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ABSTRACT

American Idol: Evidence of Same-Race Preferences?*

This study examines whether viewers of the popular television show, *American Idol*, are racially biased. I find strong evidence for same-race preferences, in particular among black viewers. Featuring more black contestants attracts more black households to tune in to watch the show. And, with more black viewers, a black contestant is less likely to be voted off.

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> The three people I was really impressed with-and they just happened to be black, young female singers-all seem to be landing in the bottom three. They have great voices. The fact that they're constantly in the bottom three-and I don't want to set myself up here-but I find it incredibly racist.
>
> British Rock star Elton John, April 27, 2004

> America, don't forget you have to vote for the talent. You cannot let talent like this slip through the cracks.
>
> *American Idol* show host Ryan Seacrest, on the same date

1 Introduction

More than 30 million Americans watched the television show, *American Idol*, in 2005. The figure amounts to no less than 17 percent of households with television sets in the United States. It is exciting to see young talented amateurs compete with each other to open up a way to a successful musical career. The judgment system is democratic, completely open to the public: anybody can vote for his or her favorite contestant. Unfortunately, as seen from the above quotes, this historically popular show has been charged with racial discrimination. This paper examines whether viewers are allegedly racially biased. First, I test whether the racial composition of *viewers* determines the race of who gets eliminated. Second, I examine whether the racial composition of *contestants* in turn affects viewership.

Becker (1971) discusses three possible sources of racial discrimination: discrimination by employers, employees, and customers. Among them, the last seems to be explanatory of persistence of racial discrimination in the labor markets. This is because customer discrimination can survive market competition as long as consumers are willing to pay premium for goods and services when they are labelled by race in one way or another.[1] For example, some

people might feel more comfortable with a salesman of the same race. Some might prefer houses in the neighborhood of the same race as their own. Holzer and Ihlanfeldt (1998) find that the larger the fraction of minority customers, the higher is the probability that workers from the same racial group will be hired, in particular for jobs where employees contact customers face to face.

As we can see from the above examples, racial discrimination is closely related to same-race preferences. Many studies across a range of disciplines from economics to social psychology have examined racial preferences in various contexts. First, Wong (2003) finds that mating taboo, a distaste for marrying a mate outside one's own racial group, accounts for low interracial marriage rate and that it is a by far more important factor than education and earnings. Racial preferences also appear to affect interpersonal trust. Chen *et. al.* (2005) find that people are more satisfied with physicians in one's own racial group. Hallinan and Williams (1989) examine the interracial friendship formation of high school students and find that they are more likely to choose a same-race peer as a friend. Moreover they find that this racial division is not well explained by observable characteristics.[2] Lastly, Hraba and Grant (1970) replicate the experiment using the doll technique by Clark and Clark (1947) and show that young children prefer the doll of their own race (color), while the original article finds that black children prefer light skin dolls.[3] The authors suggest that black children have recently become more proud of their race. It is a surprising and disappointing finding that even 4 year old kids have same-race preferences. Furthermore, the pattern becomes stronger as they get older.

More directly related to this paper, studies in communication and journalism have found that people are attracted to characters of the same race in the visual media such as television

programs and movies. Dates (1980) finds that black audiences not only favor television shows with black characters, but also evaluate black characters more positively. It is also found that black viewers are more likely to identify themselves with black characters and, in general, viewers enjoy seeing people of their own race on television.[4]

Some recent studies have utilized television viewing patterns, the so-called Nielsen ratings, as a measure of consumer preferences; Kanzawa and Funk (2001) relate the racial composition of basketball teams to the ratings at the metropolitan-area markets. They find that an additional white player on the home team attracts an additional 0.54% of television households in the area. Myers (2005) examines the relationship between local news viewership and the racial composition of employees at the station level. Aldrich *et. al.* (2005) estimate the effect of the quarterback's race on the ratings for professional football games. While these previous studies used the ratings for total households, I use the data on viewership differentiated by race (black and non-black). This is an important contribution to the literature because I can test for the existence of same-race preferences for different races.

The remainder of this paper is organized as follows. Section 2 describes the show and presents crude but strong evidence for racial discrimination among viewers. Section 3 analyzes voting behavior at the aggregate level when there exist same-race preferences. Section 4 presents a behavioral model of viewers. I test whether the racial composition of contestants affects household viewership for different racial groups. Section 5 discusses the dynamics of voting and viewership. The last section concludes.

