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Softball Umpires Call More Walks than Strikeouts when the Pitcher Plays for a Historically Black College and University

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Abstract

The purpose of this investigation was to determine whether softball umpires were more likely to call walks than strikeouts when the pitcher on the mound played for a historically black college and university (HBCU). As the acronym hints, an HBCU is a United States university that primarily serves individuals from the African American community while a predominantly white institution (PWI) has a student population that is mostly Caucasian. There is a well-developed line of research which has indicated that referee bias is common and suggested that racial factors can influence umpire decisions. However, there is no research which has specifically centered on umpire decision-making in the sport of softball. This study revealed a statistical difference on a criterion that is known as the strikeout to walk ratio. Umpires called a greater proportion of walks than strikeouts when the softball pitcher played for an HBCU relative to when the softball pitcher played for a PWI. These findings were uncovered in two different divisions and over the course of two different seasons which spanned from 2018-2019 through 2019-2020. The uncovered results point to the notion that cultural affiliation and racial factors can adversely influence the decision-making of softball umpires in certain contexts.

Keywords: Referee bias, historically black colleges and universities (HBCUs), softball, race, intercollegiate athletics.

Introduction

One of the main responsibilities of referees is to fairly enforce the rules of play. It is also imperative that referees correctly enforce the rules. However, there is a well-developed line of research on referee bias which has identified instances of officiating error. For example, previous scholarship has revealed that men's basketball referees were more likely to call fouls on the visiting team (Anderson & Pierce, 2009) and indicated that boxing judges were more likely to award extra scorecard points to male boxers whose nationality matched the location of the prize fight (Balmer et al., 2005). The lion share of referee bias literature has centered on European men's football where scholarship by Schwarz (2011) uncovered evidence of compensation tendencies in the Bundesliga League as referees had the proclivity to award an equal number of penalty kicks to each team during a game. Additional research on the men's soccer pitch has found that referees were prone to give yellow cards to the away team in the Football Association (FA) Cup in England (Downward & Jones, 2007) and claimed that crowd density was positively associated with referees making favorable calls for the home team in Union of European Football Associations (UEFA) matches (Goumas, 2014). Collectively, these empirical studies tell us that flawed officiating is not uncommon in men's sports while a subset of the referee bias literature has concentrated on determining why these biases are prevalent.

Previous research has revealed that time variables and social pressure often contribute to incorrect calls being made in the field of play. The findings of Helsen et al. (2006) suggested that the error percentage of referees was the most pronounced during the first 15 minutes of the game in their analysis of the 2002 FIFA World Cup. Scholarship on American football by Snyder and Lopez (2015) provided evidence that referees were more likely to call penalties in the middle of the game and less likely to call penalties at the end of the game. It was back on the soccer pitch that Riedl et al. (2015) reported that referees allowed for additional injury time play if one team was leading in comparison to games where the score was level (Riedl et al., 2015). Research that centered on the effects of time and social pressure by Garicano et. al (2005) found that referees were more likely to award extra stoppage time to home teams who were trailing at the end of regulation to provide extra opportunity for the equalizer goal to be scored. Literature on soccer matches in the Primera Liga by Buraimo and colleagues (2012) suggested the social pressure of home fans had less influence on referee decision making if the soccer pitch was surrounded by running tracks. Pettersson-Lidbom and Priks (2010) studied the effects of the social pressure of fans in the Italian Serie A and the Italian Serie B leagues after spectators were banned due to hooligan violence. Their findings indicated that home teams were penalized more harshly by the referees in games without spectators and found that the home team was penalized less harshly in games where spectators were present (Pettersson-Lidbom & Priks, 2010). These studies on referee bias reveal the effects of time and social pressure are salient, but there is novel evidence that racial factors influence the decisions of referees in a sport that is inherent to the culture that exists in the United States of America.

