

## Examination of Bias in ESPN's News Reporting 2010-2014

**Abstract**

This paper studies the effect geography, market size, and popularity have on the coverage ESPN awards teams following their appearance in 52 Monday Night football games between 2010 and 2014. I show that, contrary to popular belief, these factors play a very limited role in determining coverage share received by winning teams in written "Game Recaps" while having no measureable effect on attention paid to losing teams. Even though regional and market based biases are not conclusively present in these written reports, the possibility of slant in other ESPN offerings cannot be ruled out.

**Introduction**

Since 1979, ESPN has existed as the premier cable and satellite television destination for sports related programming. Its offerings encompass a wide range of areas including live game broadcasts, sporting news and talk shows, documentary films, and other original programming. The self-proclaimed "Worldwide Leader in Sports" reaches 97,736,000 households in the United States (85.58% of American households with at least one television)<sup>1</sup>, and yet, despite this near total saturation of the American market, is frequently criticized for slanting its coverage to favor certain regions over others. A prime example of this common perception is the so-called "East Coast Bias", or idea that the North American sports media gives more extensive coverage and attention to teams and athletes on the east coast than their counterparts on the west coast.<sup>2</sup>

In 2009, Heath Bell, then a pitcher for the San Diego Padres, echoed the frustrations of fans from supposedly underserved geographies when he said, "I truly believe ESPN only cares about promoting the [Boston] Red Sox and [New York] Yankees and Mets – and nobody else."<sup>3</sup> A lengthy article in the October 2014 issue of *Rolling Stone* suggested the possibility that the network was trying to influence the outcomes of the inaugural College Football Playoff with the content of its coverage. Writes author Jordan Burchette, "It's been painfully perplexing to witness ESPN use its outsize influence to prop up a Southeastern Conference that, for the first time in a decade, is arguably in a state of decline."<sup>4</sup> That the SEC gains more broadcast time than the other power college football conferences in different regions is an example of the network placing a concerted emphasis on serving the east coast. Such a bias is particularly important to sports fans because of a lack of viable alternative networks that provide programming at a similar level. Thought to be a potential challenger at the time of the project's announcement in December 2009, NBC Sports Network has suffered a myriad of setbacks and challenges that have prevented the network from becoming a legitimate alternative to the Worldwide Leader, leaving sports fans with one destination to get the coverage they desire.<sup>5</sup> Even if an alternative station were to succeed in the sporting news reporting sector, ESPN's rights agreements with

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<sup>1</sup> Robert Seidman, "Cable Network Coverage Estimates as of August 2013," TVbytheNumbers 23 August 2013, Zap 2 It, Web, 17 December 2014.

<sup>2</sup> "East Coast Bias," Wikimedia, 16 October 2014, Wikimedia Foundation, Web, 19 October 2014.

<sup>3</sup> Michael Hiestand, "Does the 'N' in ESPN Stand for Northeast?," USA Today 20 April 2009, Web, 19 December 2014.

<sup>4</sup> Jordan Burchette, "The Worldwide Cheerleader: ESPN and the College Football Playoff," *Rolling Stone*, 28 October 2014, Web, 17 December 2014.

<sup>5</sup> Ben Koo, "Looking Back at NBC Sports Network's Lack of Growth," *Awful Announcing*, 27 February, 2013, Bloguin, Web, 19 December 2014.

major professional leagues and college conferences are such that it would take a very long time for this hopeful competitor to amass the same offerings so as to become a true challenger in the space.

There are several possible reasons why an east-favoring geographic bias might exist at the network: the stretch from Boston to Washington D.C. is the most densely populated region of the United States, games played in prime time on the west coast are televised after most viewers (and reporters) from the east are asleep, and reporters in media hub that is New York City have an easier time reporting on action that occurs in close proximity to them.<sup>6</sup> The central motivation, however, behind any bias at ESPN appears to be financial. Len DeLuca, ESPN's Senior Vice President for Programming and Acquisitions, is quoted as saying, "It is long proven in the NBA, NFL, and MLB that spreading the wealth to 30 or 32 teams is a prescription for deflated ratings."<sup>7</sup> The implication is that the station does not see itself as having the social duty to serve the diverse interests of all its customers but rather strives to maximize revenue by tailoring its programming in a way that will motivate the most people to tune in.

Examining ESPN, geographic biases are fairly immediately evident in the network's analysis. On [espn.go.com](http://espn.go.com) there are special tabs under the heading "ESPN Local" that specifically serve the Boston, New York, Los Angeles, Chicago, and Dallas markets, indicating that these consumer bases are a higher priority to the network than other geographies. There is further unmasked preference given to successful players and teams because of the fact that programming centered on playoff races and championships is more lucrative and relevant than attention paid to lesser teams. This research paper is focused on the channel's news coverage and on the question of whether a viewer can expect fair coverage of an event when ESPN purports to report it as news. Fair coverage does not require an equitable division of coverage between all teams. Rather, what I mean by the term is coverage proportional to the relevance of a subject to a particular event. In the context of the Monday Night Football game write ups I examined, fair coverage would allow for more attention paid to the winning team than the losing team because of how the performance of the former is more noteworthy than the lack of success by the latter in the context of this isolated event. Further examination will be devoted to determining whether deviations from this coverage model are attributable to geography and whether certain markets are given undue preference over others.

The implications of an answer to this question go beyond whether or not fans from the Midwest and West Coast are justified in griping that their favorite teams do not get the same coverage from ESPN as those from the East. While the demographics of the segment of the overall population that watches and cares about sports are different in some ways from the overall news watching audience, geographic location is not one of them. If profit motives lead ESPN to slant content in a way that favors stories that are relevant to viewers from a particular region, this behavior could be present at other news networks that face the same incentives. In their 2007 paper "News Droughts, News Floods, and U.S. Disaster Relief", Thomas Eisensee and David Stromberg demonstrated that natural disasters that get covered in the media receive

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<sup>6</sup> John Buccigross, "Time to Give the West Its Due," ESPN 09 February 2010, ESPN Internet Ventures, Web, 19 October 2014.

<sup>7</sup> "East Coast Bias."

substantially more aid than those that do not receive coverage.<sup>8</sup> Thus, if certain areas of the US are underreported on by the national news media they would receive less aid in the event of such an emergency. Additional impacts of regionally biased coverage could follow from reporting of political and social issues as seen in Stromberg's other works which demonstrated that areas with higher radio listenership received more New Deal spending during the 1930's.<sup>9</sup>

In order to answer the research question, this paper examines the coverage of Monday Night Football games between 2010 and 2014. ESPN has been broadcasting these games since 2006 and, following each contest's conclusion, publishes a written "Game Recap" as a factual summary of the action. In order to determine the existence of and motivation for bias at the network, first I compared the Nielsen ratings of these games with the geographic location of the teams involved in order to determine if popularity is determined by geography. Second, I compared the share of coverage each team received in the ensuing "Game Recap" with their geographic location to determine if the network exhibits a geographic reporting bias. Ultimately, I determine that teams from the Midwest generate the highest game ratings and that teams that have larger local media markets attract higher Nielsen scores. Contrary to the expectations of the network's critics, ESPN did not skew its coverage to the more popular side even when there was an identifiable determinant of increased ratings meaning that higher ratings associated with the participation of teams from different markets or regions did not have a large bearing on the percentage of the article dedicated to one side or the other. The only consistent differentiator of coverage was whether or not a team won or lost. Thus, the implication of this study is that the success of a team determines whether it is covered more and that claims of bias toward the East Coast or major markets irrespective of location are unsubstantiated by the reality of the network's news coverage.

