A Holistic Way of Looking at Audience Measurement for Sports Combining Traditional Media Measurement with Fan Engagement

SBRnet has introduced a proprietary Sports Fan Audience Measurement rating that combines traditional audience measurement with multiple active fan focused engagement data points.

The SBRnet FanVerse rating measures the size of the audience combined with key active fan behavior data points to create a new measurement KPI to better evaluate the value of potential and existing marketing efforts. The FanVerse Rating is based on proprietary data derived from **SBRnet's Annual Study of Sports Fan behavior.**

This unique measurement brings together data from fans that attend games together with those that chose to watch via traditional media outlets, streaming options and social media.

The second phase of the FanVerse takes the following categories into account to create a **Fan Engagement Score** to further hone in on specific audiences.

1. Viewership, Traditional and Streaming
2. Attendance
3. Licensed Merchandise Sales
4. Fantasy Usage
5. Sponsorship Influence
6. Sports Gambling Participation
7. Sports Travel*
8. Social Media Usage

The FanVerse from SBRnet measures the following…

*Sports Travel first included in 2021

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The SBRnet Fan Audience Measurement Indicator includes the following deliverables.

- Measure by any of the 16 Leagues and Sports Measured in the Survey
- 3 Year Comparative data for analysis
- Measurements on a team-by-team basis across leagues and geography
- Geography using DMA's with teams, census region and state.

Sports Fan Audience Measurement (SFAM) Methodology
Using MLB for This Example

I. **Overview** - The Engagement Score of a sports team is a measure of the value of a fan of that team relative to the typical fan in that sport. We measure this by observing how many fans in of a team's fan base that (a) attends games, (b) watches games via television, (c) watches games via streaming service, (d) spends on team merchandise, (e) gambles on the sport, and (f) plays fantasy sports. Each of these categories represents a willingness to spend on the part of the consumer and is thus valuable to sponsors seeking to engage them.

II. For each of these six categories outlined above, we can calculate an engagement score (so we will have an Attendance Engagement Score, Merchandise Engagement Score, etc.). Here, we see some data for five MLB teams (all numbers are in thousands):

	Audience Size	Played Fantasy Sports	Gambled on Sports	Total Merchandise Spending	Watched via Television	Watched via Streaming Service
Diamondbacks	1,465	290	554	$9,965	1,178	463
Braves	7,655	784	1,562	$184,311	6,190	2,199
Orioles	1,872	118	331	$17,435	1,286	562
Red Sox	6,563	1,100	1,229	$80,938	5,285	1,727
Cubs	8,204	1,295	2,174	$148,487	6,515	2,451

III. We now want to adjust for the size of each fanbase, so we divide each category by the audience size:

	Audience Size	% Played Fantasy Sports	% Gambled on Sports	Merchandise Spending per Person	% Watched via Television	% Watched via Streaming Service
Diamondbacks	1,465	19.8	37.8	$6.80	80.5	31.6
Braves	7,655	10.2	20.4	$24.08	80.9	28.7
Orioles	1,872	6.3	17.7	$9.32	68.7	30.4
Red Sox	6,563	16.8	18.7	$12.33	80.5	26.3
Cubs	8,204	15.8	26.5	$17.85	79.4	29.9

IV. To calculate the Engagement Score for each category, we divide that category's data by the corresponding data for all teams. For example, because the average amount of

merchandise spending per person in the MLB is $17.49, the Diamondbacks' Merchandise Engagement Score is $\frac{\$6.80}{\$17.49} = 0.389$, meaning that in terms of merchandise spending, Diamondbacks fans are 0.389 times as valuable as the typical MLB fan.

	Audience Size	Fantasy Engagement Score	Gambling Engagement Score	Merchandise Engagement Score	Television Viewership Engagement Score	Streaming Viewership Engagement Score
Diamondbacks	1,465	1.827	2.047	0.389	1.002	1.191
Braves	7,655	0.946	1.104	1.377	1.007	1.083
Orioles	1,872	0.583	0.957	0.533	0.856	1.146
Red Sox	6,563	1.548	1.103	0.705	1.003	0.992
Cubs	8,204	1.458	1.443	1.021	0.989	1.127

V. **Calculating Engagement from Attendance** - Because we have more granular data on attendance, we can calculate a more accurate Attendance Engagement Score - we have data on how many fans attended 1 game, 2-3 games, and 4+ games:

# of Games	# of Fans
1	6.122 million
2-3	4.316 million
4+	2.639 million

VI. **Building an Attendance Frequency Function** - For simplicity, we assume that the highest number of games that a fan will attend is 10. From there, we can use the above data to estimate the number of fans for each exact number of games.