Baseball is a sport which requires frequent decision-making because home plate umpires have to assess the quality of a pitched ball when a batter does not swing. The scholarship of Hamrick and Rasp (2015) examined more than seven million pitches in Major League Baseball (MLB) over a time period that spanned from 1989 through 2010. Their racialized findings revealed the ethnicity of the pitcher influenced whether the umpire called the pitch a ball or a strike, but the effect sizes were minimal (Hamrick & Rasp, 2015). Similar MLB literature by Tainsky et al. (2015) concentrated on pitched balls from the 1997 season through

the 2008 season. Tainsky and colleagues (2015) found that home plate umpires called a higher percentage of strikes if the pitcher was White as opposed to Black or Hispanic (Tainsky et al., 2015). Analytic research on MLB by Kim and King (2014) examined over 750,000 pitches from the 2008 season through the 2009 season. Results from their study indicated that umpires judged pitches more favorably for White pitchers who had a good reputation in the league relative to Black pitchers who had a good reputation in the league (Kim & King, 2014). Parsons et al. (2011) looked at more than three million pitches from the 2004 season through the 2008 season in MLB. Their research uncovered evidence that: "White umpires, the overwhelming majority, judge minority pitchers more harshly than they judge White pitchers" (Parsons et al., 2011, 1,418). Research by Dix (2020a) examined the number of walks allowed per nine innings (BB/9) from the 2008 season through the 2017 season in college baseball. Dix (2020a) revealed that umpires were more likely to adversely assess pitches and call walks when the pitcher played for a historically black college and university (HBCU) relative to when the pitcher played for a predominantly white institution (PWI). Taken together, this research on referee bias hints that racial factors influence umpire decision making in baseball, but there is a very similar sport in which the extant scholarship on referee bias has been silent.

There have been no empirical studies that solely focused on referee bias in women's softball. This gap in the literature is surprising considering the popularity of softball and because home plate umpires in softball are required to frequently make decisions within the scope of an individual game. The rules for women's college softball closely mirror the rules for men's baseball. Home plate umpires in women's college softball have to decide on whether to call a strike or a ball if the batter does not swing at a pitched ball. Akin to the rules of baseball, a pitched ball that is deemed to be hittable is called a strike by the umpire while a pitched ball that is not deemed to be hittable is called a ball by the umpire. The culmination of calling a pitched ball as a strike or a ball affects the criterion that is known as the strikeout to walk ratio (K/BB). The K/BB ratio reveals how many strikeouts are recorded for each walk that is allowed. The ratio for a team is revealed by dividing the total number of strikeouts by the total number of walks. Differences are often subtle, but higher ratios are considered to be good for the pitching team. For instance, a K/BB ratio of 2.0 means the pitching team secures two strikeouts for every one walk. Conversely, a K/BB ratio of 1.0 means the pitching team secures one strikeout for every one walk allowed. The strikeout component of this ratio can be influenced by swinging strikes, but the walk component of the K/BB ratio is almost solely influenced by the decision-making of the home plate umpire. All things considered, the sport of women's softball needs to be investigated (a) because women's college softball umpires have the ability to impact the results of any individual game, (b) because more attention needs to be devoted to referee bias in women's sports, and (c) because racial factors may be influencing the decisions of home plate umpires.

The purpose of this investigation is to determine whether home plate umpires in women's college softball called a greater proportion of walks than strikeouts when the pitcher played for an HBCU relative to when the pitcher played for a PWI. As alluded to previously, HBCUs are universities that have historically enrolled African American students whereas PWIs are universities in which the student population is heavily comprised of Caucasian students. Scholarship within this niche has found that referees call a disproportionate amount of penalties against HBCU football teams relative to PWI football teams (Dix, 2017), found that more walks are called against HBCU baseball teams in comparison to PWI baseball teams (Dix, 2020a), and indicated that basketball referees call more fouls against HBCU women's

college basketball teams relative to PWI women's college basketball teams at the Division I level (Dix, 2019) and at the Division II level (Dix, 2020b). Therefore, it is based on the extant referee bias scholarship and based on previous empirical research which has revealed that referees disproportionately penalized HBCUs that the following hypotheses are offered. The central hypothesis is that HBCUs will be more penalized than PWIs by umpires on the K/BB ratio for the sport of women's college softball. It is also being hypothesized that HBCU softball pitchers will incur more walks than strikeouts in both Division I and Division II. Furthermore, it is hypothesized that not a single PWI will incur an unfavorable K/BB ratio that is statistically significant. This research also posits that multiple HBCUS will incur an unfavorable K/BB ratio over the course of two different seasons. Collectively, this study sought to statistically determine whether umpires negatively evaluated HBCUs in comparison to PWIs on the fields where women's college softball is being played.