There have been a number of prior studies that examine geographically motivated bias in the national news. In 1985, Charles Whitney, Marilyn Fritzler, Steve Jones, Sharon Mazzarella, and Lana Rakow published a paper titled "Geographic and Source Biases in Network Television News 1982 – 1984" which examined national newscasts from the three years specified in the title.<sup>10</sup> Their process involved compiling a composite week for each month of the nightly newscasts at ABD, CBS, and NBC. These representative random samples were then analyzed on the basis of story location in the newscast, duration of the report, topical content, geographic focus, and source. The study demonstrated the existence of a proximity bias, with states such as New York, Illinois, California, and Texas that contain major media centers receiving greater coverage than would have been expected given their populations. The researchers also observed an eclipse effect, the tendency of one state or area within a geographic region to dominate coverage of that area. In 2008, one of the contributors to the Whitney paper, Steve Jones, published a follow up study titled "Television News: Geographic and Source Biases, 1982 – 2004".<sup>11</sup> Examining data from the same sources in the same manner, Jones observed similar

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<sup>8</sup> Thomas Eisensee and David Stromberg, "News Droughts, News Floods, and US Disaster Relief," *Quarterly Journal of Economics* 122.2 (2007): 693-728. Web.

<sup>9</sup> David Stromberg, "Radio's Impact on Public Spending," *The Quarterly Journal of Economics* 119.1 (2004): 189-221. Web.

<sup>10</sup> Charles D. Whitney, et al, "Geographic and Source Biases in Network Television News 1982-1984," *Journal of Broadcast and Electronic Media* 33.2 (1989): 159-174. Web.

<sup>11</sup> Steven Jones, "Television News: Geographic and Source Biases, 1982-2004." *International Journal of Communication* 2 (2008): 223-252. Web.

results despite great advancements in newsgathering technologies. This indicates that proximity bias in the news is not simply born out of lack of access on the part of reporters but is rather determined by other factors.

One study that has been done specifically on ESPN was Patrick Burns' Bristolmetrics feature for Deadspin.<sup>12</sup> Burns spent 2012 watching every 11pm edition of the network's flagship news program, *SportsCenter*, charting the mentions of different teams, players, and topics during each telecast. Among other findings, he came to some conclusions on what factors contribute to a team being mentioned on the show. For teams in the NFL, MLB, NBA, and NHL, coverage increased significantly with both winning percentage and franchise valuation. These trends follow logically from network executives' claims that they aim to cover the most relevant teams and story lines. Burns did not examine the effect geographic location or local market size had on this coverage, so I set out to determine whether or not the same geographic biases that were discovered in the Whitney and Jones papers are reflected in sports media.

## Data

My observation set is comprised of 52 Monday Night Football games that were played between 2010 and 2014. This does not encompass the entire slate of Monday night games during that period as there were a handful of occasions when my sources did not report Nielsen ratings for the games. Additionally, I only tracked games with 8:30pm ET start times in order to control for any effect broadcast time would have on audience size. This ruled out observations taken from the first week of each NFL season when two games are played on Monday night, one starting at approximately 7pm ET while the other kicks off at approximately 10:20pm ET.

In order to answer my research question, I needed to collect data on four things: ratings of each Monday Night Football game which could be used as a proxy for the popularity of a given contest, the size of the teams' local markets, the geographic locations of the teams, and the share of coverage in ESPN's "Game Recaps" each team received. For game ratings I used the Nielsen Adult 18-49 Rating which was available in the weekly reports of TV By the Numbers, a site dedicated to tracking and ranking the success of American TV shows.<sup>13</sup> For the size of the teams' local markets I used Nielsen's designated market area information.<sup>14</sup> Data for the latter two statistics, geographic location and coverage share, were not precompiled in an easily accessible source, so I developed methods, outlined below, for gathering this information. Table 5, located in the appendix, holds the data for each market and its share of the total US television viewership.

In order to determine a numerical value for a team's geographic location, I developed a statistic called the "Geographic Index". From the US Census Bureau's 9 regions, I identified 5 longitudinal zones: the East Coast (comprised of the Census Bureau's New England, Middle Atlantic, and South Atlantic), the East Central Midwest (comprised of the East North Central

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<sup>12</sup> Patrick Burns, "What I Learned From a Year of Watching SportsCenter," Deadspin, 26 July 2013, Web, 17 December 2014

<sup>13</sup> "Search Results for 'monday+night+football+ratings'" TVbytheNumbers, Zap 2 It, Web. 19 December 2014.

<sup>14</sup> Nielsen, "Local Television Market Universe Estimates," [www.tvb.org](http://www.tvb.org), 27 September 2014, Web, 19 December 2014.

Midwest and the East South Central Midwest), the West Central Midwest (comprised of the West North Central Midwest and the West South Central Midwest), the Mountain West, and the Pacific West. Teams located in the east coast zone received a Geographic Index score of 1, teams located in the east central midwest zone received a GI score of 2, and so on through teams in the pacific west receiving a GI score of 5. Figure 1 depicts the Census regions and the locations of all 32 NFL teams.

The average GI of the 32 NFL teams is 2.28, or approximately the same longitudinal range as Indianapolis or Nashville. If all teams were evenly distributed between my five regions, the average score would be 3, which would put the average team further west in approximately the same longitudinal range as Dallas, Kansas City, and Minneapolis.

