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## The Five Metrics to Compare NFL Fan Bases

There are a lot of different characteristics of NFL fan bases, and each of the fan bases vary among these attributes. Some have fans all over the country, while others make sure they fill the stadium every Sunday. For this study, five different metrics were used to score each of the fan bases from 1-33 (32 NFL teams, and one extra group who do not identify a favorite team). They are the total number of fans,

attendance, attendance per fan, merchandise purchased, and merchandise purchased per fan. By using these five metrics, the fan bases of each team were ranked to determine the best fans in football over the past five years.

## Data Explanation

To obtain this data, a consumer survey was conducted among a representative panel of United States consumers that were 13 or older. About 5000 people completed the survey each year, and the results were scaled to represent the entire US population aged 13+ each year. Because of the size of the sample compared to the size of the entire population, results experience a lot of variability from year to year. It is important to note that any number from a chart is in thousands.

## Total Number of Fans

In terms of the raw number of fans in the US, two things stayed consistent throughout the past five years: the Dallas Cowboys have the largest fanbase in the NFL, and the Jacksonville Jaguars have the smallest. The Cowboys had over ten million fans in each of the five years, a number that was recorded only two other times, by the New England Patriots in 2017 and 2019. The Jaguars, on the other hand, never reached one million fans in any of the five years, something that only happened two other times: once by the Tennessee Titans in 2018, and the other by the Los Angeles Chargers in 2019. Cowboy fans accounted for about 9% of all NFL fans in the United States, meaning that about one out of every eleven people identified as such. Jaguar fans accounted for about 0.33% of all NFL fans in the United States, or about one out of every 300 people.

Year	Fans (Thousands)	Percent Change
2017	128742.96	0%
2018	120330.89	-6.534%
2019	121597.96	1.053%
2020	124413.32	2.315%
2021	143180.46	15.085%
5 Year Percent Change	11.214%	
Total Fans (Thousands)	638265.59	
Average Number of Fans (Thousands)	127653.12	

As a league, the NFL had about 128 million Americans 13+ attend or watch an NFL game in 2017, which accounted for about 47.62% of all Americans 13+. That number grew to about 143 million by 2021, an 11% increase over the five years. The biggest change in any one year was from 2020 to 2021, a year in which the NFL

experienced a 15% increase just one year after the COVID-19-impacted season. The average number of American fans aged 13+ that went to or watched a game over the five years was about 127.6 million.

## Rankings

Team	Total Fans (Thousands)	Average Number of Fans (Thousands)	Rank
Arizona Cardinals	9095.56	1819.11	29
Atlanta Falcons	13735.76	2747.15	20
Baltimore Ravens	13386.93	2677.39	22
Buffalo Bills	14807.14	2961.43	17
Carolina Panthers	13990.08	2798.02	19
Chicago Bears	35768.61	7153.72	4
Cincinnati Bengals	10091.09	2018.22	28
Cleveland Browns	15428.78	3085.76	16
Dallas Cowboys	55895.45	11179.09	1
Denver Broncos	19448.54	3889.71	12
Detroit Lions	17654.07	3530.81	14
Green Bay Packers	37842.35	7568.47	3
Houston Texans	12020.10	2404.02	25
Indianapolis Colts	8894.67	1778.93	30
Jacksonville Jaguars	2422.75	484.55	33
Kansas City Chiefs	23044.78	4608.96	10
Las Vegas Raiders	13490.42	2698.08	21
Los Angeles Chargers	6109.19	1221.84	32
Los Angeles Rams	14580.70	2916.14	18
Miami Dolphins	13186.96	2637.39	23
Minnesota Vikings	17893.41	3578.68	13
New England Patriots	45816.98	9163.40	2
New Orleans Saints	16373.26	3274.65	15
New York Giants	31627.35	6325.47	5
New York Jets	11848.01	2369.60	27
Philadelphia Eagles	23647.94	4729.59	9
Pittsburgh Steelers	31313.57	6262.71	6
San Francisco 49ers	25779.47	5155.89	8
Seattle Seahawks	22400.12	4480.02	11
Tampa Bay Buccaneers	11950.74	2390.15	26
Tennessee Titans	6434.46	1286.89	31
Washington Commanders	12467.64	2493.53	24
N/A	29818.73	5963.75	7