Materials and Method

The data for this study was obtained from https://stats.ncaa.org/rankings/change_sport_year_div. This aforementioned webpage houses statistical data from the National Collegiate Athletic Association (NCAA). Data was extracted by executing a series of different steps on this webpage. First, the sport of "softball" was selected from the first drop-down box. Second, the year of "2019-2020" was selected in the next drop-down box. Third, the roman numeral "I" was selected in the third drop-down box. Fourth, the tab of "team" was then selected from the new pop-up window that emerged. Fifth, the "strikeout-to-walk ratio" criterion was selected in the drop-down box on the far left. Sixth, clicking on the option of "excel" on the right yielded (a) a report that illustrated the strikeout-to-walk ratio for every women's college softball team in Division I for the 2019-2020 season.

This same process was completed an additional three times to (b) create a report that illustrated the strikeout-to-walk ratio for every women's college softball team in Division II for the 2019-2020 season, (c) create a report that illustrated the strikeout-to-walk ratio for every women's college softball team in Division I for the 2018-2019 season, and (d) create a report that illustrated the strikeout-to-walk ratio for every women's college softball team in Division II for the 2018-2019 season. The only difference from the initial report was that the year of "2018-2019" was inputted when appropriate and the roman numeral of "II" was inputted when appropriate in order to change the year of analysis and the division of interest. The four Excel spreadsheets were then merged into one master Excel spreadsheet. It was in this master Excel spreadsheet the data were organized so that each year had their own column and each women's college softball team had their own row. Women's college softball teams who moved out of Division I or Division II or were suspended for an entire season were removed from this analysis. Executing these steps yielded a master Excel spreadsheet that was organized and imported into the Statistical Program for the Social Sciences (SPSS).

Data Analysis

This study used SPSS to analyze the collected data. The average K/BB ratio for each individual team was computed by adding their K/BB ratio for the 2018-2019 season to their K/BB ratio for the 2019-2020 season. Their individual team total was then divided by two

(since two different seasons were being analyzed). Two seasons were analyzed in this research because that was the only publicly available data at the time of this report. This process was completed for a total of 572 women's college softball teams.

A series of different *t*-tests and a *z*-score analysis were completed to compare HBCU softball teams and PWI softball teams. Softball teams were categorized as an HBCU or PWI based on the information that was posted on their university website. This information was double-checked on the HBCU website of https://hbculifestyle.com/list-of-hbcu-schools/ to confirm that each team was accurately categorized. Means and standard deviations were also calculated. The *z*-score analysis was completed to determine probability based on a normal distribution. Statistical significance was set at .05 and a one-tailed conversion table was used to determine the critical value. Utilizing a one-tailed directional hypothesis and a one-tailed conversion table set the critical value at 1.645. It was appropriate to use a *z*-score analysis to flush out data on the associated *p* value and to make comparisons to the mean.

Findings

It was hypothesized that a statistical difference would be observed on the K/BB ratio when comparing softball teams from HBCUs against softball teams from PWIs for Division I and Division II for the two seasons which spanned from 2018-2019 through 2019-2020. As predicted, statistically significant findings emerged after the completion of an independent samples *t*-test whereby cultural affiliation (e.g., HBCU or PWI) was entered as the grouping variable (t (570) = -6.127, $p < .001$). The K/BB ratio for PWIs for these two seasons across these two divisions was 1.86 (sd = 0.85) while the K/BB ratio for HBCUs for these two seasons across these two divisions was 1.09 (sd = 0.51). Stated differently, this finding reveals that umpires are more likely to call walks than strikeouts when the softball pitcher plays for an HBCU relative to when the softball pitcher plays for a PWI.