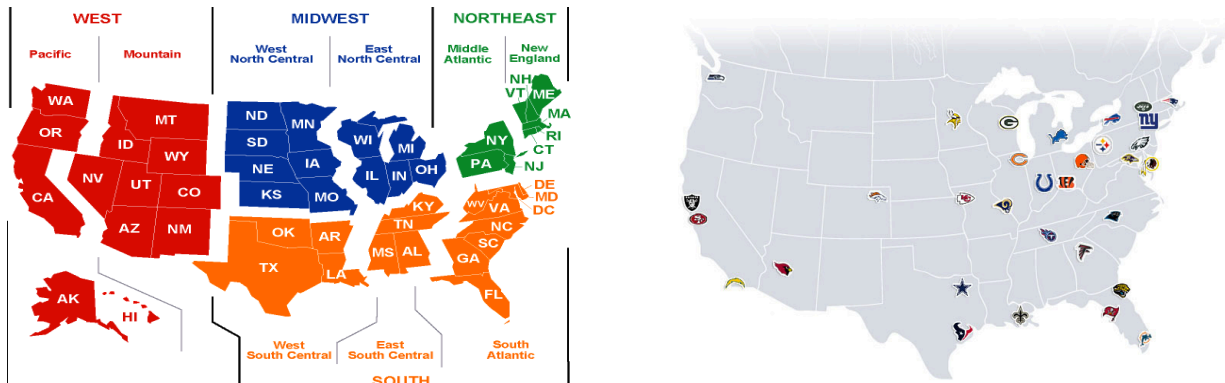


Figure 1: US Census Regions and NFL Team Locations

I used the method of text mining in order to determine the coverage share the competing teams received in ESPN’s follow up “Game Recap”. This process involved going through each game’s article, counting the total mentions of one team and its players and dividing that figure by the total mentions of teams and players in the article. As I went about it, the simple appearance of a team’s name did not necessarily constitute a mention. For example, I did not count a mention when the team’s name was used to describe an area of the field as in the phrase “the Patriot end zone”. I also only counted one mention when the team name appeared in the possessive form before a player name as in the phrase “the Patriots’ quarterback Tom Brady”. The average coverage share for a team that won the game in question is 0.564, meaning that the winning team received 56.4% of the article’s attention compared to 43.6% for the losing team. The standard deviation of the coverage share is 11% across all article-team pairs meaning that there is significant variation from article to article in terms of how much winners and losers are covered. This rules out the possibility that the writers of these recaps follow a set formula that dictates how much space must be devoted to each team and opens up the possibility that bias influences coverage. Figure 2 provides a sample section from one article and a view into what this process of text mining looked like.

The **Jets** (1-2) had one last opportunity to tie, getting into Bears territory on **Geno Smith's** 51-yard pass to **Greg Salas**. But **Jeremy Kerley** was out of bounds in the back of the end zone when he made a leaping grab of **Smith's** desperation fourth-down heave from the Bears 9.

**Cutler** took a knee three times to seal the victory for the **Bears** (2-1).

"We just have to ride this momentum," **Cutler** said.

**Smith** was 26 of 43 for 316 yards and a touchdown with two interceptions -- and nearly had a few others. **Kerley** finished with seven catches for 81 yards, and almost came up with a diving grab off a tipped pass in the end zone on the final drive.

"There were some plays you wish you could have back," **Jets coach Rex Ryan** said.

The **Jets** lost wide receiver **Eric Decker** in the first half to a hamstring injury; he was questionable for the game with tightness in the hamstring. **Decker** said he pulled himself out when he couldn't get it loosened up. Defensive lineman **Muhammad Wilkerson** also left with an injured right knee, but **Ryan** didn't think it was serious.

The **Bears** went up 14-0 just over five minutes into the game.

**Figure 2: Text Mining (phrases highlighted in green contributed points toward New York's coverage while phrases highlighted in orange contributed points toward Chicago's coverage). From this sample, I would calculate a Jets Coverage Share of 13/17, or 76.5%.**

In assessing the strengths and weaknesses of my data, the ratings information and Geographic Index appear to be pretty strong. The fact that I was only able to gather Nielsen's ratings for adults age 18 to 49 is somewhat troubling at first glance based off the fact that, as of 2013, 39% of the NFL's adult fan base was aged 50 or older.<sup>15</sup> This is not an insignificant percentage, however these older fans are unlikely to be located in significantly different geographic locations than their younger peers who make up the majority of the viewership. As a result, these ratings provide a relative measure of the popularity of each game, which can still be compared against other observations in the sample. Formulating my Geographic Index based on US Census regions ended up providing much stronger data than my original method that used time zones would have because of the more precise distinctions made between regions on the eastern half of the country. In particular, the separation of Ohio, Tennessee, Indiana, and Michigan from the easternmost zone was important as these states are not generally considered to be in the east in the same way that New York or Massachusetts are.

The weak aspects of my data lie primarily in the way I measured coverage share and the sample of teams observed. In looking at "Game Recaps", I looked at only a small portion of ESPN's news reporting. More extensive research into news coverage would entail examining the broadcasts of the network's radio affiliates, the in game broadcast content, as well as *SportsCenter* highlights and topics. Limited time and resources forced me to focus on only the primary written account of the game. Additionally, there is the potential for ESPN, as the holder of the broadcast rights for Monday Night Football games, to demonstrate bias towards certain markets in its selection of teams for these games. There does not appear to be any geographically motivated bias in the selection of teams, however, as the average GI for teams competing in

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Danielle Eby, "2013 Sports Fan Demographics," Opendorse, 27 January 2014. Web. 19 December 2014.

these games was 2.279 – essentially indistinguishable from the league average of 2.28. In one sense, the network's role in selecting teams actually strengthens the data in that it helps control for the quality of teams. ESPN has an incentive to broadcast the most compelling matchups and as a result tries to select the teams that will be most successful and relevant at the time of their nationally televised Monday night appearance. Of course, sometimes this does not work out as when teams fail to live up to expectations, but in general the practice leads to a data set in which teams are of a similar standard. The average winning percentage at the time of the contest of all teams involved in these games, calculated taking the Monday Night Football result into consideration, was 0.535, slightly higher than the league-wide average of 0.500, which translates into 8.6 wins over the course of a 16 game season. Last year, the 9-7 San Diego Chargers made the playoffs as a wild card team while five 8-8 teams missed out on the post season. Broadcasting a sample with this average winning percentage indicates that the network is successful in getting teams with an above average relevance to the playoff picture into these games. Lastly, I was unable to control for the effect of external story lines on the coverage of certain teams and players. An example of this is future Hall of Fame quarterback Brett Favre's last game when, despite his Vikings team losing, 60.3% of the article was devoted to covering Minnesota. Such noteworthy storylines were relatively few and far between, however, and likely only contributed to the standard deviation rather than significantly skewing the data.

## Methods

The first step I took to answering my research question of whether or not there is a recognizable geography or market based bias in ESPN's news reporting was to determine whether or not either of these factors contribute to a popularity bias. Such a phenomenon would be evidenced by a statistically significant increase in game Nielsen ratings when teams with favorable geographic or large market characteristics present. In order to perform this analysis, I looked at the Nielsen ratings of the games in the data set and fit a polynomial regression to the relationship between this statistic and average Geographic Index of the competing teams before calculating the correlation coefficient for Nielsen Rating and the combined market size of the two teams. Figuring out whether or not geography or market size are determinants of increased ratings and thus an increased television audience is important because the answer will inform the analysis of any bias discovered in ESPN's coverage. For example, if games garner fewer viewers as the teams that are featured move further west and ESPN in turn gives less coverage to these teams, it would be reasonable to deduce that this slant is in response to popular preferences. If, however, there is no geographic popularity bias but ESPN nonetheless gives a greater share of coverage to teams from the east, the perceived slant would either be random or motivated by something different, such as proximity bias as discussed in the Whitney and Jones papers.

