the Chicago Bears and Green Bay Packers is used for week one rather than the .000 winning percentage that those teams had before playing a single game of the 2009 season.

Cowboys at Washington Redskins in week sixteen, and Cincinnati Bengals at New York Jets in week seventeen (See Table Three).

For the games on ESPN there was an average of 6.65 (SD=2.32) NFL players starting in greater than 50 percent and an average of 2.7 (SD=1.76) players starting in greater than 90 percent of the fantasy leagues on CBS Sportsline for that particular week. Two games had ten NFL players starting in greater than 50 percent of fantasy leagues: Green Bay Packers at Minnesota Vikings in week four and New England Patriots at New Orleans Saints in week twelve. Three games had only three players starting in greater than 50 percent of fantasy

leagues: New York Jets at Miami Dolphins in week five, Baltimore Ravens at Cleveland Browns in week ten, and New York Giants at Washington Redskins in week fifteen. The week twelve game between the New England Patriots and the New Orleans Saints had the most players starting in over 90 percent of fantasy leagues with six. Three games on ESPN did not have any NFL players starting in over 90 percent of fantasy leagues: New York Jets at Miami Dolphins in week five, Pittsburgh Steelers at Denver Broncos in week nine, and New York Giants at Washington Redskins in week fifteen (See Table Four).

Table 4*NFL on ESPN Fantasy Players Starting, Win Percentage, & Margin of Victory*

Game	Fantasy Players over 50% start	Fantasy Players over 90% start	2009 win %	2008 win %	Margin of Victory
Buf/NE	6	4	.50	.56	1
SD/Oak	7	3	.56	.41	4
Indy/Miami	5	3	.50	.72	4
Car/Dal	7	2	.25	.66	14
GB/Minn	10	5	.83	.50	7
NYJ/Miami	3	0	.50	.63	4
SD/Den	9	1	.78	.50	11
Phil/Wash	8	4	.50	.53	10
Atl/NO	9	4	.83	.59	8
Pitt/Den	6	0	.79	.63	18
Balt/Cle	3	2	.31	.47	16
Tenn/Hou	5	2	.47	.66	3
NE/NO	10	6	.85	.59	21
Balt/GB	8	3	.59	.53	13
SF/Ari	6	4	.52	.50	15
NYG/Wash	3	0	.42	.63	33
Minn/Chi	8	3	.57	.59	6
Avg.	6.65	2.70	.5747	.5706	11.06
	(SD= 2.32)	(SD= 1.76)	(SD=.18)	(SD=.08)	(SD=8.1)

Note: The 2009 winning percentage is determined by the teams' records at the time of the game (i.e., in week three the Carolina Panthers were 0-2 and the Dallas Cowboys were 1-1, providing a combined record of 1-3 and a winning percentage at the time of the game of .25). The 2009 season winning percentage for the Buffalo Bills, New England Patriots, San Diego Chargers, and Oakland Raiders is used for week one rather than the .000 winning percentage that those teams had before playing a single game of the 2009 season.

Correlations

Research Question One

For the NBC sample there was a statistically significant correlation for games with NFL players starting in greater than 90 percent of fantasy leagues and the television rating for that particular week's game, $r = .50$, $p < .05$. There was not a statistically significant correlation for the games with NFL players starting in greater than 50 percent of fantasy leagues with the television rating for NBC games.

For the ESPN sample there was a statistically significant correlation for both games with NFL

players starting in greater than 50 percent of fantasy leagues with the television rating for that particular week's game, $r = .60$, $p < .05$, and games with NFL players starting in greater than 90 percent of fantasy leagues and the television rating for that particular week's game, $r = .50$, $p < .05$.

Research Question Two

The 2009 winning percentage is determined by the teams' combined records at the time of the game. On NBC, the game with the highest teams' combined winning percentage was the week two game between the New York Giants and the Dallas Cowboys in which both

teams had a record of 1-0. The game with the lowest teams' combined winning percentage was the week sixteen game between the Dallas Cowboys, with a record of 9-5, and the Washington Redskins, with a record of 4-10, combining for a record of 13-15 and a winning percentage of 46 percent.

