Racial Bias in NBA Referees: A Test of Line Movement

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The racial bias phenomenon has been found in a variety of contexts in the academic literature. Whether it is something as serious as deciding how fast to shoot at a crimeal (Correll, Park, Judd, Wittenbrink, Sadler, & Keese, 2007) or as simple as how engaged to be in a conversation (Shelton, Richeson, Salvatore, & Trawalter, 2005), researchers consistently find the presence of racial bias. In sport, racial and ethnic discrimination has been studied for decades. Kahn (1991) found differences between ethnic groups in terms of athlete salaries, positions athletes are slotted into, and athlete popularity. However, examining racial bias within referees is just becoming popular in the literature. In this presentation, referees will be used as an all-encompassing term to mean any person who enforces the rules of an athletic contest. This study will examine racial bias in referees by testing betting line movements after referee assignments are released and examining if market inefficiencies exist in the National Basketball Association (NBA) gambling market when using the racial composition of referees as a betting strategy. Wolfers and Price (2010) suggested NBA referees are an excellent sample to study racial bias in because they are an expert group that has numerous reasons, financial gain and advancement opportunities among them, to be accurate and unbiased in their work behaviors. Additionally, their job performance is consistently monitored and their performance is under constant scrutiny.

Racial bias has been previously posited to be composed of three separate taxonomies: (1) taste-based, (2) statistical based, and (3) implicit discrimination (Bertrand, Chugh, & Mullainathan, 2005). Bertrand et al. (2005) theorized implicit discrimination is caused by implicit attitudes that are “unconscious mental associations between a target (such as an African-American) and a given attribute” (Bertrand et al., 2005, p. 94). The authors suggested using an Implicit Association Test (IAT), where respondents make split second decisions based on pictures, to measure implicit attitudes. Wolfers and Price (2010) and Larsen, Price, and Wolfers (2008) utilized a more practical approach and measured implicit attitudes in sport by examining NBA box scores to determine if referees showed evidence of a racial bias in their calls, and if those calls impacted the game outcome.

Interestingly, Wolfers and Price (2010) found, “the different rates at which fouls are called is large enough that the probability of a team winning is noticeably affected by the racial composition of the refereeing crew assigned to the game” (Schwarz, 2007). Similarly, Parson, Sulaemen, Yates, and Hamermesh (2007) found umpires are more likely to call strikes if they are the same race as the pitcher. Larsen, Price, and Wolfers (2008) analyzed racial bias through the gambling market and found that gamblers could systematically win over 50 percent of their bets by simply betting on the team with more minutes played by white players if the officials were primarily white. In the above-mentioned studies, all the researchers found evidence of implicit bias in referees. This study will take a fresh look at the role implicit attitudes play in sporting contexts by using an alternative method to test the possible existence of racial bias in referees. Betting line movements, a method not previously utilized by implicit bias researchers, will be examined in this two-part study. It should be noted that the authors are not suggesting, or trying to find evidence, that referees are consciously racist. Instead, we are examining the previously described implicit discrimination (Bertrand et al., 2005).

New line movement information opportunities will be used to (1) analyze line movement during the 2007-2008 through 2010-2011 seasons after the referee assignments are released at 9 a.m. and (2) determine if gamblers could still systematically bet the spread around that same timeline by simply knowing the racial composition of the refereeing crew and how it compares to the two participating teams. For the first portion of the study, a gambling information database will be used to examine line movement around the 9 a.m. release time, specifically focusing on the line movement directly after the referee assignments have been released. The direction and amount of movement will be examined to determine if it matches the trend of own-race bias found in referees by Larsen et al. (2008). The average line movement for every game with a racially homogenous refereeing crew will be computed. That average will then
be compared to the average line movement for every NBA game played during that season. This comparison will allow the researchers to determine if the line moves more for contests with racially homogenous crews. If the bookmakers move the spread immediately after the referee assignments are released this would suggest evidence that bookmakers believe referees have inherent biases that can impact the outcome of the games. The two things that typically cause line movement, injury announcements and wagers place by professional gamblers, do not occur around the 9 a.m. Eastern timeline. Injury reports are released later in the day and it is 6 a.m. in Las Vegas when the referee assignments are released, obviously not a prime betting time.

For the second portion of the study, researchers will calculate the accuracy of the spread line at two different time intervals. Unlike the Larsen et al. (2008) study that only examined the final spread line, we will do two separate analyses to determine how accurate the spread was immediately before and after the referee assignments were released. This will allow the authors to be more accurate than Larsen and colleagues (2008) when making inferences on spread accuracy based on the referring assignments because the accuracy of the spread directly before and after referee assignments were released will be measured. This will allow researchers to rule out other factors that could cause the line to move. The frequency of how many times a game finished tied, above, or below the spread in both of the above-mentioned time frames will be observed and a simple comparison will be used to determine if the spread was more or less accurate before or after referee assignments were released. Only games where the entire referee crew is of the same race will be analyzed to ensure that we are studying own-race bias. If racial bias is being accounted for by bookmakers, the spreads should be more accurate after the referee crews are announced.

This presentation is impactful for a variety of reasons. Combining the validated sample with the traditionally accurate betting market (Sauer, 2008) will add another setting and testing method to the racial bias literature. Additionally, the ability to isolate the minute-by-minute line movement of NBA games was not available until the 2007 season, is not present in previous bias literature, and is utilized in this presentation to pinpoint line changes that happen primarily due to the release of the referee assignments. Moreover, given the NBA’s position that there is zero racial bias in their referees (Schwarz, 2007), this study will provide more evidence that racial bias does still exist or that the NBA has corrected their racial bias problem since the Wolfers and Price findings received national media attention. Also, a finding that bookmakers do adjust the lines based on racial bias implications would add more evidence to the efficiency of betting lines. In sum, this research will provide a critical examination of the NBA’s response to the racial bias scandal; whereby, as NBA reporter Henry Abbott noted, the NBA’s position on the research appears to be as “weak as ever” (Abbott, 2010). The authors will conclude with a discussion on the broader implications of the research findings on perceptions around race, sport governance, and social identities.