An average of the total number of fans per year was taken over the past five years to properly rank each team using this metric. There were some interesting trends as total fans fluctuated, both league-wide and for specific teams. In terms of specific teams, the Tampa Bay Buccaneers, Los Angeles Rams, and Kansas City Chiefs were

the biggest risers in fans over the past five years, which can be attributed to Tom Brady and a Super Bowl win for Tampa Bay, moving to Los Angeles and a Super Bowl win for Los Angeles, and the emergence of Patrick Mahomes and a Super Bowl win for Kansas City. The largest single-season growth belongs to the Jacksonville Jaguars, who, even after tripling the size of their fan base in one season after drafting generational talent Trevor Lawrence, remained in last for the 2021 season. On the other side of the coin, the Green Bay Packers, Seattle Seahawks, and New England Patriots were the biggest fallers. All three of these teams ranked within the top seven in 2017, and while both the Packers and Patriots were able to stay in the top seven in 2021, they were unable to keep all of their fans. The largest single-season decline belongs to the Miami Dolphins in 2019, almost cutting their fan base in half, but then immediately doubling the count a year later, which could just be a byproduct of the sample. All in all, the Dallas Cowboys, New England Patriots, and Green Bay Packers ranked 1st, 2nd, and 3rd in fans, while the Tennessee Titans, Los Angeles Chargers, and Jacksonville Jaguars rounded out the back end of the list.

## Fan Attendance

Fan attendance is arguably the most important aspect of a team's fan base. Teams perform better at home in front of a full crowd, hence why the NFL awards home-field advantage in the playoffs to the best teams every year. For each team each year, data was collected to see how many US fans went to one, two or three, or four or more games. Using this data, a yearly score was calculated for each team, using different weights to properly assign value to each of the different categories. One point was awarded for one game, two and a half points for two or three games, and four points for four or more games. The scores from 2017, 2018, 2019, and 2021 were then added together to find a total score, and then that number was divided by the total number of fans for each team across the five years to find the attendance per fan metric (2020 was not included in the attendance metrics because of the differing attendance rules that each team put in place due to the COVID-19 Pandemic).

## Rankings

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<b>Team</b>	<b>Total Score</b>	<b>Total Score Rank</b>	<b>Total Score per Fan</b>	<b>Total Score per Fan Rank</b>
Arizona Cardinals	3093.80	19	0.3401	2
Atlanta Falcons	3342.13	17	0.2433	14
Baltimore Ravens	4115.67	13	0.3074	4
Buffalo Bills	4262.38	12	0.2879	6
Carolina Panthers	2487.25	26	0.1778	26
Chicago Bears	9040.59	2	0.2528	8
Cincinnati Bengals	2522.79	25	0.2500	10
Cleveland Browns	3302.57	18	0.2141	17
Dallas Cowboys	8199.73	3	0.1467	31
Denver Broncos	4091.26	14	0.2104	18
Detroit Lions	2604.69	23	0.1475	30
Green Bay Packers	9468.36	1	0.2502	9
Houston Texans	2036.66	30	0.1694	28
Indianapolis Colts	2176.84	28	0.2447	13
Jacksonville Jaguars	745.08	33	0.3075	3
Kansas City Chiefs	5536.41	8	0.2402	15
Las Vegas Raiders	3360.18	16	0.2491	11
Los Angeles Chargers	2235.73	27	0.3660	1
Los Angeles Rams	2890.05	20	0.1982	24
Miami Dolphins	2693.36	21	0.2042	23
Minnesota Vikings	5167.10	9	0.2888	5
New England Patriots	6159.14	5	0.1344	32
New Orleans Saints	4316.02	11	0.2636	7
New York Giants	6594.73	4	0.2085	19
New York Jets	2622.70	22	0.2214	16
Philadelphia Eagles	5873.41	6	0.2484	12
Pittsburgh Steelers	5595.07	7	0.1787	25
San Francisco 49ers	3979.96	15	0.1544	29
Seattle Seahawks	4663.76	10	0.2082	20
Tampa Bay Buccaneers	2114.25	29	0.1769	27
Tennessee Titans	1314.24	31	0.2043	22
Washington Commanders	2573.86	24	0.2064	21
N/A	832.05	32	0.0279	33

It should be no surprise that the teams with the most total fans had the most fans in attendance. The teams that ranked top five in total fans filled out the top five in total attendance too. It can be concluded that there is a strong correlation between the number of fans a team has and the number of games those fans go to. From this data, the Green Bay Packers had almost ten million fans at games across the four years, while the Jacksonville Jaguars could not even eclipse one million fans.