In analyzing the relationship between winning percentage and the television rating over the entire season, for the first games of the season played by the teams on NBC (Green Bay Packers at Chicago Bears) and on ESPN (Buffalo Bills at New England Patriots and San Diego Chargers at Oakland Raiders), the 2009 winning percentages was substituted for the .000 winning percentage. For the NBC games the average winning percentage was 66 percent ($SD=.15$). The correlation between winning percentage and the television rating for the NBC sample of games was statistically significant $r = .60, p < .05$.

However, these results are skewed by the week two game between the Giants and the Cowboys when both teams had a perfect record. The rating of 15.1 and winning percentage of 1.0 are both more than two standard deviations from the mean for television ratings and winning percentage. When removing this game from the analysis, the correlation between teams' combined winning percentage and the television rating was no longer statistically significant. After eliminating the Giants at Cowboys game, the correlation between NFL players starting in greater than 90 percent of fantasy leagues and the television rating for the NBC games is also no longer statistically significant.

For ESPN, the game with the highest teams' combined winning percentage was the week twelve game between the New England Patriots, with a record of 7-3, and the New Orleans Saints, with a record of 10-0, for a combined winning percentage of 85 percent. The game with the lowest teams' combined winning

percentage was the week ten game between the 4-4 Baltimore Ravens and the 1-7 Cleveland Browns which had a combined winning percentage of 31 percent. For the ESPN games the average winning percentage was 57.47 percent ($SD=.18$). The correlation between winning percentage and the television rating for the ESPN sample of games was statistically significant, $r = .52, p < .05$.

Research Question Three

As previously noted that it can be assumed that teams with high winning percentages have many players that start in high percentages of fantasy leagues, correlations also were conducted to test the relationship between winning percentage and the number of NFL players starting in fantasy leagues for that particular week. Tests were conducted for games with NFL players starting in greater than 50 percent and 90 percent of fantasy leagues respectively. For the games on NBC there was a statistically significant correlation between winning percentage and games with NFL players starting in 90 percent of fantasy leagues, $r = .63, p < .01$. There was not a statistically significant correlation for games on NBC with NFL players starting in greater than 50 percent of fantasy leagues. For ESPN, there was not a statistically significant correlation for games on ESPN with NFL players starting in greater than 90 percent of fantasy leagues, but there was a statistically significant correlation between winning percentage and games with NFL players starting in 50 percent of fantasy leagues, $r = .70, p < .01$.

Research Question Four

In testing the 2008 teams' combined winning percentage, often used, as discussed above, as a factor by the league and networks in selecting prime-time matchups, with the television rating for the 2009 games there is not a statistically significant correlation for the games on NBC.

However, if removing the week seventeen game between the Cincinnati Bengals and the New York Jets where their combined winning percentage for 2008 was 41 percent, there is a statistically significant correlation, $r = .60$, $p < .05$. It is important to note that the Bengals at Jets game was one that NBC chose to flex into because of the game's playoff implications – if the Jets won, they would advance to the NFL playoffs. For ESPN, there was not a statistically significant correlation between the 2008 teams' combined winning percentage and the television rating for the 2009 games.

Research Question Five

Finally, in testing the margin of victory variable with the television rating, for the games on NBC there was a statistically significant negative correlation, $r = -.56$, $p < .05$, meaning that the closer the score of the game, the higher the rating. This result was fueled by the highest rated game between the Giants and the Cowboys having a margin of victory of two points, the second highest rated game on NBC between the New England Patriots and the Indianapolis Colts having a one point margin of victory, as well as the third lowest rated game between the Cincinnati Bengals and the New York Jets being a 37 point win for the Jets. For ESPN there was not a statistically significant negative correlation between the margin of victory and the television rating when using all games. Even when removing the game between the New York Giants at the Washington Redskins, a 33 point win by the Giants that was two standard deviations away from the margin of victory mean, 11.06 ($SD=8.1$), there is still not a statistically significant negative correlation.