2 *American Idol*

The television show *American Idol*, originated from the popular British television show *Pop Idol*, is a contest show in which amateur singers compete with each other and viewers determine the best performer. The final winner receives a major record deal, while other contestants often become celebrities depending on their popularity. Since the first season was televised in 2002, there have been four seasons through 2005. The program has been so far very successful; on average, about 7 percent of households watched it in the first season, and it increased to 15 percent in the last season.[5]

Among thousands of celebrity hopefuls, ten or twelve finalists, equally divided between men and women, are selected through early auditions and semifinals. During the final round each contestant performs live songs from a weekly theme, such as Country, Motown, Musicals or Disco. Sometimes a particular singer, such as Elton John or Gloria Estefan, is chosen as a theme. A common theme is given so that contestants are evaluated based on their performance, not their selection of songs.[6]

The show is nationally televised twice a week, Tuesday and Wednesday. After it is aired on Tuesday, anybody, not necessarily one of viewers, can vote for his or her favorite contestants by sending text messages to or calling a toll-free number assigned to each contestant. Callers are allowed to vote as many times as they like for any number of contestants. The contestant with the fewest votes is eliminated. Although the data on votes are not available, it is easy to find that voters on average vote more than once. For example, in the third season, there were more than 65 million votes deciding the final winner, while there were only 25 million viewers, including young children aged 2.[7]

In this study I use the Nielsen ratings data to measure number of viewers of *American Idol*. The Nielsen Media Research measures the nationwide ratings in the United States by an electronic measurement system called the Nielsen People Meter. These meters are placed in a random sample of about 5,000 households, recording what program is being tuned.[8] The data are available for all four seasons from 2002 to 2005, including 82 individual shows.[9] The Nielsen data provide information on the numbers of total households and black households who watched each show. I calculated the number of non-black viewing households.

Some simple illustrations strongly suggest the existence of same-race preferences among viewers of *American Idol*. Table 1 presents the racial composition of finalists and the ratings by seasons, measured as a percentage of households watching the show among households with television sets. While the ratings for non-black households have increased over seasons and doubled from 7.2% in season 1 to 14.7% in season 4, the ratings for black households on average peaked in season 2 followed by season 4, 3 and 1. Interestingly the order of the ratings exactly corresponds to the share of black finalists.

Figures 1-2 show that the percentage of households watching the show among households of each race has a positive relationship to the share of contestants of the same race. Figure 1 shows that black households' ratings increase as the share of black contestants increases; a 10 percent increase in the share attracts an additional 1.4 percent of black households. For non-black households, the ratings are significantly lower in season 1 than the other seasons. After excluding season 1, I find that the same 10 percent increase in the share of black contestants would decrease the ratings by 0.7 percent. A more negative relationship is observed among individual shows in season 1.

The observed relationships in Figures 1-2 provide strong evidence for same-race prefer-

ences, although they are just correlations. First of all, there is no reasonable third factor that could artificially derive these relationships. Second, more importantly, both directions of causality imply the existence of same-race preferences. Why are there more black contestants when more black households watch the show? And why would more black households watch the show when there are more black contestants if there were no same-race preferences? I will examine these questions in more details.

3 Voting

The first test of this paper investigates whether viewers favor contestants of their own race. I consider a simple model of voting for estimation. For simplicity suppose that there are only two candidates (contestants); one is black and the other is non-black. Let N_{rjt} denote the number of voters of race r at show j in season t. Denote $r = 1$ for black and 0 for non-black. Suppose that some voters are racially biased. Let p_{rjt} denote the proportion of households with same-race preferences. I will interpret this parameter as the strength of same-race preferences among population of each race. Then, the number of voters favoring contestant of each race (n_{rjt}) is:

$$n_{0jt} = p_{0jt}N_{0jt} + \theta_{jt}(1 - p_{0jt})N_{0jt} + \theta_{jt}(1 - p_{1jt})N_{1jt} + \omega_{jt}$$

$$n_{1jt} = p_{1jt}N_{1jt} + (1 - \theta_{jt})(1 - p_{1jt})N_{1jt} + (1 - \theta_{jt})(1 - p_{0jt})N_{0jt} - \omega_{jt},$$

where θ_{jt} is the proportion of unbiased voters voting for the non-black contestant. They have different opinions due to different preferences, independent of the race of contestants.

As such the parameter represents the non-black contestant's observed quality relative to the black contestant. The racially-unbiased voters, by definition, would vote according to the observed quality. Lastly ω_{jt} is an unobserved factor for voting, favorable to the non-black contestant, uncorrelated with same-race preferences or contestants' quality.

Since there are only two contestants, the black contestant is voted off if $n_{0jt} > n_{1jt}$. If no one is racially biased, then:

$$n_{0jt} = \theta_{jt}N_{0jt} + \theta_{jt}N_{1jt} + \omega_{jt} = \theta_{jt}N_{jt} + \omega_{jt}$$

$$n_{1jt} = (1-\theta_{jt})N_{1jt} + (1-\theta_{jt})N_{0jt} - \omega_{jt} = (1-\theta_{jt})N_{jt} - \omega_{jt}.$$

In this case, if there are a sufficient number of voters enough to make ω_{jt} ignorable, voting outcome is solely determined by θ_{jt}, independent of the racial composition of voters. However, if there are some voters racially biased, for example, the black contestant is voted off if and only if:

$$(p_{0jt} + (2\theta_{jt}-1)(1-p_{0jt}))N_{0jt} + \omega_{jt} > (p_{1jt} - (2\theta_{jt}-1)(1-p_{1jt}))N_{1jt} - \omega_{jt},$$

where the outcome depends upon the racial composition of voters as well as other things like θ, p's, and ω.