Statistical analyses concentrated on each individual division for Division I and Division II college softball were then computed. The findings from the independent samples *t*-test in which cultural affiliation (e.g., HBCU or PWI) was inputted as the grouping variable for Division I were statistically significant (t (292) = -4.537, $p < .001$). The mean K/BB ratio for PWIs in Division I college softball from the 2018-2019 season through the 2019-2020 season was 1.89 (sd = 0.86) but the mean K/BB ratio for HBCUs in Division I college softball from the 2018-2019 season through the 2019-2020 season was 1.07 (sd = 0.38). Likewise, the results from the independent samples *t*-test in which cultural affiliation (e.g., HBCU or PWI) was inputted as the grouping variable for Division II yielded results that were also statistically significant (t (276) = -4.107, $p < .001$). The mean K/BB ratio for PWIs in Division II college softball from the 2018-2019 season through the 2019-2020 season was 1.84 (sd = 0.85) whereas the mean K/BB ratio for HBCUs in Division II college softball from the 2018-2019 season through the 2019-2020 season was 1.12 (sd = 0.60). Taken together, HBCU pitchers incurred a worse K/BB ratio than PWI pitchers in both divisions and over the course of two different seasons.

Z-score analyses were completed to determine if any individual college softball teams were penalized at a level that was statistically significant. As Table 1 indicates, the five universities who incurred the worst K/BB ratio in both divisions from the 2018-2019 season through the 2019-2020 season were all HBCUs. Multiple HBCUs incurred a K/BB ratio that was

statistically significant in a bad way while not a single PWI incurred a K/BB ratio that was statistically significant in a bad way. The HBCU of South Carolina State University had the worst K/BB ratio during the 2018-2019 season through the 2019-2020 season in both Division I and Division II for the sport of college softball (M = 0.19; $z_{\text{penalties}}$ = -1.878; p = 0.03). The HBCU of Lincoln University (PA) had the second worst K/BB ratio from the 2018-2019 season through the 2019-2020 season in both Division I and Division II for the sport of college softball (M = 0.29; $z_{\text{penalties}}$ = -1.761; p = 0.04). The HBCU of Miles College had the third worst K/BB ratio from the 2018-2019 season through the 2019-2020 season in both Division I and Division II for the sport of college softball (M = 0.39; $z_{\text{penalties}}$ = -1.645; p = 0.05). All three of these HBCUs suffered a K/BB ratio that was statistically significant (although Miles College incurred a K/BB ratio that was significant right at the .05 level). The HBCU of LeMoyne-Owen College incurred the fourth worst K/BB ratio for the aforementioned period of time albeit not statistically significant (M = 0.41; $z_{\text{penalties}}$ = -1.621; p = 0.053) and the HBCU of Tuskegee University incurred the fifth worst K/BB ratio for the aforementioned period of time although it was not statistically significant (M = 0.53; $z_{\text{penalties}}$ = -1.482; p = 0.069). In sum, only softball teams from HBCUs were penalized at a level that was statistically significant.

Discussion

This study found that home plate umpires called a greater proportion of walks than strikeouts when the softball pitcher played for an HBCU as opposed to a PWI. The uncovered data was unearthed in Division I and Division II from the 2018-2019 season through the 2019-2020 season. Only HBCUs incurred an unfavorable K/BB ratio that was statistically significant. Not a single PWI incurred an unfavorable K/BB ratio that was statistically significant. The paragraphs which follow put forth discussion which illustrate implications from the current research, dissect possible reasons why these findings emerged, illuminate demographic data on HBCU student-athletes, address alternative explanations, highlight the limitations of this study, and offers some general conclusions.

There are practical implications from this study that should be noted. First, the finding that pitchers from HBCU softball teams disproportionately incurred an adverse K/BB ratio that was statistically worse than pitchers from PWI softball teams falls in line with a well-developed research track that has exposed referee bias against HBCUs. Specifically, the results of this study corroborate with previous literature that has revealed referees call more penalties against football teams from HBCUs relative to football teams from PWIs (Dix, 2017), has found that baseball umpires were more likely to call walks when the baseball pitcher played for an HBCU relative to when the baseball pitcher played for a PWI (Dix, 2020a), and has revealed that referees call more personal fouls on women's college basketball teams from HBCUs than women's college basketball teams from PWIs in Division I of the NCAA (Dix, 2019) and in Division II of the NCAA (Dix, 2020b). The softball findings from this study further contribute to the empirical literature which has revealed that differential treatment is being negatively inflicted against HBCUs relative to PWIs. It is imperative for HBCU practitioners in intercollegiate athletics to look closely at this recurring pattern of negative officiating data that has plagued HBCUs. Practitioners at both HBCUs and PWIs can use this data in an effort to challenge the NCAA to investigate their training of officials and to conduct a review on why HBCUs are on the bad end of subjective decision-making data as it

relates to how officials perceive HBCU behaviors within the field of play relative to their PWI counterparts.