# of Games	# of Fans
1	6.1 million
2	2.9 million
3	1.4 million
4	0.9 million

5	0.6 million
6	0.4 million
7	0.3 million
8	0.2 million
9	0.125 million
10	0.075 million

Using data analysis software, we can find the function that best fits this data:
$$\# \, Fans = 12.57 * e^{-0.757 * \# \, Games} + 0.1928$$

VII. **Using the Attendance Frequency Function to Estimate Total Number of Games Attended** - Using the attendance frequency function, we estimate the following frequencies:

# of Games	# of Fans	# of Games Attended	Games/Fan
1	6.075 million	6.075 million	1
2-3	4.439 million	10.365 million	2.335
4+	2.487 million	14.963 million	6.016

Note that the "# of Games Attended" column represents the number of games attended by fans represented in the corresponding row. For instance, in the "2-3 Games" row, we estimate that 10.365 million games were attended by the 4.439 million fans who attended 2-3 games. While these are approximations, they are necessary because we have insufficient information about the exact number of games attended by each fan. Now, for each city, we can multiply the number of fans in each bucket by the number of games/fan to estimate the total number of games attended. Here, we use the Diamondbacks as an example to illustrate this:

# of Games	# of Fans	Total # of Games
1	44,230	44,230 * 1
2-3	82,070	82,070 * 2.335
4+	39,520	39,520 * 6.016

We see that $44,230 * 1 + 82,070 * 2.335 + 39,520 * 6.016 \approx 473,608$, so we estimate that Diamondbacks fans attended 473,608 games.

VIII.   Now that we have estimates for the number of games attended by fans of each team, we can add that data to the table in step iii (all numbers are in thousands). Note that while the attendance data measures how many games attended by fans of a team, not that team's attendance.

	Audience Size	Played Fantasy Sports	Gambled on Sports	Total Merchandise Spending	Watched via Television	Watched via Streaming Service	Total Games Attended
Diamondbacks	1,465	290	554	$9,965	1,178	463	474
Braves	7,655	784	1,562	$184,311	6,190	2,199	2,578
Orioles	1,872	118	331	$17,435	1,286	562	1,438
Red Sox	6,563	1,100	1,229	$80,938	5,285	1,727	2,217
Cubs	8,204	1,295	2,174	$148,487	6,515	2,451	6,235

IX.   From here, we calculate the Attendance Engagement Score as outlined in steps iii-iv:

	Attendance Engagement Score
Diamondbacks	0.592
Braves	0.617
Orioles	1.407
Red Sox	0.618
Cubs	1.391

X.   To calculate the overall Engagement Score of a team, we take an average of each category's Engagement Score weighted by the number of fans in each category. Here, we see the following data for the number of fans in each category. The following data is an average of the number of fans in each category across the MLB, NFL, NBA, and NHL (all numbers are in thousands).

	Total Fans	**% of Engagement**
Attended	13,077	7.8%
Played Fantasy Sports	13,441	8%

Gambled	17,280	10.3%
Spent on Apparel	22,473	13.4%
Watched Traditional	73,928	44%
Watched Streaming	27,750	16.5%

Here, we note that 7.8% of total engagement is generated from attendance, 8% from fantasy sports, etc. Thus, we calculate the Engagement Score for the Diamondbacks using the following formula:

$$0.078 * 0.592 +$$
$$0.08 * 1.827 +$$
$$0.103 * 2.047 +$$
$$0.134 * 0.389 +$$
$$0.44 * 1.002 +$$
$$0.165 * 1.191 \approx 1.093$$

Generally, we use the formula:

$$\sum_{category} (\% \textit{ of Engagement})_{category} * \textit{Engagement Score}_{category}$$

Sports Fan Market: Survey Methodology

This consumer survey was conducted online for SBRnet in January 2022 among a representative panel of U.S. consumers age 13 or older. A total of 6,426 respondents completed the survey.

Each respondent reported on their viewership of specific professional and college sports during the previous 12 months. In addition, respondents also reported their participation in fantasy sports, gambling and eSports, usage of the most popular social media platforms, favorite sports teams, and demographics.

The data is weighted to represent the demographic composition of U.S. households on the following characteristics: geographic region, income, household size, age, gender, race and ethnicity. The data is also weighted to the U.S. population of 276.0 million individuals age 13 or older.

All Data based on the following definition

Attended or watched games/matches/races in the past 12 months for any of the following sports

Note: Attendance not asked in 2020 due to COVID-19

Each respondent reported on their attendance or viewership (on television, computer/laptop/netbook, tablet, or a smart phone) of 16 professional and college sports from2015 through the end of calendar year 2020. The age and gender of the respondent was obtained as well as the place of purchase, the amount spent on related sports apparel purchased, participation in sports, sponsorship influence, sports-related activities on computers and mobile devices, social media usage, and sports-related travel during the same time period.

The data is weighted to represent the demographic composition of the continental U.S. based households on the following five characteristics: geographic region, income, household size, age and gender.

Residents of Alaska and Hawaii were not included in this survey. The data is also weighted to the U.S. population of 261.9 million individuals age 13 or older.

How to read FanVerse reports

- All data derived from the **SBRnet annual study of sports fans**: 18 leagues/sports, 65 categories of data, 5 years of data for trending.
- Set **baseline audience** based on fans that attend and/or watch games on traditional or streaming media.
- **Measurement can be done at the league, team and DMA level**
- Then calculate the **Fan Engagement Score**. This made up of 8 separate variables using the respective median measures for all categories.
  1. Viewership, Traditional and Streaming
  2. Live Attendance at Games
  3. Licensed Merch Purchase Intentions
  4. Fantasy Play: Season Long and Daily Play Included
  5. The influence of sponsorship messaging
  6. Sports Gambling Participation
  7. Sports Travel to support their favorite team
  8. Social Media Usage Volume
- Multiply engagement score against baseline audience to create **Fan Audience Engagement Measurement**. Engaged Fans are Better Fans.