In determining whether or not there is any bias in ESPN's written news coverage, I first looked at the overall data set before breaking the observations into subgroups that first controlled for geography and second for market size. Here it is important to note that when I looked at coverage share, I separated the observations into two categories: winning and losing teams. This is important because it controls for one of the key determinants of coverage share: the game's outcome. Looking at the overall data set, I first calculated the correlation between Geographic Index and Coverage Share for both winning and losing teams. Second, I calculated the correlation between Market Size and Coverage Share. When neither of these big picture approaches revealed consistently strong correlations, I broke the observations into further

subcategories in order to control for the factors I deemed the most relevant, geographic location and market size.

In order to control for geography, I filtered the data first for teams that won from each region and then for teams that lost. Finding the mean Nielsen Ratings and Coverage Shares for the winners and losers by region allowed me to see trends in these statistics as teams move further west. Additionally, breaking the data into subgroups for regional winners and losers allowed me to calculate the correlation between Coverage Share and Market Size with the advantage over the overall method of having controlled for longitudinal region. As will be depicted in my results section, neither fluctuations in Nielsen Ratings nor Coverage Shares followed any discernible pattern as one moves west from region to region. Additionally, correlations within the subgroups did not demonstrate any consistent bias in news coverage to large markets over small or vice versa.

In order to add an additional control for market size, I classified teams as either being from “Major Markets” or non- “Major Markets”. This is in response to the possibility that ESPN’s coverage does not fluctuate one for one with market size and that the biggest markets receive a greater bump in coverage than teams from locations with slightly above average audiences. Major Market is a term I used to identify the top five NFL markets by audience size. These are New York, Chicago, Philadelphia, and San Francisco-Oakland-San Jose. Due to the fact that New York and San Francisco-Oakland-San Jose each feature two teams, there is a substantial number of observations that falls into either the Major Market Winners subset or the Major Market Losers subset. Having separated the observations into these four subgroups (MM Winners, MM Losers, Non-MM Winners, Non-MM Losers) using the Major Market dummy variable, I calculated the correlation between Geographic Index and Coverage Share for each group.

In a final look at a big picture encompassing all the factors that could contribute to fluctuations in a team’s coverage share, I ran a multiple regression analysis of coverage share for winners and losers respectively on Geographic Index, Market Area, Nielsen Rating, the major market dummy indicator, and team won-lost record. This took the form of  $\text{Coverage Share} = \beta_0 + \beta_1(\text{Geographic Index}) + \beta_2(\text{Market Area}) + \beta_3(\text{Nielsen}) + \beta_4(\text{Major Market}) + \beta_5(\text{Won-Lost Record})$ . This summary examination would result in the conclusion that these factors are determinants of bias in the event that a high  $R^2$  figure and statistically significant coefficients were observed. I define a “high”  $R^2$  as being greater than 0.5, which would indicate that the majority of the variance in coverage share would be attributable to the factors listed. I performed statistical significance tests at the 90% confidence level. In the absence of this evidence following my calculation, a sufficiently high F ratio figure allowed me to conclude that, at least for winning teams, some of these factors have nonzero coefficients and impact coverage shares.

This study’s greatest assumption lies in the determination of what constitutes bias as well as what proof is necessary to identify its presence in the news source. As previously noted, equal coverage is not expected in these articles and more attention paid to the winning side should not come as a surprise as this practice would fall in line with ESPN’s preference for reporting the most relevant news. My aim is to account for bias that comes in addition to this outcome based slant, or, in other words, to determine why some winning (or losing) teams are covered more or less than the average 56.4% (or 43.6%) for teams with this outcome. Due to the relatively high



standard deviation of these coverage shares, I required a correlation coefficient of at least 0.5 to stand as evidence of a factor's influence on changes in coverage. Such a strong coefficient would reduce the possibility that a factor's perceived influence is actually a reflection of some random underlying trend. Finally, in creating my multiple regression model, I decided to use all five variables because this yielded the greatest  $R^2$  value. Other tests afforded higher statistical significance to certain factor coefficients, but had much lower  $R^2$  values. As my primary concern centered on the overall variability of coverage shares, I placed a high importance on a model that could account for the greatest percentage of this variability.

## Results

As explained in the “Methods” section, my first examination was of popularity bias in the data set. I fit a plot of my data that compared games' Nielsen Ratings and the average Geographic Index of competing teams with a polynomial regression and found that ratings peak for games featuring sides hailing from the middle of the country – between zones 2 and 3. This finding is depicted graphically in Figure 3. Analyzing the relationship between Nielsen Ratings and the combined local Market areas of the competing teams revealed a positive correlation equal to 0.2361. While not an overwhelmingly figure, this finding demonstrates that teams with larger local markets were associated with slightly higher game ratings and is depicted in Figure

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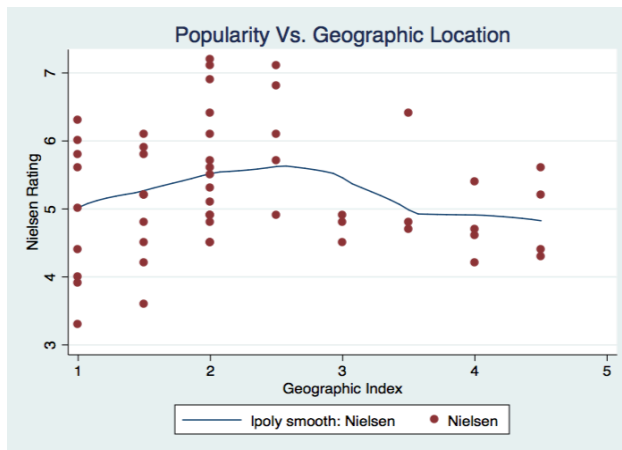


Figure 3: Teams from the East and West Central Midwest were associated with higher Nielsen game ratings.

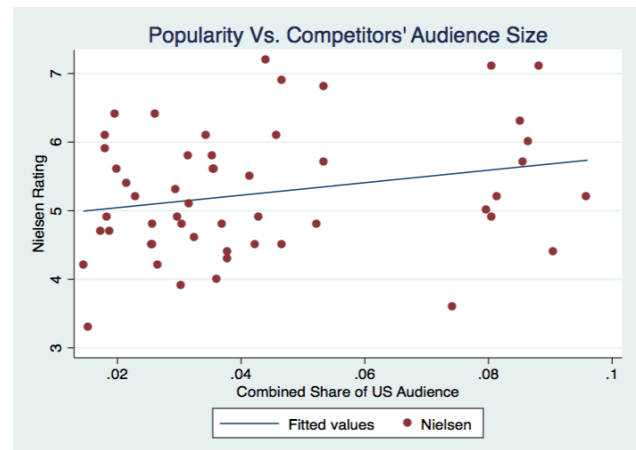


Figure 4: Teams with larger local television markets were associated with higher Nielsen game ratings.