There are also research implications from this study that should be noted. It could be argued that one possible reason why HBCUs were more likely to have walks called than strikeouts relative to PWIs is tied to racial considerations. The notion that racial factors influenced how umpires assessed the quality of a pitch as it pertains to the K/BB ratio for this study supports previous empirical research on baseball which has found that racial factors influence whether the home plate umpire called a pitch as a strike or a ball (see Hamrick & Rasp, 2015; Kim & King, 2014; Parsons et al., 2011; Tainsky et al., 2015). The demographic data on NCAA student-athletes further points towards racial factors influencing the uncovered results. For example, it was during the 2019 season that in Division I college softball that across all teams 68% of women's college softball players identified as White females, 24% were listed as female other, while 8% were listed as Black females (NCAA Diversity Data, 2020). Comparatively speaking, it was in the traditionally HBCU conference in Division I known as the Southwestern Athletic Conference (SWAC) that 55% of student athletes identified as Black females, 28% were categorized as female other, while only 17% were categorized as White females (NCAA Diversity Data, 2020). Likewise, it was in the other traditionally HBCU conference in Division I that is known as the Mid-Eastern Athletic Conference (MEAC) that 46% of student-athletes identified as Black, 30% were classified in the female other category, while only 24% of female student-athletes were listed as White (NCAA Diversity Data, 2020). In short, teams in the traditionally HBCU conferences (a) incurred a worse K/BB ratio and (b) these were the same teams who had considerably more Black players. Since it would be reckless to assume that race was the only factor that contributed towards referees calling more walks then strikeouts against HBCU softball players relative to PWI softball players, it is necessary to consider alternative explanations.

There are alternative explanations for these softball results that have to be acknowledged. One alternative explanation is that PWI women's softball teams may have better pitchers than HBCU women's softball teams. It is conceivable that higher profile softball pitchers at PWIs may have more natural ability to consistently pitch strikes with more accuracy than softball pitchers at HBCUs. This variable could not be controlled for because that data is not publicly available and because the range of talent for college softball pitchers varies across the scope of 572 different universities. Another alternative explanation is that game scenarios could have influenced the K/BB ratio data that was unearthed. There are some scenarios in which an intentional walk or pitching around a batter may offer a strategic advantage for the pitching team. The publicly available data did not provide a breakdown on whether the walks that were awarded by umpires were intentional or based on the decision making of the home plate umpire. A different alternative explanation is that swinging strikes and foul balls adversely influenced the K/BB ratio that was uncovered in this study. This certainly influenced the K portion of the K/BB ratio because it did not require the subjective decision making of the umpire. However, the influence of swinging strikes and foul balls should in theory be roughly equivalent for HBCUs and PWIs. All things considered, several factors including race, talent level, and game scenarios likely contributed to an unfavorable K/BB ratio being inflicted upon HBCUs relative to PWIs.

There are three major limitations of this study. First, the demographic data of the umpires could not be obtained. Knowing the racial makeup of the umpires would have allowed for advanced statistical testing. Second, only two years of data were available at the time this

study was completed. Moreover, the data for the 2019-2020 season was limited due to the COVID-19 pandemic. However, utilizing a sample that was comprised of 572 teams who were spread across two different divisions was sufficiently robust. A third limitation was the outlier pitchers who play for a university that does not match their racial identify. For instance, there are a minimal amount of Black pitchers who play for PWIs and some White pitchers who play for HBCUs. This was another variable that was difficult to control for in the current research.