There are four possible cases, as summarized in Table 2. First suppose that $\theta > 0.5$, i.e. unbiased voters observe that the non-black contestant is superior by quality. In this case, only if same-race preferences are sufficiently strong for black voters ($p_1 > \frac{2\theta-1}{2\theta}$), the black is more likely to be eliminated, *ceteris paribus*, as N_0 increases or N_1 decreases. Otherwise

the non-black almost always wins regardless of the racial composition of voters, N_0 and N_1. On the other hand, when the black contestant is observed superior by unbiased voters ($\theta < 0.5$), only if same-race preferences are strong enough for non-black voters ($p_0 > \frac{1-2\theta}{2(1-\theta)}$), the black contestant will be voted off as N_0 increases or N_1 decreases, *ceteris paribus*. If same-race preferences are not sufficiently strong, then the black contestant will win without a big positive noise.

An important implication from the above model is that the probability that the black contestant is voted off should depend upon the racial composition of voters *only if* there are a sufficient number of voters with same-race preferences for at least one race. If the preferences are weak for both races, voting outcome depends upon θ and noise ω only. This implies that, even if I find that the racial composition of voters does not affect voting outcome, it does not mean that there exists no discriminatory voting behavior. My tests for the existence of same-race preferences should be conservative.

Without information on contestants' observed quality, I estimate the reduced-form probit models in which voting outcome depends upon the racial composition of voters. The dependent variable is the indicator for whether a black is eliminated. According to the above theory, I should include the number of voters for each race or the racial composition of voters as key explanatory variables. However, since there is no information available on voters, I proxy the number of voters by the number of viewing households. In this regard the results should be accepted with caution. First, note that viewers are not necessarily voters; those who watched the show might not vote, while those who didn't watch could vote.[10] However I expect that the two variables should be strongly and positively correlated. Second, ideally, we need the count of votes (not voters) because anyone can vote as many times as he or

she likes. The proxy is valid under the assumption that the number of votes per voter is constant across shows.

Recall that the show is broadcast twice a week. Although anyone can vote, actual voters are likely to be viewers of Tuesday shows because voting is allowed for only a few hours immediately after each Tuesday show. As a result, I focus on Tuesday shows while I check Wednesday shows for robustness. The sample is further restricted to those where at least one black contestant remains.

The share of black contestants is included as an explanatory variable because a black contestant is more likely to be eliminated when there are more blacks. For example, if every contestant is equally talented and voters are race blind, then voting outcome is randomly decided and the probability that a black is eliminated should be equal to the share of blacks. For this reason I will test whether the marginal effect of the share of black contestants on the probability is one. If it is greater than one, it suggests that blacks are more vulnerable. However, without information on quality, I cannot tell if this reflects blacks' lower quality in general or discrimination against blacks.

Table 3 shows results. They are consistent with prior expectations. I find that the share of black contestants significantly increases the probability that a black is voted off. The marginal effect is larger than one at the 95 percent significance level, which indicates that black contestants are generally at a greater risk of elimination.

The probability decreases significantly in the number of black households after holding the number of non-black households constant. An increase in the number of black households by 0.55 million (or one standard deviation) decreases the likelihood of a black's being voted off by 32 percent. In column (2), where the racial composition of households is included,

I find that an increase in the share of black households by 0.03 (one standard deviation) decreases the probability by 22 percent.

Next I include the interaction term between the racial composition of viewers and the number of contestants. The idea is that same-race preferences might get stronger or those with same-race preferences are more likely to participate in voting as there are a smaller number of contestants, that is, voting determines higher rankings. The results in column (3) support this hypothesis. The share of black households does not significantly affect the probability until about 5 contestants remain. The effect is substantial when there are only a few contestants. For example, when there remain three contestants, an increase in the share of black households by 0.03 would decrease the probability by 61 percent. Voters seem to be more concerned about the race of the higher ranked.

As mentioned before, I assumed that Tuesday viewers proxy voters. For robustness I run the same regressions by using Wednesday viewers. The results are in columns (4)-(6). As expected, using Wednesday shows, I do not find the same results as in Tuesday shows.