However, attendance per fan might be just as good of an indicator of how good a fan base actually is. Teams with small fan bases should not get punished for not having as many fans. That's not something that they have a lot of control over. Instead, looking at the total number of fans at games and dividing that by the number of fans a team has can be just as important in determining who the "best" fans are. By this metric, the Los Angeles Chargers ranked 1st, which saw 36% of Chargers fans go to a game since 2017. There are fans in that 36% that are counted more than once, but if they went to five games, they cover for four other Chargers fans that did not go to a game at all. The Chargers ranked 27th in pure attendance and 32nd in total fans, but based on the number of fans they have, they did very well.

The Dallas Cowboys and New England Patriots continue to make appearances near the top of the rankings, finishing in the top five in both total fans and attendance. However, in terms of attendance per fan, they did not fare nearly as well, finishing 31st and 32nd respectively, only ahead of the group who do not identify a favorite team. Not all teams with large fan bases experienced this issue, as the Chicago Bears, Green Bay Packers, and Minnesota Vikings recorded top ten finishes in both categories. Good job, NFC North fans (except for you Detroit).

## Merchandise Purchased

Purchasing merchandise to support your favorite team is another important aspect of how good a fan base is. Whether it be jerseys, hats, shirts, flags, or anything else, supporting your favorite team even when they aren't playing is a good indicator of how good a fan base is. Similar to attendance, data was collected to see how many United States fans purchased merchandise every year. They were asked if they spent more or less than \$50, and by using those responses, different weights were attributed to the responses. Spending less than \$50 resulted in one point, while spending more than \$50 resulted in 3 points. These values were selected because an average of \$25 is to be expected for any purchase less than \$50, and an average of \$75 spent for any purchase greater than \$50 seemed reasonable. Once again, that number was divided by the total number of fans of each team to obtain a ranking for merchandise purchased per fan.

## Rankings

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Team	Total Score	Total Score Rank	Total Score per Fan	Total Score per Fan Rank
Arizona Cardinals	4815.04	29	0.5294	28
Atlanta Falcons	8727.56	20	0.6354	19
Baltimore Ravens	8844.06	19	0.6606	15
Buffalo Bills	9937.96	16	0.6712	13
Carolina Panthers	7049.58	23	0.5039	32
Chicago Bears	23779.97	5	0.6648	14
Cincinnati Bengals	6187.22	27	0.6131	22
Cleveland Browns	10616.83	15	0.6881	12
Dallas Cowboys	43641.95	1	0.7808	3
Denver Broncos	14146.06	10	0.7274	8
Detroit Lions	9177.46	17	0.5198	30
Green Bay Packers	28984.10	3	0.7659	6
Houston Texans	6483.77	26	0.5394	27
Indianapolis Colts	5842.72	32	0.6569	16
Jacksonville Jaguars	2006.33	28	0.8281	2
Kansas City Chiefs	16481.59	9	0.7152	10
Las Vegas Raiders	12950.63	12	0.9600	1
Los Angeles Chargers	4291.61	30	0.7025	11
Los Angeles Rams	9115.86	18	0.6252	21
Miami Dolphins	7922.44	21	0.6008	24
Minnesota Vikings	11270.61	13	0.6299	20
New England Patriots	33086.40	2	0.7221	9
New Orleans Saints	10621.71	14	0.6487	18
New York Giants	16492.07	8	0.5214	29
New York Jets	7714.73	22	0.6511	17
Philadelphia Eagles	18459.95	6	0.7806	4
Pittsburgh Steelers	24030.09	4	0.7674	5
San Francisco 49ers	13376.56	11	0.5189	31
Seattle Seahawks	16983.06	7	0.7582	7
Tampa Bay Buccaneers	6899.36	25	0.5773	25
Tennessee Titans	3910.09	31	0.6077	23
Washington Commanders	7028.86	24	0.5638	26
N/A	1855.47	33	0.0622	33

Once again, those teams with the largest number of fans scored the best in terms of total merchandise purchased. Based on the predictions, the total score roughly represents how many \$25 were spent on merchandise for any team's fans. For example, a score of 1000 would mean that \$25 was spent one million times. The teams that finished at the top were once again the Dallas Cowboys, New England Patriots, and Green Bay Packers. The teams at the bottom were the Indianapolis Colts, Tennessee Titans, and Los Angeles Chargers.