The trend where greater Market Share determines increased Nielsen Ratings is further born out by the data on Major Market teams. When teams from the five “major” markets play on Monday Night Football, there is an average rating of 5.45 compared to an average 5.06 rating in games not involving these teams. The difference in means is statistically significant at the 90% confidence level. The formal hypothesis test is below.

$$H_0: \mu_{MM} = \mu_{nMM}$$

$$H_1: \mu_{MM} \neq \mu_{nMM}$$

$$T = (\mu_{MM} - \mu_{nMM} - 0) / SE = (5.45 - 5.06) / 0.252 = 1.548; \text{ Degrees of Freedom} = 46$$

$$P(T \geq |1.548|) = 93.85\%$$

Looking at the overall data set, having separated the winners and losers, I did not identify a conclusive or consistent trend in Coverage Share that would reflect an ESPN reporting bias based either on Geographic Index or Market Area. There is a moderate positive correlation between the Coverage Share of winning teams and the Geographic Index of these teams equal to 0.3152. This indicates that teams from the west that won got more coverage from teams from the east that won, however, as the figure is lower than my aforementioned 0.5 correlation coefficient threshold, it cannot be taken by itself as conclusive evidence for greater coverage of the west over the east. There was a negligible correlation between the Coverage Share of losing teams and Geographic Index of these teams equal to -0.0352. These results are depicted in Figure 5. Fitting the data in these plots with a polynomial regression yielded similar results as these correlation coefficients and did not reveal a Midwestern favoritism to match the greater popularity of games featuring teams from this region.

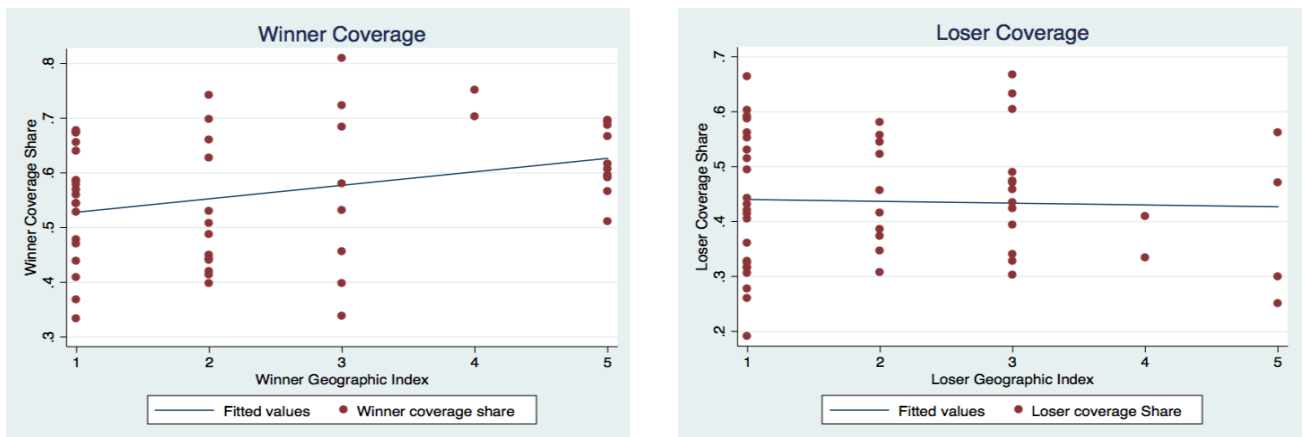


Figure 5: Plotting coverage of winners and losers against geographic index scores did not demonstrate consistently strong correlations between a team’s geographic location and its share of news coverage.

There was a moderate to low negative correlation between the Market Area of winning teams and the Coverage Share received by these teams equal to -0.1825. The correlation between losing teams’ Market Area and their Coverage share was negligible at 0.0253. These results are depicted in Figure 6. As with the correlations calculated for the plots in Figure 5, these figures fall below my 0.5 threshold and as such do not constitute evidence of any strong relationship between coverage share and the size of a team’s local market.

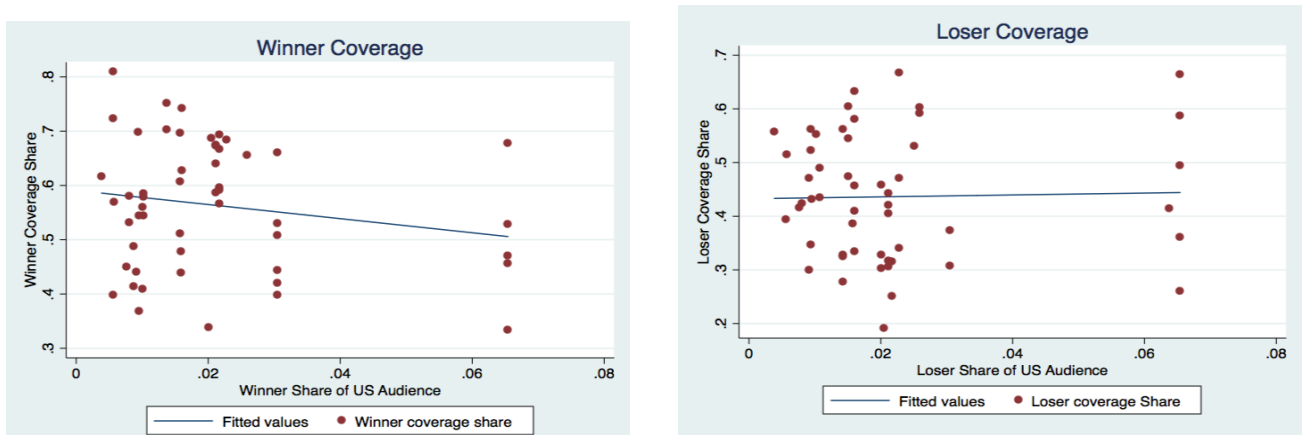


Figure 6: Plotting a team’s share of coverage against the share of the total US television audience located in its local market did not demonstrate that more attention is paid to teams with attractive local market characteristics.

After observing these general effects, I separated the data out region by region. The results for winners by region are listed in Table 1 while the results for games regional losers are listed in Table 2. The results are depicted graphically in Figures 7 and 8. Note that in order to fit Nielsen Rating and Coverage Share on the same y-axis I normalized the Nielsen Rating by dividing the average rating by 7.2, the maximum value observed in this sample.