My finding that voters are racially biased is in contrast with the previous findings from another television show *Weakest Link* (Levitt 2004, Antonovic *et al.* 2005) where they find no evidence for racially-discriminatory voting behavior. The main difference between *American Idol* and *Weakest Link*, which I think derives the contrasting results, is anonymity. In the latter show who voted against whom is completely revealed, so a stigma attached to racist views would affect voting decision. As Levitt (2004) explains, "contestants may shy away from targeting blacks on a nationally televised program." On the other hand, in *American Idol*, voters are free to reveal their true preferences under anonymity.[11]

4 Viewing

The second test examines whether the racial composition of contestants determines households' viewership of different races. I consider a behavioral model for estimation. Suppose that household i in racial group r decides whether or not to watch the j-th show in season t, $t = 1$, 2, 3, and 4. Due to data limitations, I focus on two racial groups; $r = 1$ for black and 0 for non-black. Following Aldrich *et. al.* (2005), I specify the utility of consuming (watching) a given show as the following:

$$U_{irjt} = \beta_{r0} + \beta_{r1} Black_{jt} + \beta_{r2} X_{jt} + \alpha_{rt} + \eta_{rjt} + \epsilon_{irjt},$$

where η_{rj} and ϵ_{irjt} represent unobservable preference and show characteristics. Hypothetically the utility depends on the racial composition of contestants, $Black_{jt}$, black contestants' share. If viewers' preferences are race based and if they prefer to watch contestants of the same race, β_{r1} should be positive for black households and negative for non-black households.[12]

Assuming that the ϵ_{irjt}'s are i.i.d. extreme value, the share of households watching the show among the households of race r is:

$$s_{rjt} = \frac{\exp(\beta_{r0} + \beta_{r1} Black_{jt} + \beta_{r2} X_{jt} + \alpha_{rt} + \eta_{rjt})}{\exp(\beta_{r0} + \beta_{r1} Black_{jt} + \beta_{r2} X_{jt} + \alpha_{rt} + \eta_{rjt}) + 1},$$

where the utility of not watching is normalized to zero. Taking the log of the ratio of the

share choosing to watch over the share choosing not to watch yields:

$$\ln(s_{rjt}) - \ln(1 - s_{rjt}) = \beta_{r0} + \beta_{r1} Black_{jt} + \beta_{r2} X_{jt} + \alpha_{rt} + \eta_{rjt},$$

which can be estimated by the ordinary least squares method. The share of households watching each show can be calculated from the Nielsen ratings.

A vector of control variables X_{jt} includes observable show characteristics, such as total number of contestants, the indicators for the final week and final show (season finale), and the indicator for Wednesday show. These variables are included to control for factors other than race that would determine a show's popularity. It seems reasonable to suppose that more households would watch the show as it approaches the season finale or on Wednesdays when the contestant who is eliminated is announced.

I include time trend variables α_{rt} because the show gets increasingly popular over seasons for both racial groups. Note that these variables play a role of season-specific fixed effects since the show is repeated as many as 22 times within a season. The specification can be interpreted as the least squares dummy variable model, allowing for unobserved heterogeneity across seasons.

Table 4 presents results. Columns (1) and (2) show that a 10 percent increase in the share of black contestants decreases non-black households' ratings by about 3.4 percent and increases black households' ratings by 4.4 percent.[13] Evaluated at the average rating, this translates into about 385,000 households for the non-black (0.4 percent of non-black television households) and 98,000 households for the black (0.8 percent of black television households).

Other results are consistent with expectations. First, as the number of surviving contestants is reduced, more households tend to watch the show. This makes sense because the show gets more exciting as the season proceeds toward the end. For the same reason the ratings get significantly higher during the final week and season finale. Second, the season-specific intercepts are significant, implying that the ratings are on average different over seasons. As seen in descriptive statistics, the ratings for non-black households have consistently increased over seasons, while those for black households are non-monotonic. However, for both racial groups, the ratings in the first season are significantly lower.

Next, in columns (3) and (4), I include the lagged dependent variable to account for the possibility that households' viewing habits are persistent over time. For black households, the results are similar. But, for non-black households, the estimate for the effect of the share of black contestants becomes statistically insignificant, while it is still negative.[14] For both, viewing patterns show significant inertia.

In columns (5) and (6), I allow for nonlinearities of the share of black contestants. For non-black households, an increase in the number of black contestants decreases the ratings. The effects are almost monotonic. For both black and non-black households the largest marginal effect is found between 0 and 1. Adding one black into a pool of non-black contestants decreases the ratings for non-black households by about 1.5, but increases the ratings for black households by 5.2. The last two columns show the results when we account for inertia. There is no significant effect of the number of black contestants on non-black households' viewership. On the other hand I find that having more black contestants attracts more black households.

Table 5 shows the results for Tuesday and Wednesday shows, separately. Overall, the

results are similar as before. It is notable that the racial composition of contestants affects black viewership more significantly for Wednesday shows. It seems that black households are more responsive to the share of black contestants when voting outcome is announced.

5 Dynamic Causation

Until now I have found that the racial composition of viewers determines the race of who is eliminated, while the racial composition of contestants affects viewing patterns. These two findings are dynamically related; the racial composition of Tuesday viewers in the previous week determines the current week's share of black contestants through the voting mechanism. The share of black contestants in turn affects the racial composition of viewers. The dynamic process implies that the share of black contestants might be endogenous with regards to viewing patterns. To address this concern, I estimate the following simultaneous equations by the two-stage least squares estimation:

$$\ln(s_{rjt}) - \ln(1 - s_{rjt}) = \gamma_{r0} + \gamma_{r1} Black_{jt} + \gamma_{r2} X_{jt} + season_{rt} + \nu_{rjt},$$

$$Black_{jt} = \delta_0 + \delta_1 X_{jt} + \delta_2 Z_{j-1,t} + season_t + u_{jt},$$

where *season* is the season-specific effect. The variables in X are defined as the same as before. The lagged dependent variable is also included. The simultaneous-equation estimation allows the share of black contestants to be possibly endogenous.