Conclusion

In conclusion, this research filled a gap in the extant literature because it was the first empirical study to focus on how racial factors intersected with referee bias in women's softball. This scholarship puts forth evidence that home plate umpires are evaluating the quality of pitches differently depending on whether the pitcher was affiliated with an HBCU or a PWI, which is in turn influencing the K/BB ratio in women's softball. Video analyses should be used in future HBCU research to support or challenge the quantitative findings which revealed that 0.00% of PWIs incurred an unfavorable K/BB ratio that was statistically significant while multiple HBCUs incurred an unfavorable K/BB ratio that was statistically significant (despite HBCUs representing only 8.39% of the sample). Completing qualitative analyses in person via observing the subjective decision making of umpires on whether to call a softball pitch as a ball or strike would provide additional insight on why this differential data on the K/BB ratio is occurring in the softball fields. The rules of softball dictate that a ball hit between the lines is fair, but observational softball research in the future could help determine if home plates umpires are being fair or foul when it comes to assessing the quality of pitches for women's college softball players from HBCUs.

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Table 1. Mean Number of the Strikeout to Walk (K/BB) Ratio and Z-Scores for the Strikeout to Walk (K/BB) Ratio in Women's Softball for Division I and Division II of the National Collegiate Athletic Association (NCAA) from the 2018-2019 Season through the 2019-2020 Season for the 100 Most Adversely Impacted Teams

	University/Team	Mean Number of the Strikeout to Walk Ratio (K/BB) for Women's Softball Teams from the 2018-2019 Season Through the 2019-2020 Season	Mean Number of the Strikeout to Walk Ratio (K/BB) for Women's Softball Teams in (Z-Scores) from the 2018-2019 Season Through the 2019-2020 Season
1.	**SOUTH CAROLINA STATE (MEAC)**	0.19	-1.87753**
2.	**LINCOLN (PA) (CIAA)**	0.29	-1.76113**
3.	**MILES (SIAC)**	0.39	-1.64472*
4.	**LEMOYNE-OWEN (SIAC)**	0.41	-1.62144
5.	**TUSKEGEE (SIAC)**	0.53	-1.48175
6.	Santa Clara (WCC)	0.53	-1.47593
7.	UTEP (C-USA)	0.54	-1.46429
8.	**GRAMBLING (SWAC)**	0.57	-1.43518
9.	**SHAW (CIAA)**	0.59	-1.41772
10.	Notre Dame de Namur (PacWest)	0.59	-1.4119
11.	Western N.M. (Lone Star)	0.6	-1.40608
12.	Felician (CACC)	0.61	-1.38862
13.	Adams St. (RMAC)	0.63	-1.37116
14.	Colorado St.-Pueblo (RMAC)	0.65	-1.34788
15.	Purdue Fort Wayne (Summit League)	0.66	-1.33042
16.	Southern Utah (Big Sky)	0.7	-1.28385
17.	**MISSISSIPPI VAL. (SWAC)**	0.71	-1.27803
18.	Humboldt St. (CCAA)	0.72	-1.26057
19.	Lafayette (Patriot)	0.72	-1.26057
20.	**DELAWARE STATE (MEAC)**	0.73	-1.25475
21.	**BOWIE STATE (CIAA)**	0.73	-1.25475
22.	Glenville St. (MEC)	0.73	-1.24893
23.	Southwestern Okla. (GAC)	0.73	-1.24893
24.	**CLARK ATLANTA (SIAC)**	0.75	-1.23147
25.	**ELIZABETH CITY ST. (CIAA)**	0.75	-1.23147
26.	East Central (GAC)	0.75	-1.23147
27.	Saint Peter's (MAAC)	0.75	-1.23147
28.	Quinnipiac (MAAC)	0.76	-1.21401
29.	**ARKANSAS PINE-BLUFF (SWAC)**	0.77	-1.20237
30.	Cal St. East Bay (CCAA)	0.77	-1.20819
31.	St. Bonaventure (Atlantic 10)	0.77	-1.20237
32.	Northwestern Okla. (GAC)	0.78	-1.19073
33.	**FLORIDA A&M (MEAC)**	0.79	-1.17909
34.	N.M. Highlands (RMAC)	0.81	-1.1558
35.	**COPPIN STATE (MEAC)**	0.82	-1.14416
36.	Dominican (CA) (PacWest)	0.82	-1.14416
37.	Saint Martin's (Great Northwest)	0.83	-1.13834
38.	Morehead St. (OVC)	0.83	-1.13252
39.	Wayne St. (NE) (NSIC)	0.83	-1.13252
40.	**BENEDICT (SIAC)**	0.84	-1.1267
41.	La.-Monroe (Sun Belt)	0.84	-1.12088