Discussion

In continuing to focus on the question of audience motivations for mass media use as articulated by many scholars, as well as

responding to the need for more scholarly inquiry into the influence of fantasy sports as expressed by Baerg (2009), the purpose of this study is to examine whether fantasy football participation can serve as an additional motivating factor for fans to watch NFL games on television. The results presented here do provide some evidence that there is a relationship between NFL players starting in a high percentage of fantasy leagues for that particular week and the television rating for that particular game. In responding to the primary research question, games with more NFL players starting in a high percentage of fans' fantasy football leagues can lead to an increase in that game's rating (with variations by NBC or ESPN, and by the threshold of 90 percent or 50 percent).

Some explanation for the difference in results between the NBC and ESPN samples can be provided by examining the specific games. The NBC games only had statistically significant results for NFL players starting in over 90 percent of fantasy leagues when correlated with both rating, and winning percentage. The two games with the highest rating and winning percentage (New York Giants at Dallas Cowboys and New England Patriots at Indianapolis Colts) also had the most NFL players starting in over 90 percent of fantasy leagues. This was not the case when applying the measure of NFL players starting in over 50 percent of fantasy leagues. Of the three games on NBC with the highest number of NFL players starting in over 50 percent of fantasy leagues, Chicago Bears at Green Bay Packers, Arizona Cardinals at New York Giants, and Dallas Cowboys at Philadelphia Eagles, only the Dallas at Philadelphia game was among the top three rated, with the Arizona at New York game being the lowest rated game of the season on NBC. Of these three games, none are in the top five of highest winning percentage.

For the ESPN games there is more continuity between the measures of NFL players starting in both 90 percent and 50 percent of fantasy leagues when correlated with both rating, and winning percentage. The two games with the highest rating and winning percentage (Green Bay Packers at Minnesota Vikings and New England Patriots at New Orleans Saints) had the most NFL players starting in both 90 percent and 50 percent of fantasy leagues.

There are several factors that can contribute to the television rating of a sports event. It is certainly not being proffered here that the fantasy football is the only factor influencing the television rating. The evidence here shows that games between teams with higher winning percentages can lead to an increase in the television rating for both the NBC and ESPN sample. This relationship is not surprising as games between good teams could draw the casual fan and create the instrumental viewing component that is so important for increasing the television rating. It is also not surprising that there is a relationship between team winning percentage and the number of NFL players starting in a high percentage of fantasy leagues as the great players who often score or throw touchdowns that help their NFL teams win are the same players who help fantasy football teams win as well.

The 2008 combined teams' winning percentage and the rating for the game between those teams in 2009 was important to examine because the prior season's result is used as a critical factor in evaluating if the team will have any of its games played in prime-time. For NBC, once the week seventeen game between Cincinnati and the New York Jets was eliminated, a game that NBC flexed into because of its playoff implications, there was a statistically significant correlation between the 2008 combined teams' winning percentage and the rating for the game between those teams in 2009. ESPN was not as successful in predicting

which matchups would produce a higher rating based on the prior season's results as there was not a statistically significant correlation between the 2008 teams' combined winning percentage and the television rating for its 2009 televised games.

Margin of victory is the most difficult variable to predict prior to the game being played, but there was evidence from the NBC games that the closer the score of the game, the higher the game's rating. The margin of victory variable was not statistically significant for the games on ESPN. The margin of victory measure for NFL games might not be as important for some fans who are more concerned with the outcome of their fantasy football game. Fans might not care if the New Orleans Saints are beating the New England Patriots by 21 points as they continue to watch to see if Drew Brees, New Orleans Saints quarterback, throws another touchdown pass.

There were certain games where there was the perfect combination of teams with high winning percentages, many players starting in fantasy leagues, and a small margin of victory. For example, the game between the New England Patriots and the Indianapolis Colts on NBC featured seven players starting in greater than 90 percent of fantasy leagues (Colts: Peyton Manning, 97 percent; Reggie Wayne, 99 percent; Dallas Clark, 98 percent. Patriots: Tom Brady, 98 percent; Randy Moss, 100 percent; Wes Welker, 99 percent; Stephen Gotskowski, 97 percent), the teams had a combined winning percentage of 88 percent, and the game was decided by one point. The New England at Indianapolis game had a rating of 13.7, fifteen percent higher than the 11.6 average rating for the games on NBC.