The second equation is a modified linear version of the previous voting outcome equation. The dependent variable is the share of black contestants rather than the indicator of whether

a black is eliminated. $Z_{j-1,t}$ represents instrumental variables. I use the share of black households in the previous show (week) and its interaction with number of contestants as instrumental variables for the share of black contestants in the current show. I assume that $Z_{j-1,t}$ is uncorrelated with u_{jt} as it is predetermined. Since the first-stage equation is meaningful only for Tuesday shows, I restrict the sample into those shows.[15]

Table 6 presents the results from the two-stage least squares estimations. The first-stage results are consistent with the results from the probit model of voting outcome. As there are more black households in the previous week, the share of black contestants in the current week is likely to be higher. This is because a black contestant is less likely to be eliminated in the previous week. As before, the effect of the racial composition of households on the share of contestants is significant only if there remain a relatively small number of contestants (less than 6). The instrumental variables are significant in the first-stage equation, accounting for about 30 percent of the R squared.

The second-stage results for non-black and black viewership are presented in column (1) and (3), respectively. I find that, after controlling for the endogeneity, there is no significant effect of the racial composition of contestants on non-black viewership. The sign is even reversed. However the share of black contestants still significantly increases black households' viewership. The estimate shows that it was slightly underestimated without accounting for the dynamics of voting and viewership.

In sum, the results in this section confirm the presence of same-race preferences in both voting and viewership, in particular for black households. Voting and viewing affect each other dynamically, in particular for higher rankings. This two-way causality would generate a multiplier effect; as more black contestants are featured, black households are more likely

to watch the show, and more black viewers, perhaps those with same-race preferences, participate in voting. As a consequence, a black is less likely to be eliminated and, if so, the share of black contestants is more likely to increase in the next week. The racial composition of those who are eliminated in the early stages would determine the direction of the multiplier effect.

6 Conclusion

This paper examined viewership and voting patterns in the popular television show, *American Idol*. In principle, the contestants must be evaluated solely based on their performance and talent, which are supposed to be independent of race. But I found strong evidence for the existence of same-race preferences. First, voting behaviors are racially biased. A black contestant is less likely to be voted off as there are relatively more black viewers. This pattern is only significant when it comes down to a relatively small number of the final contestants. Second, I also found that featuring more black contestants significantly increases black viewership but decreases non-black viewership. After accounting for dynamic feedback between voting and viewership, I still found that black households are more likely to watch the shows when there are more black contestants.

Although same-race preferences might be thought of a root of racial discrimination, it is controversial whether these pure preferences among television viewers would translate into actual discrimination, for example, in the labor market where preferences should be reconciled with economic stakes. On the other hand it is also true that we have not found any reasonable cause but pure preferences for some social phenomena like hate crimes and

taboos against interracial marriage. Clearly more empirical studies are needed to assess the relationship between racial preferences and discrimination in various contexts.

Notes

[1]Empirical evidence is ample in the sports markets. It has been found that the racial composition of basketball teams affects game attendance or all-star vote in baseball depends on race of players. See Kahn (1991) for a literature survey.

[2]Similar patterns exist in college students' dating partner selection in a speed dating experiment (Fisman *et. al.* 2004).

[3]The findings in Clark and Clark (1947) were cited in Brown vs. Board of Education in 1954 as evidence of adverse effects of school segregation.

[4]Refer to, e.g., Greenberg *et. al* (2002) and Bryant and Thompson (2002) for a survey of the literature.

[5]Historically the most watched program was *M*A*S*H Special* on February 28, 1983. The household rating was 60.2%. *Super Bowl* in 1982 recorded 49.1%

[6]That contestants sing songs from a given genre is important for the purpose of this paper because one's favorite genre, for example jazz, is not likely to be independent of race.

[7]It is reported that each major phone company like Verizon and SBC received about 100 million additional calls due to the program (*USA Today*, May 27, 2003). Some fans use a speedy voting software, which demonstrates the show's increasing popularity.

[8]About 12 percent of the sample is black, which is consistent with the census data. Refer to `www.nielsenmedia.com` for more information.

[9]I excluded one week because a contestant was disqualified. The sample size is small, but remember that millions of people are involved with each observation.

[10]Willingness to vote would depend upon the intensity of preferences, access to phones, and value of time, which might vary with race.

[11]Studies in psychology found that in performance evaluations raters score ratees of the same race significantly higher (Kraiger and Ford 1985). Also in political science it has been found that blacks are more likely to participate in voting if there is a black candidate and support candidates of their own race (Kaufmann 2003).

