Impact of Sports Team's Success on Local Suicides

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ABSTRACT

As an athlete, I was surrounded by sports my entire life. The impact it can have on some people

is more than one can ever imagine. This study is an attempt to quantify the magnitude this impact

as I study the impact of sports team's success on local suicides. I have 10 years of data (2010-

2020) on suicides per year and official win rates of MLB, NBA, and NFL teams to run the

regression.

INTRODUCTION

This paper aims to find the relationship between the performance of sports teams and its impact on death by suicides. Teams from the major leagues of the top 3 sports have been considered for this paper. There have been countless quantifiable occasions in sports where the fans have impacted the sports team. But when we flip the coin, it is assumed that the impact of sports on the lives of the fans is immeasurable. With this paper, I am attempting to quantify the measure. In the case of a success, it would open the doors to quantifying the impact further and much deeper. Thus, this paper is a steppingstone to finding out how much sports really matters to the society.

BACKGROUND

There have not been many researches conducted in the past to determine the effect of sports performance on the suicide rates. Although, one study conducted by Karl Andriessen and Karolina Krysinska revealed that sports team performance is not the only factor affecting suicides. Other factors affecting the rates are age, gender, and marital status. These factors are more significant as compared to sports performance of the team. One limitation of their study is that it was based off of data in the early 2000s when social media was not as popular as it is today. Today, online bantering and fan bases are at their peak thanks to social media and the internet. Cyberbullying is facilitated by such means today and have proven consequences. Anderiessen's and Krysinska's paper's major drawback is that it used data before the concept of cyberbullying was invented. According to a research by Sierra Crosby, the usage of social media has increased from 24% in 2008 to 81% In 2017 resulting in an increase in cyberbullying from 18.7% to 33.8%. There have not been other researches conducted related to this question. Thus,

due to the lack of studies and outdated studies being conducted in the past, this paper will be able to draw clearer conclusions.

DATA

Data from the Centers for Disease Control and Prevention (CDC) about 'Multiple Cause of Death, 1999 -2020' was used to get the official suicide deaths in each state for the respective year. The data was filtered down to only 2010-2020 numbers.

Data for the winning percentages of the sports team was extracted from TeamRankings. TeamRankings is one of the leading and most reliable websites for sports data. Winning percentages of NBA, MLB, and NFL from 2010-2020 were extracted. Moreover, the teams were categorized according to the states they originate from.

Finally, the data was compiled into an Excel sheet and loaded in R to conduct the regression.

PROPOSED METHODOLOGY

$$y_i = \beta_0 + \beta_1 x_i + \varepsilon_i$$

To find whether there is a relationship between the sports team's success and suicide rate in its corresponding locality, I have used a multiple regression model. I have run the model using the state-wise suicide rate for 10 years (2010-2020) and the NBA, NFL and MLB teams' success rates in the last 10 years. I have categorized each sports team into their respective state. This way, the state-wise comparison is easier. In the regression equation ($Y_i = B_0 + B_{1x1} + e_i$.), Y is the dependent variable, B is the intercept and B1 is the regression coefficient which tells us about the magnitude of change in Y, given a change in X.

Deaths by Suicide by State by Year

State ⬇	Year	➡ Deaths ⬆⬇	⇄ Population ⬆⬇	⬅ Crude Rate Per 100,000 ⬆⬇
Alabama (01)	2010	679	4,779,736	14.2
	2011	654	4,802,740	13.6
	2012	724	4,822,023	15.0
	2013	721	4,833,722	14.9
	2014	715	4,849,377	14.7
	2015	750	4,858,979	15.4
	2016	788	4,863,300	16.2
	2017	836	4,874,747	17.1
	2018	823	4,887,871	16.8
	2019	804	4,903,185	16.4
	2020	793	4,921,532	16.1
	Total	**8,287**	**53,397,212**	**15.5**
Alaska (02)	2010	164	710,231	23.1
	2011	143	722,718	19.8
	2012	168	731,449	23.0
	2013	171	735,132	23.3
	2014	167	736,732	22.7
	2015	201	738,432	27.2
	2016	193	741,894	26.0
	2017	200	739,795	27.0
	2018	184	737,438	25.0
	2019	210	731,545	28.7
	2020	204	731,158	27.9
	Total	**2,005**	**8,056,524**	**24.9**

Source: https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=E59DA559E3DE580E04F536212660

NFL Winning Trends – All Games, 2020

Team	Win-Loss Record	Win % ▼	MOV	ATS +/-
Kansas City	16-3-0	84.2%	5.7	-1.2
Buffalo	15-4-0	79.0%	6.8	+4.6
Green Bay	14-4-0	77.8%	8.3	+3.3
Tampa Bay	15-5-0	75.0%	9.1	+5.2
New Orleans	13-5-0	72.2%	8.2	+2.9
Pittsburgh	12-5-0	70.6%	5.5	+1.0
Seattle	12-5-0	70.6%	4.6	0.0
Baltimore	12-6-0	66.7%	8.8	+2.8
Cleveland	12-6-0	66.7%	-0.3	-1.5
Indianapolis	11-6-0	64.7%	5.1	+1.3
Tennessee	11-6-0	64.7%	2.6	+0.4
Miami	10-6-0	62.5%	4.1	+4.7
LA Rams	11-7-0	61.1%	4.0	+1.4
Las Vegas	8-8-0	50.0%	-2.8	-1.6
Arizona	8-8-0	50.0%	2.7	+0.9
Chicago	8-9-0	47.1%	-0.6	+2.1
New England	7-9-0	43.8%	-1.7	-1.6
Minnesota	7-9-0	43.8%	-2.8	-2.9
LA Chargers	7-9-0	43.8%	-2.6	-3.2
Washington	7-10-0	41.2%	-0.1	+3.5
San Francisco	6-10-0	37.5%	-0.9	-1.0

Source: https://www.teamrankings.com/nfl/trends/win_trends/?range=yearly_2020

RESULTS

After running the multiple regression in R, we can see that the coefficients of the variables for 'Football Teams' Win Percent', 'Baseball Teams' Win Percent', 'Basketball Win Percent' and 'Year' are 152.8, 478.4, 1166.1, and 1.2 respectively. We also notice that the 'Basketball Win Percent' is the most significant with a p-value less than 0.001.

Based on the coefficients, we can say that for every 1 % increase in the local team's winning percent, the number of suicides increase by 152 for Football team, 478 for Baseball team and 1166 for Basketball team.

CONCLUSION

Based on the paper, we can conclude that there is a correlation between the sports teams' winning percentages and suicide rates. The coefficients of the variables are not what I had expected. This is because even though there might be a correlation between the independent and dependent variable, it is difficult to say that there is causation. To prove causation, more factors need to be considered which would require getting first-hand data about the suicides.

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