The other metric for merchandise purchased is the number of estimated fans that spent \$25. A number very close to one means that \$25 was spent by the fan base for every fan in it. Interestingly enough, the Las Vegas Raiders ranked 1st, with an estimated 96% of their fans spending about \$25 on merchandise over the five years. The two other teams that rounded out the top three were the Jacksonville Jaguars, despite finishing 28th in total merchandise purchased, and the Dallas Cowboys. The teams that finished last in this category were the Detroit Lions, the San Francisco 49ers, who finished 11th in total merchandise purchased, and the Carolina Panthers.

The interesting thing about these two rankings when compared to one another is how similar the rankings turn out. 20/32, or 62.5%, of a team's two rankings finished within five spots of one another, and 10/32, or 31.25% finished within two spots of one another. This did not happen in the attendance category, as only 11/32 team's rankings finished within five spots of each other. By these results, it is clear that the total number of fans does not impact merchandise purchased as it does attendance. Fans of any team buy merchandise at a much more consistent level than they go to games.

## Final Scores

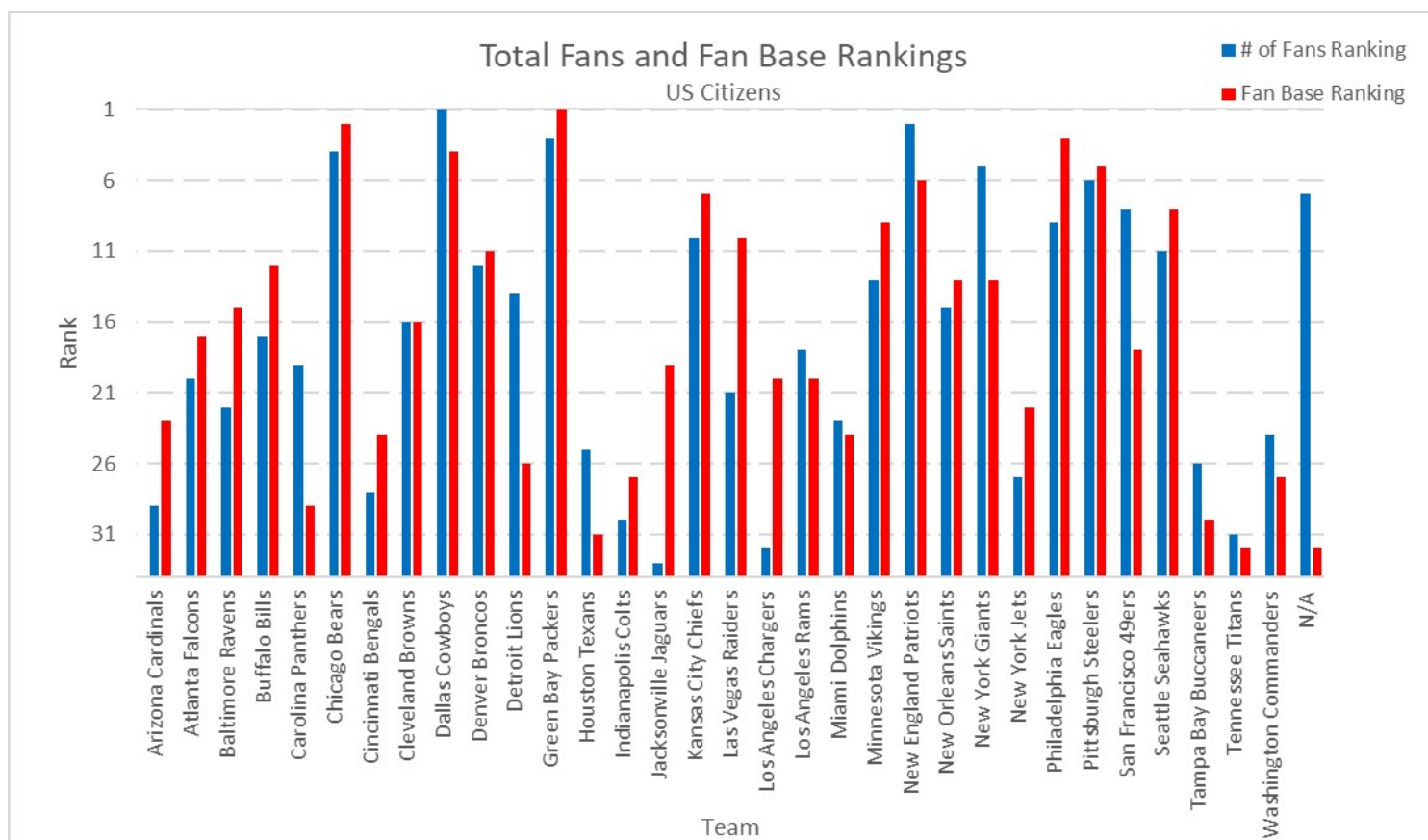
To assess each team's fan base and rank them from best to worst, each team's rankings from the five metrics were added together and sorted from lowest to highest. The team with the lowest sum of ranks is crowned the "best fan base in the NFL", while the team with the highest sum of ranks, well, needs lots of help.