[12]Unlike Aldrich *et. al.* (2005), I ignore taste for diversity, which seems to be innocuous in the current context because about 30 to 40 percent of finalists are blacks. The figure is by far higher than black population's percentage in the society (12%). This is consistent with the finding that black characters are over-featured on prime-time television (Bryant and Thompson 2002).

[13]For intuitive interpretation I converted the estimates to the effects of the share of black contestants on ratings.

[14]The fact that we find no strong evidence of non-black households' discriminatory viewership might reflect that non-black households include both white and other race households.

[15]I ran the same regression on Wednesday shows, but found no significant effect of the racial composition of viewers.

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Table 1: Descriptive Statistics of Viewership[1]

	Season 1 (2002)	Season 2 (2003)	Season 3 (2004)	Season 4 (2005)
No. of finalists	10	12	12	12
No. of black finalists	3	5	4	4
Non-black ratings	7.18	11.59	13.03	14.67
	(2.18)	(1.91)	(1.40)	(1.14)
Black ratings	11.63	20.32	18.22	18.32
	(2.35)	(4.02)	(3.08)	(1.57)
No. of non-black households	6.71	10.89	12.45	14.15
	(2.08)	(1.80)	(1.34)	(1.10)
No. of black households	1.45	2.59	2.34	2.41
	(0.29)	(0.51)	(0.40)	(0.21)
No. of observations	16	22	22	22

[1] Standard deviations in parentheses. Number of households is in millions.

Figure 1: Black Ratings and Share of Black Contestants

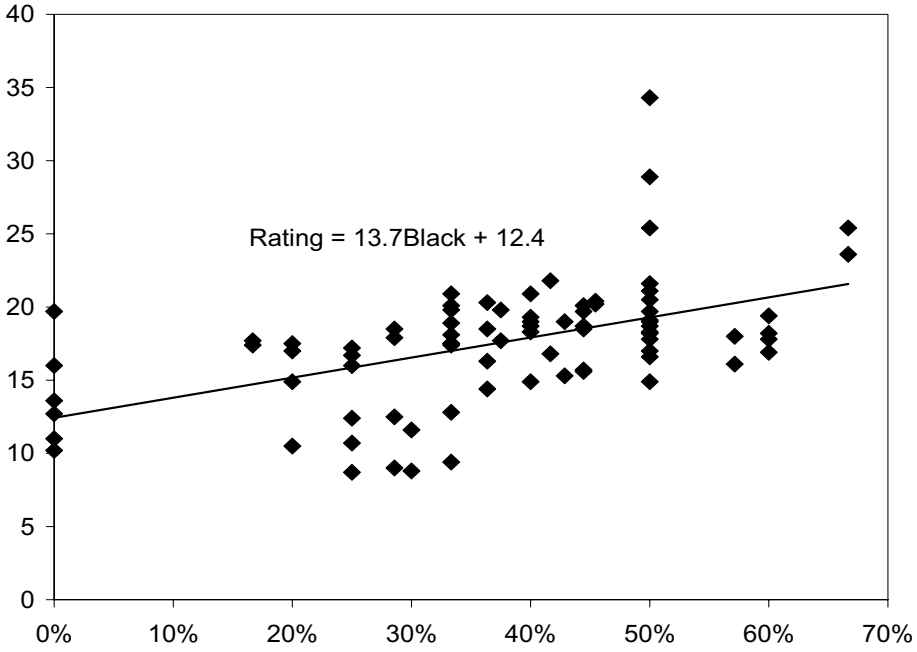

Figure 2: Non-black Ratings and Share of Black Contestants

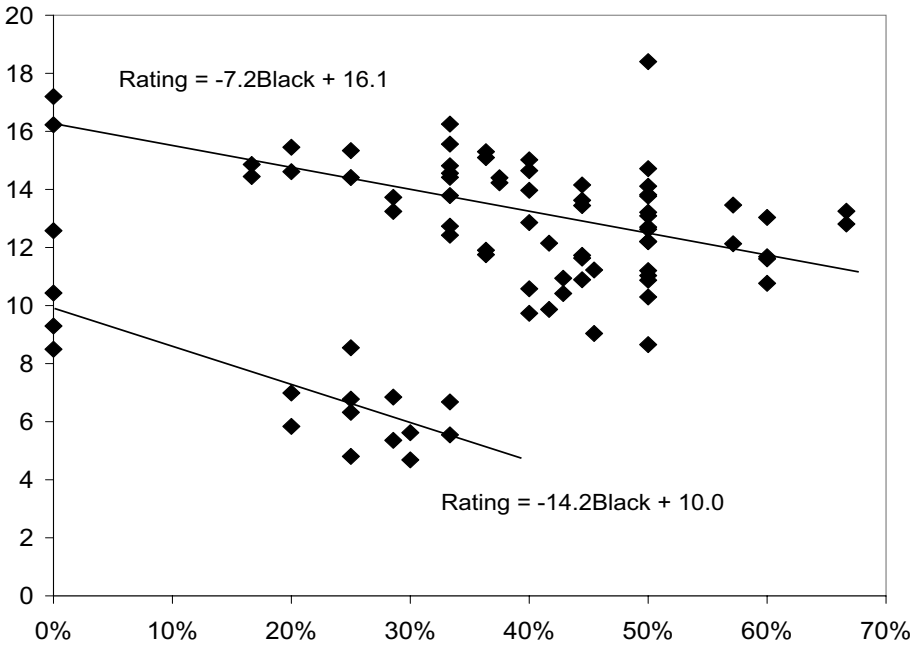

Table 2: Voting Model
(Probability that the black contestant is voted off)