There were other plausible, common-sense explanations that can be made for each rating beyond the influence of NFL fantasy players starting in fantasy leagues, teams' winning percentage, margin of victory, and outlier

games that were provided here. First, the 2009 NFL schedule was made before Brett Favre announced his return to football to play for the Minnesota Vikings. The first game that Favre played against his former team, the Green Bay Packers, was the highest rated game for ESPN. The highest rated game on NBC, the New York Giants at the Dallas Cowboys, featured the first regular season NFL game at the new Cowboys Stadium. The week seven NBC game between the Arizona Cardinals and the New York Giants that received only a 9.1 rating, although having eleven players starting in greater than 50 percent of fantasy leagues, was televised directly against the New York Yankees playing in game six of the American League Championship Series (ALCS). The game on Fox televising the Yankees winning the ALCS had more viewers than the football game, receiving a 9.3 rating. Finally, the week eight ESPN game between the Atlanta Falcons and the New Orleans Saints that had a rating of 7.7 was broadcast directly against game five of the World Series between the New York Yankees and the Philadelphia Phillies, which received a rating of 10.6.

The popularity of the NFL on television is undeniable. Super Bowl XLIV between the New Orleans Saints and the Indianapolis Colts was the most viewed program in the history of television with 106.5 million viewers (Nielsen Media Research; <http://sportsmediawatch.blogspot.com>, February 8, 2010). For the 2009 regular season, all of the NFL's television partners had increases in their ratings: CBS, 10.4 average, increase four percent; ESPN, 9.0 average, increase eighteen percent; Fox, 11.4 average, increase nine percent; NBC, 11.7 average, increase fifteen percent; NFL Network, 3.1 average, increase 35 percent (Nielsen Media Research; <http://sportsmediawatch.blogspot.com>, January 9, 2010). It is also worth noting that no games on NBC or ESPN were less than two standard deviations away from the ratings' mean for the games on their respective

networks. There were, however, three games higher than two standard deviations away from the ratings' mean: NBC's New York Giants at Dallas Cowboys game, and ESPN's Green Bay Packers at Minnesota Vikings game and New England Patriots at New Orleans Saints game. This shows the NFL television ratings to be consistently good, and when conditions present themselves very good.

Implications

With the results presented here providing some evidence that in certain circumstances fantasy football participation can be a variable that influences viewership of NFL games, there are some implications that need to be considered. First, the NFL should use the attraction of fantasy football and the appeal of certain players as another variable in putting together its television programming schedule of games. The development of the television programming schedule is the first part of putting together the entire game schedule. The development of the programming schedule is a challenge for the NFL because it has multiple broadcast partners who all desire the most attractive games. It should also be noted that the NFL has been very successful in its scheduling practices as in 2009 all of its broadcast partners had an increase in their television ratings. Still, it would be irresponsible of any sports league not to try to improve an important component of its overall business strategy, such as television ratings.

As noted, it is difficult to predict in April which will be the good teams and which will be the compelling matchups during the regular season. In fact, using the teams' records from the previous season was not a predictor of television ratings for the games on ESPN. There might, however, be more predictability as to which players will be on a high percentage of fantasy football teams. While some of the

these players will obviously be on the teams predicted to have winning seasons based on past seasons' performances (i.e., Peyton Manning and the Colts), other players might be on losing teams but could still make that team's games more attractive for fans because of their fantasy ownership. For example, Maurice Jones Drew, owned in a high percentage of fantasy leagues, might make the Jacksonville Jaguars a more attractive team to televise than even teams from bigger markets such as the Cleveland Browns or the Denver Broncos that do not have any players that are popular with fantasy football participants. This could especially be important for ESPN in its selection of games because it features a wider variety of teams in its games. In 2009 25 different teams appeared on ESPN games, as compared to NBC which only had 18 different NFL teams play in the games that it televised. So while it is certainly not being argued here that fantasy football is the dominant variable in audience viewership, it is being suggested that fantasy football should be another variable that is used by networks and the league in creating its programming schedule.