Team	Total Rank
Green Bay Packers	1
Chicago Bears	2
Philadelphia Eagles	3
Dallas Cowboys	4
Pittsburgh Steelers	5
New England Patriots	6
Kansas City Chiefs	7
Seattle Seahawks	8
Minnesota Vikings	9
Las Vegas Raiders	10
Denver Broncos	11
Buffalo Bills	12



<b>New Orleans Saints</b>	T-13
<b>New York Giants</b>	T-13
<b>Baltimore Ravens</b>	15
<b>Cleveland Browns</b>	16
<b>Atlanta Falcons</b>	17
<b>San Francisco 49ers</b>	18
<b>Jacksonville Jaguars</b>	19
<b>Los Angeles Chargers</b>	T-20
<b>Los Angeles Rams</b>	T-20
<b>New York Jets</b>	22
<b>Arizona Cardinals</b>	23
<b>Cincinnati Bengals</b>	T-24
<b>Miami Dolphins</b>	T-24
<b>Detroit Lions</b>	26
<b>Indianapolis Colts</b>	T-27
<b>Washington Commanders</b>	T-27
<b>Carolina Panthers</b>	29
<b>Tampa Bay Buccaneers</b>	30
<b>Houston Texans</b>	31
<b>Tennessee Titans</b>	T-32
<b>N/A</b>	T-32

The teams that finished in the top five overall were the Green Bay Packers, the Chicago Bears, the Philadelphia Eagles, the Dallas Cowboys, and the Pittsburgh Steelers. Teams on the other end of the spectrum included the Washington Commanders and the Indianapolis Colts tied, the Carolina Panthers, the Tampa Bay Buccaneers, the Houston Texans, and in last place, the Tennessee Titans, who even tied with the group who do not identify a favorite team. Surprisingly enough, of the four teams in the AFC South, the team with the least number of fans, the Jacksonville Jaguars, ranked the highest. Do better, AFC South fans...



This graph shows how each team ranked, compared to the total number of US fans they had. Teams with a tall blue bar have lots of fans, while teams with a tall red bar have the best fans. It's interesting to note that only one team, the Cleveland Browns, finished with the same total fan and fan base ranking, and they finished right in the middle of the 32 NFL teams. The Carolina Panthers, the Detroit Lions, and the New York Giants finished much higher in terms of total fan rankings than fan base rankings, while the Jacksonville Jaguars, the Las Vegas Raiders, and the Los Angeles Chargers did the opposite. Teams that have a smaller number of fans but a higher ranking stress quality over quantity. This makes sense, as people that identify as Jacksonville Jaguars fans are probably true fans considering the recent history of the team. Those larger teams that did not score as well have lots of quantity, but the average quality of the fan is not nearly as high. Fan bases and their characteristics change from year to year, meaning that these results could look extremely different down the road as the NFL landscape continues to change.

## Die-Hard or Fair-Weather Fan Bases

To answer the question of if a fan base includes die-hard or fair-weather fans, looking at recent team success is all that is important. Teams like the Tampa Bay Buccaneers and the Los Angeles Rams, who experienced lots of growth over the five-year period, may have more fair-weather or bandwagon fans than most other teams.

Fans of these teams were not abundant, and they were not going to games or purchasing a lot of merchandise until their teams started to perform better. On the other hand, teams like the Dallas Cowboys and Buffalo Bills have some of the most die-hard fans there are. Although they have been relatively successful in recent years, these teams have nothing to show for it, but their fans remain strong. The Buffalo Bills fan base grew at the same pace as the NFL, and the Dallas Cowboys had a five-year percent change of -0.05%, meaning the size of their fan base hardly changed at all. Teams will always face their ups and downs, but seeing fan support through it all is what makes a fan base one of the best.

## Sources

This data was collected and approved for use by SBRnet.

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## About the Author

Keegan Sullivan will start his senior year at Clemson University this fall. He is a mathematical science major with an emphasis in statistics, and he is getting a minor in sports communication as well. Keegan's goal is to be a data analyst for a professional sports team once he gets his degree. <https://www.linkedin.com/in/keegan-sullivan-b1950a215>