Geographic Index	1	2	3	4	5
Number of Observations	19	13	8	2	10
Average Nielsen Rating	5.12	5.37	5.89	5.4	4.83
Average Coverage Share	54.2%	52.4%	56.5%	72.6%	62.3%

Table 1: Regional Winners

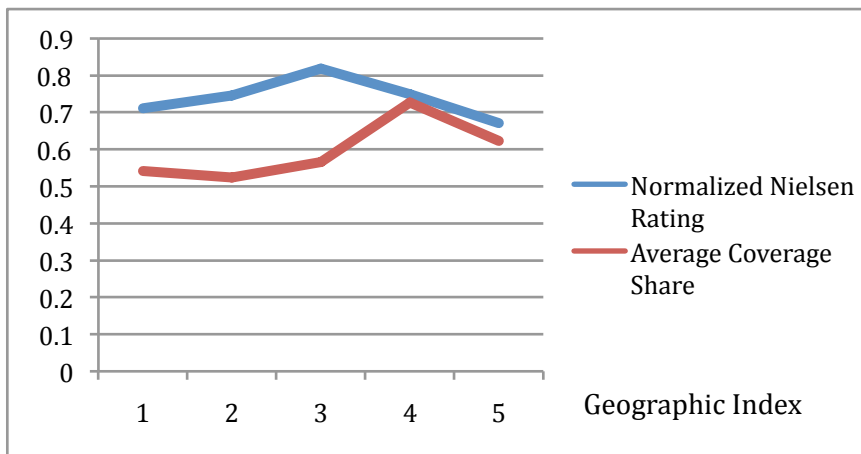


Figure 6: Winners' normalized Nielsen Ratings and average Coverage Shares broken up by region

Geographic Index	1	2	3	4	5
Number of Observations	23	10	13	2	4
Average Nielsen Rating	5.13	5.7	5.34	4.35	5.05
Average Coverage Share	42.9%	44.8%	46.2%	37.1%	39.5%

Table 2: Regional Losers

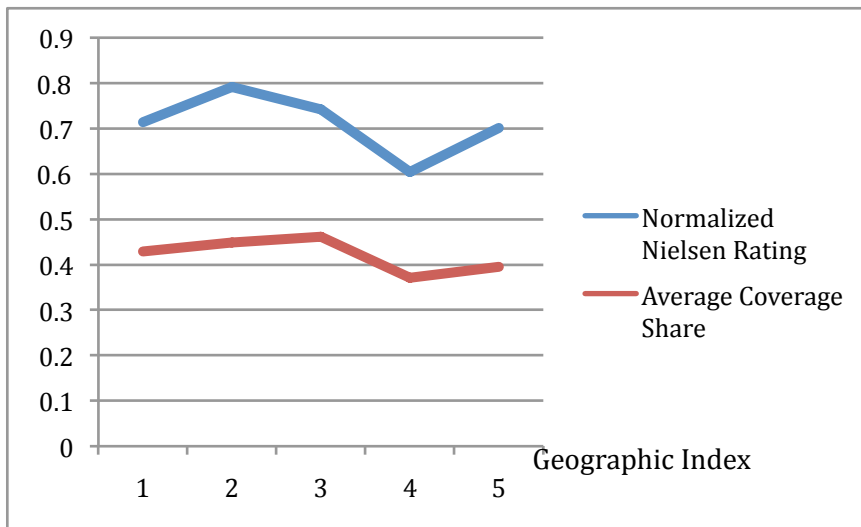


Figure 7: Losers' normalized Nielsen Ratings and average Coverage Shares broken up by region

These plots tell a somewhat different story than the overall picture painted by correlation coefficient calculations where changes in Coverage Shares were not linked to changes in the popularity of a particular contest. Looking at the data after separating winners and losers, there is a trend where the teams from regions that are more popular as measured by Nielsen Ratings also receive more coverage.

Within each region I ran an additional correlation calculation, this time looking at the relationship between Coverage Share and Market Area. The correlations were for the most part quite small and varied as is demonstrated below in Table 3. This leads me to believe that differences in Coverage Shares are random and not indicative of network preferences for catering to larger markets.

Geographic Index	Corr(Winner Coverage, Winner Market area)	Corr(Loser Coverage, Loser Market Area)
1	-0.09	0.1595
2	-0.1095	-0.5186
3	-0.3298	0.0343
4	Insufficient observations	Insufficient observations
5	0.12	-0.6531

Table 3: Correlation of Coverage and Market Area within each longitudinal region

In order to control for market size, I broke teams up into two groups on the basis of their either being from a Major Market or not. Table 4 below contains the results of running correlation calculations looking at the relationship between Geographic Index and Coverage share for Major Market winners and losers and non-Major Markets.

Corr(Geographic Index, Coverage Share)	Winners	Losers
Major Market Team	0.4966	-0.2908
Non-Major Market Team	0.2682	0.1085

Table 4: Correlation between Geographic Index and Coverage Share controlling for market size

These figures, save the correlation for losing teams from Major Markets, indicate that as the team is located further west coverage increases. This appears to be a manifestation of the trend depicted in Figure 5 where winning teams receive more coverage as their locations shift further west. The correlation for Non-Major Market losers illustrates a similar effect, though the small magnitude hints that the relationship is not as significant. The exception to the trend here is that major market teams from the east that lose receive more coverage than their similarly unsuccessful large market peers further west.

The final step of my research involved running a multiple linear regression analysis of winner and loser coverage share on Geographic Index, Market Area, Nielsen Rating, the Major Market dummy indicator, and team won-lost record. The goal of this procedure is to summarize the factors most likely to contribute to differing coverage shares in a single model in order to determine if they contribute to some overarching effect. The expression for this model is Coverage Share =  $\beta_0 + \beta_1(\text{Geographic Index}) + \beta_2(\text{Market Area}) + \beta_3(\text{Nielsen}) + \beta_4(\text{Major}$

Market) +  $\beta_5$ (Won-Lost Record). The results of the regressions on both the winner and loser Coverage Shares are below in Figures 7 and 8.

In analyzing these results, the first thing that one must notice is the  $R^2$  value. In the regressions for winners and losers, this value indicates that the variables observed account for 20.5% and 9.03% of the respective variability in coverage shares. These values are not close to the 50% significance threshold I set for  $R^2$  and indicate that only a very small proportion of changes in the amount of attention paid to a team are attributable to these factors. Additionally, none of these factors' coefficients were statistically significant at the 90% confidence level except for winners' Geographic Index. However, the large F ratio for the Winners multiple regression indicates that at least some of the coefficients should have non-zero values and that their respective factors play roles in determining ultimate coverage shares. This is not true of the Losers regression. The overall message yielded by analysis of these regressions is that the amount of coverage a team receives does not depend overly much on market size, geographic region, winning percentage, major market status, or popularity, though some of these factors may come into play when it comes to differentiating between the coverage shares of winning teams.