42.	Chaminade (PacWest)	0.85	-1.11506
43.	Clarion (PSAC)	0.85	-1.11506
44.	Simon Fraser (Great Northwest)	0.85	-1.11506
45.	Maryland (Big Ten)	0.85	-1.10924
46.	MSU Moorhead (NSIC)	0.85	-1.10924
47.	New Mexico (Mountain West)	0.86	-1.10342
48.	Furman (SoCon)	0.86	-1.0976
49.	San Fran. St. (CCAA)	0.86	-1.0976
50.	**N.C. A&T (MEAC)**	0.88	-1.08014
51.	**LANE (SIAC)**	0.89	-1.0685
52.	**MARYLAND EASTERN SHORE (MEAC)**	0.89	-1.06268
53.	Shorter (Gulf South)	0.89	-1.06268
54.	Mo. Southern St. (Mid-America Inter.)	0.9	-1.05686
55.	(Mid-America Inter.)	0.9	-1.05686
56.	Barton (Newman Conference Carolinas)	0.9	-1.05104
57.	Omaha (Summit League)	0.91	-1.0394
58.	Cal St. San Bernadino (CCAA)	0.92	-1.03358
59.	Eastern N.M. (Lone Star)	0.92	-1.03358
60.	Goldey-Beacom (CACC)	0.92	-1.02776
61.	**MORGAN STATE (MEAC)**	0.93	-1.01612
62.	Northern Ill. (MAC)	0.93	-1.02194
63.	Barry (Sunshine State)	0.94	-1.00447
64.	Hawaii Pacific (PacWest)	0.95	-0.99865
65.	Chadron St. (RMAC)	0.96	-0.98701
66.	Abilene Christian (Southland)	0.96	-0.98119
67.	**HOWARD (MEAC)**	0.97	-0.96955
68.	Weber St. (Big Sky)	0.98	-0.96373
69.	Western Caro. (SoCon)	0.98	-0.96373
70.	Converse (Conference Carolinas)	0.98	-0.95791
71.	UIW (Southland)	0.98	-0.95791
72.	**JOHNSON C. SMITH (CIAA)**	0.99	-0.95209
73.	Hartford (America East)	0.99	-0.94627
74.	Azusa Pacific (PacWest)	1	-0.94045
75.	St. John's (NY) (Big East)	1	-0.94045
76.	CSU Bakersfield (WAC)	1.01	-0.92881
77.	Canisius (MAAC)	1.02	-0.91717
78.	Cal St. San Marcos (CCAA)	1.02	-0.91135
79.	Mercy (ECC)	1.02	-0.91135
80.	Christian Brothers (Gulf South)	1.03	-0.90553
81.	Concordia (NY) (CACC)	1.03	-0.90553
82.	Elon (CAA)	1.03	-0.90553
83.	Pittsburgh (ACC)	1.03	-0.90553
84.	Rider (MAAC)	1.03	-0.90553
85.	Tex. A&M Int'l (Lone Star)	1.03	-0.90553
86.	Hillsdale (G-MAC)	1.04	-0.88807
87.	Mount St. Mary's (NWC)	1.04	-0.88807
88.	Wis.-Parkside (GLIAC)	1.04	-0.88807
89.	Minot St. (NSIC)	1.05	-0.87643
90.	UC Riverside (Big West)	1.05	-0.87643
91.	Wagner (NEC)	1.05	-0.87643
92.	**PRAIRIE VIEW (SWAC)**	1.06	-0.87061
93.	IUPUI (Horizon)	1.06	-0.87061
94.	Indiana (PA) (PSAC)	1.06	-0.86479
95.	**VIRGINIA UNION (CIAA)**	1.07	-0.85897
96.	**FORT VALLEY STATE (SIAC)**	1.07	-0.85314
97.	**WINSTON-SALEM (CIAA)**	1.07	-0.85314
98.	Cal Poly (Big West)	1.07	-0.85314
99.	Siena (MAAC)	1.07	-0.85314
100.	**ALCORN (SWAC)**	1.08	-0.84732

Note: The teams in capital letters and boldface represent Historically Black Colleges and Universities (HBCUs).
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