Step 1...Calculate Baseline Audience Measurement

Combines both Live Attendance and Viewership via Traditional Media and Streaming.
Can be done for up to 4 years

2020		
Rank	Team	Base Audience Size
1	New York Yankees	10,479,000
2	Boston Red Sox	7,299,000
3	Los Angeles Dodgers	6,735,000
4	Chicago Cubs	6,342,000
5	Atlanta Braves	6,192,000
6	New York Mets	4,336,000
7	Philadelphia Phillies	3,093,000
8	Cleveland Indians	2,591,000
9	Baltimore Orioles	1,885,000
10	Houston Astros	2,413,000
11	Texas Rangers	2,355,000
12	Chicago White Sox	2,036,000

2021		
Rank	Team	Base Audience Size
1	New York Yankees	11,352,740
2	Chicago Cubs	8,204,500
3	Los Angeles Dodgers	7,038,090
4	Atlanta Braves	7,655,200
5	Houston Astros	4,485,030
6	New York Mets	4,433,840
7	Boston Red Sox	6,562,630
8	St. Louis Cardinals	3,857,510
9	San Francisco Giants	4,298,600
10	Minnesota Twins	2,321,350
11	Chicago White Sox	2,520,470

Step 2...Create Sports Fan Engagement Score

Fan Engagement Score is the Aggregate Combined Median Score for the team indexed against the Applicable League Numbers. Includes: *Viewership, Attendance, Licensed Merch Sales, Sports Gambling, Sports Travel, Sponsorship Influence, Fantasy Play, Social Media Engagement*

2020			
Rank	Team	Base Audience Size	Engagement Score
1	New York Yankees	10,479,000	1.070
2	Boston Red Sox	7,299,000	1.264
3	Los Angeles Dodgers	6,735,000	1.291
4	Chicago Cubs	6,342,000	1.092
5	Atlanta Braves	6,192,000	0.939
6	New York Mets	4,336,000	1.180
7	Philadelphia Phillies	3,093,000	1.089
8	Cleveland Indians	2,591,000	1.081
9	Baltimore Orioles	1,885,000	1.361
10	Houston Astros	2,413,000	1.036
11	Texas Rangers	2,355,000	1.032

2021			
Rank	Team	Base Audience Size	Engagement Score
1	New York Yankees	11,352,740	0.983
2	Chicago Cubs	8,204,500	1.311
3	Los Angeles Dodgers	7,038,090	1.363
4	Atlanta Braves	7,655,200	1.019
5	Houston Astros	4,485,030	1.403
6	New York Mets	4,433,840	1.333
7	Boston Red Sox	6,562,630	0.866
8	St. Louis Cardinals	3,857,510	1.084
9	San Francisco Giants	4,298,600	0.964
10	Minnesota Twins	2,321,350	1.620
11	Chicago White Sox	2,520,470	1.335
12	Philadelphia Phillies	3,345,250	0.894

Step 3... The Baseline Audience x Fan Engagement Score

Fan Audience Engagement Measurement

2020				
Rank	Team	Base Audience Size	Engagement Score	Total Audience Value
1	New York Yankees	10,479,000	1.070	11,207,329
2	Boston Red Sox	7,299,000	1.264	9,226,767
3	Los Angeles Dodgers	6,735,000	1.291	8,696,457
4	Chicago Cubs	6,342,000	1.092	6,925,187
5	Atlanta Braves	6,192,000	0.939	5,814,732
6	New York Mets	4,336,000	1.180	5,115,390
7	Philadelphia Phillies	3,093,000	1.089	3,368,968
8	Cleveland Indians	2,591,000	1.081	2,801,447
9	Baltimore Orioles	1,885,000	1.361	2,565,051
10	Houston Astros	2,413,000	1.036	2,499,394
11	Texas Rangers	2,355,000	1.032	2,430,422
12	Chicago White Sox	2,036,000	1.144	2,328,524

2021				
Rank	Team	Base Audience Size	Engagement Score	Total Audience Value
1	New York Yankees	11,352,740	0.983	11,155,377
2	Chicago Cubs	8,204,500	1.311	10,752,959
3	Los Angeles Dodgers	7,038,090	1.363	9,589,929
4	Atlanta Braves	7,655,200	1.019	7,803,260
5	Houston Astros	4,485,030	1.403	6,293,399
6	New York Mets	4,433,840	1.333	5,910,619
7	Boston Red Sox	6,562,630	0.866	5,684,336
8	St. Louis Cardinals	3,857,510	1.084	4,179,739
9	San Francisco Giants	4,298,600	0.964	4,142,642
10	Minnesota Twins	2,321,350	1.620	3,760,083
11	Chicago White Sox	2,520,470	1.335	3,365,100
12	Philadelphia Phillies	3,345,250	0.894	2,990,154