. reg W\_Cov\_Share Winner\_Aud\_Share Winner\_Zone NySfPDC Nielsen W\_Record\_Percent

Source	SS	df	MS	Number of obs =	52
Model	.14417926	5	.028835852	F( 5, 46) =	2.37
Residual	.559270113	46	.012158046	Prob > F =	0.0537
				R-squared =	0.2050
				Adj R-squared =	0.1185
Total	.703449372	51	.013793125	Root MSE =	.11026

W_Cov_Share	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Winner_Aud_Share	-.4539998	1.161997	-0.39	0.698	-2.792978	1.884978
Winner_Zone	.0223506	.0111658	2.00	0.051	-.0001251	.0448262
NySfPDC	-.0446663	.0373202	-1.20	0.238	-.1197879	.0304553
Nielsen	.020156	.0193322	1.04	0.303	-.0187578	.0590697
W_Record_Percent	.0859932	.0808581	1.06	0.293	-.0767656	.2487521
_cons	.3790428	.0950646	3.99	0.000	.1876877	.5703979

Figure 8: Multiple Linear Regression of Winner Coverage Share on Geographic Index (Winner\_Zone), Market Area (Winner\_Aud\_Share), Nielsen Rating (Nielsen), a major market dummy indicator (NySfPDC), and Won-Lost record (W\_Record\_Percent)

. reg L\_Cov\_Share Loser\_Aud\_Share Loser\_Zone NySfPDC Nielsen L\_Record\_Percent

Source	SS	df	MS	Number of obs =	52
Model	.063554448	5	.01271089	F( 5, 46) =	0.91
Residual	.63989494	46	.01391076	Prob > F =	0.4806
				R-squared =	0.0903
				Adj R-squared =	-0.0085
Total	.703449388	51	.013793125	Root MSE =	.11794

L_Cov_Share	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Loser_Aud_Share	-.4651893	1.22635	-0.38	0.706	-2.933704	2.003325
Loser_Zone	-.0024399	.0143817	-0.17	0.866	-.0313888	.026509
NySfPDC	.0458911	.0409754	1.12	0.269	-.0365882	.1283703
Nielsen	-.0212998	.0186855	-1.14	0.260	-.0589117	.0163121
L_Record_Percent	-.0782291	.07964	-0.98	0.331	-.2385361	.082078
_cons	.5736475	.105925	5.42	0.000	.3604316	.7868634

Figure 7: Multiple Linear Regression of Loser Coverage Share on Geographic index (Loser\_Zone), Market Area (Loser\_Aud\_Share), Nielsen Rating, a major market dummy indicator (NySfPDC), and Won-Lost record (L\_Record\_Percent)

Overall, my research was consistent with the results of the regression that determined no clearly defined reporting bias on the basis of geography or market characteristics in ESPN's written "Game Recaps". This is most clearly corroborated by Figure 5 and Figure 6 where no clear correlation is demonstrated to exist between Coverage Share and either Market Area or Geographic Index. A notable exception here is the trend demonstrated in Figures 6 and 7 where the average Coverage Share of winners and losers is shown to track movements in the normalized average Nielsen Rating for games played in each geographic region. The finding here, which is consistent with the result depicted in Figure 3 where teams from the East and West Central Midwest received the highest ratings, is that both coverage and ratings spike for teams in the center of the country. In order to test this outlying result, I ran a regression for the coverage share of both winners and losers on Nielsen Rating and Geographic Index, the two factors featured in Figures 6 and 7. The F Ratios were 3.57 and 0.58 for winners and losers respectively which indicates that some of the coefficients on Nielsen Rating and Geographic Index in the Winner Coverage Share regression could have non-zero values and measurable impacts. A low  $R^2$  value indicates that any impact on winners' coverage shares are relatively small. The F Ratio for Loser Coverage Share is such that I cannot reject the hypothesis that factor coefficients should be zero. This is in line with the finding of the overall regression that determines that these factors may have some small effects on differences in winner coverage shares but not the attention paid to losing teams.

Overall, my research did not determine any significant or definitive reporting bias to exist within ESPN's written "Game Recaps". There does appear to be a slight popular bias toward teams from the Midwest, and there was a discernible increase in Nielsen Ratings when teams with larger Market Areas were involved in the games. Even in these cases where there was an identifiable determinant of increased ratings, ESPN did not skew its coverage toward the more popular side. Additionally, my subsample that controlled for geographic region did not reveal any sort of eclipse effect where coverage of larger market teams would outstrip that of their smaller market neighbors because the correlations here between Market Area and Coverage Share were mostly small and highly varied. When I controlled for market size, I found that teams from the west received somewhat more coverage than their counterparts from the east with the exception of losing teams from major eastern markets, which received more attention than their western counterparts. While at face value this could indicate that there is some East Coast Bias leading the network to cover such teams more than they would a typical losing side, the multiple linear regression that took these geographic and major market factors into consideration returned very low  $R^2$  and F Ratio values, indicating that such factors have relatively little explanatory power over differences in coverage for losing teams. A multiple regression model for winning team coverage returned a similarly low  $R^2$  statistic but a large F ratio, indicating that some of the factors may have non-zero coefficients but that the share of variation in coverage explained by these factors is relatively small. As such, my final take away is that, aside from a tendency to give the majority of the coverage to the winning side, ESPN does not demonstrate any significant reporting bias in its news coverage as reflected by written "Game Recaps".

## **Discussion**

In considering the conclusion reached by this study that ESPN does not demonstrate significant bias on the basis of geography or market size in its news reporting, there are some

limitations to the research that must be understood. The first pertains to the control for quality of the team and the second has to do with comprehensiveness of “Game Recap” text mining.

In his Bristolmetrics study, Patrick Burns demonstrated won-lost record to be a key determinant as to whether or not a particular team got airtime during *SportsCenter*. As mentioned earlier, my research controlled for the quality of teams insofar as ESPN was able to select matchups during the preceding offseason that turned out to be as salient as hoped. It is not possible for the network to make accurate predictions all of the time (or even a strong majority of the time) when it comes to looking ahead at NFL seasons, so my data contains both teams that were successful and teams that were unsuccessful as well as some that fell in between. However, the above average winning percentage, 0.535, of teams featured in these games indicates that the network was at least somewhat successful in achieving this end. Control for the quality of team in my study was further bolstered by the inclusion of a Won-Lost record variable in the multiple linear regression analysis.

Unlike the Burns study, which looked at a news program that gets to choose among stories concerning any of the 30 NFL teams, my research observed contests in which only two teams participated. The effect of record as it relates to a side’s relevance will thus be different in the two papers. While teams with bad records will be passed over most of the time in favor of superior teams when it comes to *SportsCenter* analysis, single game reports have only two teams to deal with. As a result, both teams will get a significant share of the coverage regardless of disparities in quality. This is a large part of the reason why quality of team was not a significant differentiator when it came to differing coverage shares in my study.