Case	Prediction
(1) $\theta > \frac{1}{2}$, $p_1 > \frac{2\theta-1}{2\theta}$	As N_0 increases or N_1 decreases, the probability will increase
(2) $\theta > \frac{1}{2}$, $p_1 < \frac{2\theta-1}{2\theta}$	Non-black almost always wins, regardless of N_0 and N_1
(3) $\theta < \frac{1}{2}$, $p_0 > \frac{1-2\theta}{2(1-\theta)}$	As N_0 increases or N_1 decreases, the probability will increase
(4) $\theta < \frac{1}{2}$, $p_0 < \frac{1-2\theta}{2(1-\theta)}$	Black almost always wins, regardless of N_0 and N_1

Table 3: Voting[1]

(The dependent variable is whether a black contestant is eliminated)

	Tuesday			Wednesday		
	(1)	(2)	(3)	(4)	(5)	(6)
Share of black contestants	2.56	2.43	3.11	1.47	1.38	1.43
	(0.75)	(0.74)	(1.16)	(0.72)	(0.70)	(0.69)
	[3.21]	[2.95]	[2.72]	[4.52]	[2.62]	[3.94]
No. of contestants	-0.02	-0.01	-0.47	-0.03	-0.03	-0.26
	(0.02)	(0.02)	(0.21)	(0.03)	(0.03)	(0.15)
	[-0.76]	[-0.59]	[-2.90]	[-2.01]	[-1.76]	[-2.35]
No. of black households	-0.58			-0.10		
	(0.21)			(0.22)		
	[3.58]			[-1.27]		
No. of non-black households	0.03			-0.02		
	(0.05)			(0.04)		
	[0.58]			[-0.67]		
Share of black households		-7.56	-28.51		1.07	-6.89
		(3.69)	(11.79)		(3.33)	(6.43)
		[-2.50]	[-4.02]		[0.76]	[-1.55]
No. of total households		-0.06	-0.06		-0.02	-0.01
		(0.02)	(0.03)		(0.04)	(0.04)
		[-2.23]	[-1.95]		[-1.40]	[-0.59]
Share of black households			2.74			1.29
× No. of contestants			(1.30)			(0.82)
			[2.91]			[1.96]
R squared	0.181	0.172	0.241	0.112	0.112	0.157

[1] No. of observations is 37. Marginal effects at means are calculated. Robust standard errors are in parentheses, adjusted by clustering for seasons. Z statistics are in brackets.

Table 4: Viewership[1]

(The dependent variable is $\ln(s_{rjt}) - \ln(1 - s_{rjt})$)

	(1) Non-black	(2) Black	(3) Non-black	(4) Black	(5) Non-black	(6) Black	(7) Non-black	(8) Black
Share of black contestants	-0.370	0.569	-0.103	0.621				
	(0.175)	(0.177)	(0.121)	(0.119)				
Viewership (previous week)			0.715	0.702			0.657	0.722
			(0.162)	(0.098)			(0.182)	(0.084)
One black					-0.231	0.296	-0.072	0.325
					(0.098)	(0.121)	(0.082)	(0.061)
Two blacks					-0.321	0.311	-0.119	0.412
					(0.099)	(0.141)	(0.091)	(0.079)
Three blacks					-0.362	0.256	-0.118	0.402
					(0.115)	(0.152)	(0.104)	(0.093)
Four blacks					-0.302	0.364	-0.086	0.499
					(0.141)	(0.187)	(0.134)	(0.129)
Five blacks					-0.388	0.434	-0.189	0.671
					(0.171)	(0.226)	(0.155)	(0.174)
Number of total contestants	-0.017	-0.006	-0.014	-0.012	-0.007	-0.021	-0.012	-0.040
	(0.005)	(0.007)	(0.005)	(0.006)	(0.013)	(0.016)	(0.014)	(0.013)
Wednesday	-0.114	0.026	-0.012	0.023	-0.114	0.026	-0.020	0.023
	(0.027)	(0.036)	(0.026)	(0.027)	(0.025)	(0.037)	(0.026)	(0.027)
Final week	0.066	0.157	0.049	0.112	-0.019	0.172	0.018	0.147
	(0.082)	(0.070)	(0.044)	(0.040)	(0.078)	(0.077)	(0.053)	(0.048)
Final show	0.282	0.302	0.154	0.223	0.282	0.302	0.164	0.221
	(0.147)	(0.122)	(0.083)	(0.068)	(0.147)	(0.099)	(0.087)	(0.056)
Season 2	0.693	0.520	0.148	0.047	0.677	0.597	0.185	0.089
	(0.061)	(0.082)	(0.109)	(0.086)	(0.059)	(0.084)	(0.109)	(0.075)
Season 3	0.819	0.407	0.154	0.012	0.786	0.470	0.186	0.055
	(0.061)	(0.082)	(0.146)	(0.072)	(0.055)	(0.083)	(0.148)	(0.068)
Season 4	0.896	0.520	0.181	0.089	0.881	0.520	0.226	0.088
	(0.052)	(0.063)	(0.156)	(0.073)	(0.052)	(0.070)	(0.172)	(0.065)
Constant	-2.399	-2.178	-0.562	-0.682	-2.295	-2.203	-0.668	-0.658
	(0.071)	(0.076)	(0.433)	(0.233)	(0.089)	(0.119)	(0.428)	(0.185)
R squared	0.878	0.761	0.922	0.883	0.896	0.771	0.927	0.895
No. of observations	82	82	74	74	82	82	74	74