As an example of fantasy football not being the dominant variable, the week seven NBC game between the Giants and the Cardinals was the lowest rated game of the season for NBC because it was airing directly against a Yankees' playoff game. Therefore, another consideration for the NFL in creating its programming schedule should be to try to avoid putting teams from cities where there is the potential conflict with the Major League Baseball playoffs. Again, there is no way to predict this conflict will not occur with absolute certainty. However, in putting the Giants on prime-time television during the baseball playoffs, considering the Yankees have only missed the playoffs once since 1995, there is a greater chance of a conflict and thus lower ratings for the NFL game. There is some predictability

of Major League Baseball teams not being competitive and the NFL can avoid this conflict of competition within a city. For example, the Pittsburgh Pirates haven't had a winning record since 1992 and the Kansas City Royals have only had a winning record once since 1993. Scheduling the Pittsburgh Steelers or the Kansas City Chiefs would eliminate the conflict of competition from a playoff baseball game being televised with teams from the same city. The NFL could even eliminate any chance of a conflict during the baseball playoffs in the same market by scheduling NFL teams from cities in which there isn't a Major League Baseball team. Cities with currently successful NFL teams with popular fantasy players such as Indianapolis, New Orleans, and Tennessee could be used in prime-time games during the weeks of the baseball playoffs.

The broadcasters of NFL games could also cater their telecasts more to the fantasy football audience. CBS updates players' statistics of those involved in the game that is being televised after each play on the top of the screen. At the bottom of the screen CBS also has a crawl of scores and players' statistics from the other games being played around the league. The NFL's other broadcast partners, however, update the players' statistics with much less frequency. Another possible broadcast initiative would be to have fantasy analysts as part of the networks' pregame shows offering tips on which NFL players fantasy participants should and should not start in their fantasy games.

For a league that earns \$3.75 billion in broadcast revenue per year (the current broadcast contracts expire after the 2013 season) the more people watching and the more motivations that they have to watch the NFL will lead to further economic growth for the league. So while prior to the increase in fantasy football participation researchers identified fans were most motivated by the unknown outcome of the game and to watch their favorite teams

win, the motivation to watch the NFL players that help their fantasy team win could now serve as an additional motivation, or even for some the primary motivation, that can create an instrumental media use to watch NFL games. This study only samples one season and 33 games so further examination of any fantasy football impact on television ratings needs to be conducted before larger conclusions can be drawn. This study can also be easily replicated and trends of the impact of fantasy football participation better learned. However, a fan of the Green Bay Packers may not have an intrinsic interest in watching a game between the Indianapolis Colts and the Miami Dolphins as the outcome of the game has no impact on the Packers' standings. That fan, however, may have Peyton Manning as the starting quarterback in his or her fantasy lineup (or he is starting in the opponent's lineup) and cares if he throws a touchdown pass and the amount of passing yardage he compiles.

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RESEARCH THAT MATTERS!

THE RELATIONSHIP OF FANTASY FOOTBALL PARTICIPATION WITH NFL TELEVISION RATINGS

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Research Problem

The purpose of this study is to examine whether fantasy football participation can serve as an additional motivating factor for fans to watch National Football League (NFL) games on television. This research uses the prime-time games on NBC and ESPN from the 2009 NFL season and reveals some evidence that there is a relationship between NFL players starting in a high percentage of fantasy leagues for that particular week and the television rating for that particular game. Games with more NFL players starting in a high percentage of fans' fantasy football leagues do have a positive relationship with that game's television rating in certain circumstances. This study attempts to address two concerns of scholars: the continued study of audience motivations for mass media use and the need for a more extensive examination into the influence of fantasy sports. From a practitioner perspective, this research is useful to networks and leagues in better understanding the influence of fantasy sports as well as assisting in creating the game programming schedule.

Issue

An estimated 30 million people participate in fantasy football leagues and according to Nielsen Media Research more than 1.2 billion minutes were spent on fantasy websites in 2008, yet little academic research has been conducted on this topic. The issue of audience motivations for media use has long been discussed in the study of mass communication. In the specific context of motivation of media use for sports content, researchers have identified the unknown outcome of the game and the desire to see favorite teams and players win and see teams and players they do not like lose as motivating factors that most influence the behavior of watching sports. Researchers, however, were only evaluating fans' motivations to watch these games based on their results factoring into the actual, real-life sports league standings. The question that this study examines is: couldn't these same motivations for watching teams and players win or lose extend to the unknown outcome of fans' games in their fantasy football leagues? Could the unknown outcome of fans' fantasy team's games influence the behavior of viewing NFL games on television?