Also pertinent on the topic of won-lost records would be a team’s winning percentage in Monday Night Football games as well as the composite record for teams from a particular geographic region. For example, if the New York Jets and Giants lost every Monday night game they played in while the San Francisco 49ers and Oakland Raiders won every one of these contests they appeared in, the success of the Major Market west coast teams and failures of their east coast counterparts could hinder my ability to observe overall trends. If ESPN awarded more coverage on the basis of market size, the New York teams’ results would only affect trends for losers while the San Francisco Bay Area teams’ results would only influence trends for winners. This sort of scenario could explain the trends depicted in Figure 6 which plots Coverage Shares against Geographic Index and where winners from the west coast and losers from the east coast are seen to get more coverage than counterparts with similar results from the opposite side of the country. Ideally, I would compare coverage averages for teams that had the same records in these games, but, given the limited sample of games, I would be unable to find sufficient observations to reveal statistically significant trends. With more time and resources, this sort of analysis could be made possible by going through games played over a longer time period while collecting more data on won-lost records both overall and in these particular games. Additional efforts could be taken to weed out games with significant external storylines like the Brett Favre retirement in order to create the cleanest data set possible, but the fact of the matter is that almost all games have such outside narratives making the total elimination of this factor impossible.

In text mining ESPN’s “Game Recaps” I did not control for the strength, context, or vocabulary of a team or player mention. Not all mentions are created equal and even if the percentage shares for two teams that I calculated in my data set are similar, the actual content of the articles could diverge in the degree they favor the sides. For example, the sentence “Tom

Brady was dominant in the Patriots' thrashing of the Jets" would yield a 2/3 coverage share for the New England Patriots. Another sentence reading, "The Cardinals' quarterback ably managed the game as Arizona defended its home turf against surging Dallas," provides that same 2/3 share but is less convincingly in favor of the more talked about team than the former example. Ways in which emphasis in favor of a particular team is conveyed include calling players by their names rather than positions, hyperbolic vocabulary, as well as the increase of pure mentions. Without accounting for the former two contributors to article emphasis, my Coverage Share statistic is somewhat incomplete insofar as it is able to measure the degree to which reports are biased towards one team over others.

Correcting for this imperfection would be extremely difficult if one were to look exclusively at the written recaps. These articles only deal with the two teams involved in a particular contest and as such it is only possible to compare emphasis given to each of these sides. Comparisons between teams in different articles are impossible because they are not competing against each other for mentions in the same space. The percentage of raw mentions would become a more powerful statistic if looked at over a longer period of time in contexts where more teams are discussed. This is the approach taken by Burns in his study. Over time, the emphasis of particular phrasings would be less important as the number of mentions increases and teams that are favored over others are brought up more frequently. This would involve extensive research into the other components of ESPN's news offerings I mentioned at the beginning of the paper including radio, *SportsCenter* highlights, and written analysis done on a the league as a whole.

For the time and resources I had available to me, using network selection of teams as a first level control for competitor quality and "Game Recaps" as a representative of the news served as a capable vehicle to some preliminary findings to answer the question of whether there is geographic or market based bias at ESPN. Limitations in both areas, however, mean that further research must be done to patch up certain holes in the analysis before any conclusions can be taken as definite. The trends that are visible in my data do serve as a good starting point as indicators of what might be shown by more precise analysis.

Finally, it is worth considering possible reasons why ESPN might not deliberately skew its coverage to favor teams from major markets as the participation of these sides determines higher television ratings or the contests in question. One possible rationale might be a desire to uphold an image of journalistic integrity where viewers can believe that more or less even coverage is awarded across geographies. This seems unlikely, however, given the relative lack of competition in the sports media sphere; if fans are unhappy with ESPN's practices they do not have an alternative outlet to switch to in order to seek more equitable coverage. Rather, this result of my research could be another product of looking at coverage of contests featuring two contestants. Unlike during *SportsCenter*, there are only two represented markets to choose from so there is less of an opportunity to favor certain locales over others while still conveying the news of the game. I would expect major markets to be more represented during *SportsCenter* telecasts, and this seems to be born out in Burns' finding that franchises with higher valuations, which often reflect favorable characteristics of their local markets, receive more mentions on the show.

## **Conclusion**



My study of ESPN's written news reporting following Monday Night Football games did not determine any strongly identifiable bias – geographic or market based – at the network. There appears to be a popular bias toward teams from the Midwest over others, and I observed a statistically significant trend where games featuring teams from larger television markets got higher Nielsen Ratings than those that did not. Even in the cases where there was an identifiable determinant of increased audience, ESPN did not significantly skew its coverage to the more popular side. While factors such as Nielsen Rating, Market Area, Geographic Index, and major market status were determined to play some role in differentiating the coverage share awarded to winners, the impact as modeled by my multiple regression proves to be relatively small. The only consistently strong trend of favoritism in the articles was that a greater share of coverage was consistently awarded to the winner of the game, a fact that makes some intuitive sense.

Before definitive conclusions can be made regarding the validity of criticisms toward ESPN on the basis of geographic or other favoritism, there are some measures that must be taken to bolster my study that involve strengthening the method of controlling for team quality and measuring coverage share. The trends demonstrated in this paper indicate that there is not a strong or extremely noticeable bias, but analysis of the network on a more extensive basis could reveal that this slant exists in other areas of the operation. Indeed, the presence of special pages on the website dedicated to the coverage of Boston, Chicago, Dallas, Los Angeles, and New York telegraph the fact that the news distributor favors catering to audiences in these markets over others. Further research into the trends depicted in this paper are necessary before any implications can be drawn and extended to answer questions regarding bias and practices in the general news media.

With regards to the Monday Night Football “Game Recaps” in and of themselves, a reader can feel fairly confident that the content is a balanced account of the contest's events without undue emphasis given to one side over the other on the basis of external factors. As with all aspects of sports fandom, the practices of the “Worldwide Leader” will always be the subject of heated debate. Given my statistical evidence to the contrary, it appears that the side arguing that the East Coast is overrepresented compared to the rest of the country is mistaken. With this debate closed for the time being, viewers of the NFL can return to more important matters such as arguing over whether a defensive player can win the MVP award, whether Tom Brady or Peyton Manning is the superior quarterback, and which team will win this year's Super Bowl.

## Appendix

<b>Team Location</b>	<b>Share of the Number of US Households with at least 1 Television</b>
New York	6.539%
Chicago	3.055%
Philadelphia	2.595%
Dallas	2.288%
Oakland	2.176%
San Francisco	2.176%
Boston (New England)	2.13%
Washington D.C.	2.117%
Atlanta	2.051%
Houston	2.022%
Phoenix (Arizona)	1.612%
Detroit	1.611%
Tampa Bay	1.601%
Seattle	1.584%
Minneapolis (Minnesota)	1.52%
Miami	1.435%
Denver	1.376%
St. Louis	1.078%
Pittsburgh	1.031%
Charlotte (Carolina)	1.014%
Baltimore	0.96%
Indianapolis	0.951%
San Diego	0.926%
Nashville (Tennessee)	0.881%
Kansas City	0.811%
Cincinnati	0.77%
Jacksonville	0.58%
New Orleans	0.563%
Green Bay	0.386%

Table 5: Percentage of All US Television Watching Households in Each Team's Local Market

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