[1] In columns (3) and (4) those with no black contestant are the reference group. Robust standard errors in parentheses.

Table 5: Viewership by Date[1]

(The dependent variable is $\ln(s_{rjt}) - \ln(1 - s_{rjt})$)

	Tuesday				Wednesday			
	Non-black	Black	Non-black	Black	Non-black	Black	Non-black	Black
Share of black contestants	-0.307	0.308	-0.100	0.340	-0.434	0.831	-0.146	0.915
	(0.167)	(0.199)	(0.102)	(0.135)	(0.308)	(0.260)	(0.240)	(0.186)
Viewership (previous week)			0.742	0.553			0.584	0.632
			(0.121)	(0.188)			(0.268)	(0.129)
Number of total contestants	-0.004	0.004	-0.007	-0.007	-0.029	-0.017	-0.024	-0.016
	(0.006)	(0.007)	(0.004)	(0.006)	(0.008)	(0.009)	(0.009)	(0.010)
Final week	0.138	0.192	0.081	0.112	0.276	0.424	0.187	0.360
	(0.074)	(0.075)	(0.040)	(0.052)	(0.138)	(0.134)	(0.102)	(0.078)
Season 2	0.611	0.766	0.104	0.271	0.775	0.274	0.276	-0.027
	(0.077)	(0.071)	(0.095)	(0.167)	(0.092)	(0.099)	(0.211)	(0.109)
Season 3	0.792	0.665	0.135	0.233	0.846	0.149	0.267	-0.083
	(0.074)	(0.070)	(0.112)	(0.151)	(0.096)	(0.102)	(0.259)	(0.086)
Season 4	0.816	0.687	0.144	0.249	0.976	0.352	0.329	0.065
	(0.062)	(0.058)	(0.118)	(0.145)	(0.080)	(0.072)	(0.295)	(0.077)
Constant	-2.465	-2.336	-0.530	-1.013	-2.447	-1.993	-0.878	-0.806
	(0.067)	(0.077)	(0.336)	(0.432)	(0.125)	(0.113)	(0.734)	(0.259)
R squared	0.921	0.915	0.967	0.940	0.875	0.719	0.900	0.831
No. of observations	41	41	37	37	41	41	37	37

[1] Robust standard errors are in parentheses.

Table 6: Two Stage Least Squares Estimation[1]

	(1) 2nd stage Non-black viewership	(2) 1st stage Share of black contestants	(3) 2nd stage Black viewership	(4) 1st stage Share of black contestants
Share of black contestants	0.259		0.471	
	(0.192)		(0.182)	
Viewership (previous week)	0.824	-0.223	0.539	-0.186
	(0.126)	(0.220)	(0.171)	(0.203)
No. of contestants	-0.007	-0.593	-0.007	-0.595
	(0.004)	(0.191)	(0.006)	(0.193)
Final week	0.118	-0.099	0.130	-0.103
	(0.040)	(0.086)	(0.053)	(0.084)
Season 2	-0.050	0.362	0.243	0.336
	(0.125)	(0.162)	(0.138)	(0.151)
Season 3	-0.027	0.429	0.206	0.407
	(0.141)	(0.177)	(0.123)	(0.171)
Season 4	0.045	0.284	0.247	0.257
	(0.126)	(0.194)	(0.125)	(0.183)
Share of black households (previous week)		6.186		8.012
		(2.207)		(2.437)
Share of black households (previous week) × No. of contestants		-0.706		-0.708
		(0.232)		(0.234)
Constant	-0.391	4.846	-1.071	6.549
	(0.315)	(2.133)	(0.412)	(1.858)
R squared	0.952	0.744	0.938	0.742

[1] No. of observations is 37. Robust standard errors are in parentheses.