Fans now might be motivated to watch NFL games to root for the players on their fantasy team, or root against an NFL player on a fantasy team that they are competing against that week or root against an NFL player who is on a fantasy team that is in the same division in their fantasy league. It is still the unknown outcome of the game, the concern for seeing how players perform, and the fans' desire to win that serve as the motivating factors in the media use behavior of the audience. With the popularity of fantasy football, it is valuable to provide some measure of this

relatively new, but increasingly important phenomenon with a traditional measure of sports popularity and a major component of the sports business model, television ratings.

To address the influence of fantasy football participation on television ratings, correlations were conducted between the number of NFL players starting in fantasy football leagues for that particular week and the television rating for that particular game. The NFL games broadcast on NBC's Sunday Night Football and ESPN's Monday Night Football during the 2009 regular season are chosen because they are played at a time when there is no competition from other NFL games and these games are televised to the entire country. For each game on NBC and ESPN the percentage of fantasy leagues that the fantasy players were starting in that week on CBS Sportsline was gathered. The number of NFL players starting in greater than 50 percent and 90 percent of the fantasy leagues on CBS Sportsline for that particular week were then correlated with the game's television rating. Because so many factors influence a television rating, the variables of teams' combined winning percentage and margin of victory in the game are also analyzed in comparison to the television rating for the NFL games on NBC and ESPN.

Summary

For the NBC sample there was a relationship between games with NFL players starting in greater than 90 percent of fantasy leagues and the television rating for that particular week's game. There was, however, not a relationship between the games with NFL players starting in greater than 50 percent of fantasy leagues with the television rating for NBC games. For the ESPN sample there was a relationship between both games with NFL players starting in greater than 50 percent and 90 percent of fantasy leagues with the television rating for that particular week's game.

There was a relationship between teams' combined winning percentage and television ratings for both the NBC and ESPN samples of games. The results for NBC are, however, skewed because the highest rated game of the season, New York Giants at Dallas Cowboys, 15.1, featured both teams with a perfect record in week two. When removing this game from the sample for the NBC games, there was no longer a relationship between teams' combined winning percentage and the television ratings.

It is logical to assume that NFL teams with a high winning percentage would be the teams with many players that are starting in a high percentage of fantasy leagues – after all, it is yards gained (passing, running, or receiving), touchdowns, and defensive performance that lead to NFL team success and determine fantasy success. A correlation was thus conducted using teams' winning percentage and the number of NFL players starting in a high percentage of fantasy leagues for that particular week. For the games on NBC there was a relationship between winning percentage and games with NFL players starting in greater than 90 percent of fantasy leagues, but not a relationship between games on NBC with NFL players starting in greater than 50 percent of fantasy leagues. For ESPN, there was not a relationship between games on ESPN with NFL players starting in greater than 90 percent of fantasy leagues, but there was a relationship between winning percentage and games with NFL players starting in greater than 50 percent of fantasy leagues.

In testing the 2008 teams' combined winning percentage, often used as a factor by the league and networks in selecting prime-time matchups, with the television rating for the 2009 games there was not a relationship for games on NBC. However, if removing the week seventeen game between the Cincinnati Bengals and the New York Jets where their combined winning percentage for 2008 was 41 percent, there was a relationship. It is important to note that the Bengals at Jets game was one that NBC chose to flex into because of the game's playoff implications – if the Jets won, they would advance to the NFL playoffs. For ESPN, there was not a relationship between the 2008 teams' combined winning percentage and the television rating for the 2009 games.

Finally, in testing the margin of victory variable with the television rating, for the games on NBC there was a negative correlation, meaning that the closer the score of the game, the higher the rating. This result was fueled by the highest rated game between the Giants and the Cowboys having a margin of victory of two points, the second highest rated game on NBC between the New England Patriots and the Indianapolis Colts having a one point margin of victory, as well as the third lowest rated game between the Cincinnati Bengals and the New York Jets being a 37 point win for the Jets. For ESPN there was not a relationship between the margin of victory and the television rating when using all games.

Analysis

The results provide some evidence that there is a relationship between NFL players starting in a high percentage of fantasy leagues for that particular week and the television rating for that particular game. Games with more NFL players starting in a high percentage of fans' fantasy football leagues do have a positive relationship with that game's rating (with variations by NBC or ESPN, and by the threshold of greater than 90 percent or 50 percent).

Some explanation for the difference in results between the NBC and ESPN samples can be provided by examining the specific games. The NBC games only had a relationship for NFL players starting in greater than 90 percent of fantasy leagues when correlated with both rating, and winning percentage. The two games with the highest rating and winning percentage (New York Giants at Dallas Cowboys and New England Patriots at Indianapolis Colts) had the most NFL players starting in greater than 90 of fantasy leagues. This was not the case when applying the measure of NFL players starting in greater than 50 percent of fantasy leagues. Of the three games on NBC with the highest number of NFL players starting in greater than 50 percent of fantasy leagues, only one game was among the top three rated.

For the ESPN games there was more consistency with a statistically significant relationship between the measures of NFL players starting in both of the greater than 90 percent and 50 percent thresholds of fantasy leagues when correlated with both rating, and winning percentage. The two games with the highest rating and winning percentage (Green Bay Packers at Minnesota Vikings and New England Patriots at New Orleans Saints) had the most NFL players starting in both greater than 90 percent and 50 percent of fantasy leagues.

Several factors contribute to the television rating of a sports event. It is certainly not being proffered here that the fantasy football is the only factor influencing the television rating. The evidence here shows that games between teams with higher winning percentages do have a positive relationship with the television rating for both the NBC and ESPN sample. This relationship is not surprising as games between good teams draw the casual fan that is so important for increasing the television rating. It is also not surprising that there is a relationship between team winning percentage and the number of NFL players starting in a high percentage of fantasy leagues as the great players who often score or throw touchdowns that help their NFL teams win are the same players who help fantasy football teams win as well.

Margin of victory is the most difficult variable to predict prior to the game being played, but there was evidence from the NBC games that the closer the score of the game, the higher the game's rating. There was not, however, a relationship between the margin of victory variable and the television rating for the games on ESPN. The margin of victory measure for NFL games might not be as important for some fans who are more concerned with the outcome of their fantasy football game. For example, fans might not care if the New Orleans Saints are beating the New England Patriots by 21 points as they continue to watch to see if Drew Brees, New Orleans Saints quarterback, throws another touchdown pass.

Certain games had the perfect combination of teams with high winning percentages, many players starting in fantasy leagues, and a small margin of victory. For example, the game between the New England Patriots and the Indianapolis Colts on NBC featured seven players starting in greater than 90 percent of fantasy leagues (Colts: Peyton Manning, 97 percent; Reggie Wayne, 99 percent; Dallas Clark, 98 percent. Patriots: Tom Brady, 98 percent; Randy Moss, 100 percent; Wes Welker, 99 percent; Stephen Gotskowski, 97 percent), the teams had a combined winning percentage of 88 percent, and the game was decided by one point. The New England at Indianapolis game had a rating of 13.7, fifteen percent higher than the 11.6 average rating for the games on NBC.

Discussion

For a league that earns \$3.75 billion in broadcast revenue per year (the current broadcast contracts expire after the 2013 season) the more people watching and the more motivations that they have to watch the NFL will lead to further economic growth for the league. So while prior to the increase in fantasy football participation researchers identified fans were most motivated by the unknown outcome of the game and to watch their favorite teams win, the motivation to watch the NFL players that help their fantasy team win could now serve as an additional motivation and create an instrumental media use to watch NFL games. This study only samples one season and 33 games so further examination of any fantasy football impact on television ratings needs to be conducted before larger conclusions can be drawn. However, a fan of the Green Bay Packers may not have an intrinsic interest in watching a game between the Indianapolis Colts and the Miami Dolphins as the outcome of the game has no impact on the Packers' standings. That fan, however, may have Peyton Manning as the starting quarterback in his or her fantasy lineup (or Manning is starting in the opponent's lineup) and cares if Manning throws a touchdown pass and the amount of passing yardage he compiles.