# Supplemental Materials for "Who Shapes the Law? Gender and Racial Bias in Judicial Citations"

Additional analyses and discussions can be found at the Harvard Dataverse site, referred to hereafter as the Dataverse Appendix. The following are included on Dataverse.

**OA1. Discussion of Variable Coding & Descriptive Statistics**

*Dependent Variable*

<u>Number of citations</u>: Following the lead of others who have studied judicial citations (Landes, Lessig, and Solimine 1998), our dependent variable focuses on discretionary decisions by out-of-circuit judges to cite a case as a measure of that opinion's influence. We considered but rejected alternatives: the total number of subsequent US Courts of Appeals citations, the number of subsequent citations within the circuit that decided the original case, or the total number of citations across all courts. Within-circuit citations are generally binding when the facts and issues overlap significantly with the initial precedent, minimizing the discretion of the potential citing judge. Finally, we chose to focus on cites by court of appeals judges because, as one law clerk noted in an interview with one of the authors, the US Court of Appeals is a small community, and the judges are all aware of the identities of their colleagues. The same could not be said for other judges outside of the courts of appeals (e.g., state courts judges or U.S. district court judges from outside of the circuit).

As noted in the text, our dependent variable is a count of the number of times the initial opinion was subsequently cited in decisions by other circuits in the subsequent five years. We used the fixed five-year period for several reasons. First, this controlled for the age of the precedent. Second, since our decisions were decided between 2009-2016, we could collect the subsequent citations for the full period for every decision.

It is possible, of course, that it may take some time after the initial decision is published but before lawyers and judges outside the circuit become aware of the case and refer to it in briefs and legal opinions. As a robustness check, we randomly selected 20 cases per circuit, or 240 case, amounting to just over 10 percent of our estimation sample. We recoded the number of

subsequent out-of-circuit citations for that sample, shifting the starting window by three months after the initial decision. The Pearson correlation coefficient between this measure and the one we used in the analysis was over 0.96. Moreover, of the 26 cases with different values, the measure we used was actually greater in nine instances. In fact, one case was cited just 16 days after the decision date.

While Hinkle and Nelson (2018) used Shephard's Citations in Lexis, we used Westlaw Next to identify subsequent citations. As a robustness check, we took a random sample of 30 cases from our estimation sample and replicated the measure using Shephard's Citations. That measure was highly correlated (r=0.983) with our dependent variable.

Additionally, we do not distinguish between positive and negative treatments of precedent for several reasons. First, the discretionary nature of these citations means that judges are free to ignore any out of circuit precedent that they wish. If a judge opts to refer to an outside precedent, this shows the citation is important enough to mention, regardless of the type of treatment. Second, existing work finds that negative citations to external circuit opinions are rare (see Hinkle and Nelson 2018). Indeed, in our sample of 30 cases, only 14.3 percent of the cites were negative. Most importantly, our dependent variable that included positive and negative cites was highly correlated (r=0.94) with the count of positive cites in the small sample of 30 cases.

### *Opinion Quality and Engagement with Precedents*

<u>*Deep Cites*</u>: In earlier work on citations to a sample of U.S. Courts of Appeals' immigration cases, Hume (2009) found that the language used in the cited opinion can encourage citations to it. Specifically, his analysis revealed that the degree to which an opinion used language that quoted from case law, statutes, administrative regulations or other authority, the more likely the opinion would be cited. Our analysis builds on this idea to use a measure that focuses on the

degree to which the opinion author engages with existing precedents in the reasoning. Specifically, we rely on Westlaw's "deep cites" indicator which counts each time the opinion author discusses a precedent with at least two paragraphs. If the opinion uses a series of "string citations" but does not discuss (with at least two paragraphs) a single case in that string, then the opinion is scored a "zero" on this indicator. To summarize, this measure requires a deeper discussion of a precedent; it is not simply a count of citations. Unlike Hume's work, this indicator more squarely captures the pull of stare decisis by counting depth of treatment of previous precedents. In doing so, we believe that it measures an important element of reasoning quality in the opinion.

***Measures of Judge Visibility and Elite Status***

<u>*Ties to Supreme Court and Legal Academy*</u>: Drawing from and expanding on previous work (Holmes 2019), we created a proxy measure for judicial traits that are indicative of prestige and elite status with a factor analysis of four components: (1) whether the majority opinion author was a former U.S. Supreme Court clerk, (2) whether the majority opinion author was a feeder judge for Supreme Court clerks (specifically, the number of their former law clerks that would go on to serve as Supreme Court clerks, prior to the beginning of our dataset in 2009), (3) whether the majority opinion author had been a tenure-line law professors at an elite (Top 15) law school, and (4) the number of years prior to the case in which they were employed in a tenure-line position as a law professor. The index is highly reliable, with one eigenvalue over one (1.78), with the next highest eigenvalue less than 0.15. The factor loadings range between 0.56 and 0.84. These 4 factors tap into dimensions of prestige that could enhance a judge's visibility with other judges and law clerks. Supreme Court clerkships are highly sought after and signal inclusion in the legal elite. Tenure track law school professorships are also prestigious and

give those individuals the opportunity to publish research in law reviews that publicize their reasoning skills and establish their professional expertise.  To assess whether a judge was a "feeder" for Supreme Court clerkships, we used a database provided by the Court's Public Information Office. The dataset included information regarding each clerk's lower court clerkships, including the name of the judge(s) and courts.

*Elite law school*: A judge attended an elite school if they graduated from Yale, Harvard, Stanford, Chicago, Columbia, California-Berkeley, Pennsylvania, Michigan, NYU, Cornell, Virginia, Duke, Northwestern, UCLA, and Texas (Szmer and Ginn 2014). We anticipated a positive coefficient, both because law school quality could serve as a proxy measure for legal reasoning and writing skills and it may serve as a reputational heuristic for colleagues.

*Judge tenure*: We logged the number of years the judge served in the U.S. Courts of Appeals because we expect diminishing marginal effects as tenure increases. The results of the hypotheses tests, as well as the statistical relationship between tenure and subsequent cites, do not change when we use the untransformed measure. We expected a positive and significant coefficient because judicial reasoning and writing skill could improve with experience, as would other judges' familiarity with the opinion author. We also estimated the models using three different versions: (1) a dummy variable coded one if the judge was in their first or second year to account for "freshman effects"; (2) the unlogged count of years served; and (3) the unlogged count plus a squared term to account for a potential parabolic relationship. Like the logged version of tenure presented in the text, none of these alternative measures was statistically

significant. Similarly, the results of the alternative specifications were all consistent with the presented results.

***Measures of a Case's Legal Salience and Importance***

*Amicus curiae*: Amicus curiae briefs are filed much less often in the U.S. Courts of Appeals than in the U.S. Supreme Court, so their presence signals that the case involves a salient legal question beyond the interests of the parties involved in the case. Because salient and important cases should receive more discretionary citations, the coefficient should be positive.

*Constitutional case*: Cases that present constitutional questions signal the case's legal importance and may receive more attention from judges outside the circuit because they present a federal question.

*Civil rights and liberties*: A long line of research has established that civil rights and liberties cases are highly salient for judges and thus should be more likely to be cited.

*Criminal case*: Szmer, Christensen, and Grubbs (2020) found a positive relationship between criminal issues and the number of external citations to U.S. Courts of Appeals opinions, likely because of the large proportion of the appellate docket devoted to criminal cases.

*Prior publication of case*: This was coded as 1 if the case had a prior published opinion before this stage in the litigation process, with the expectation that cases designated for publication present more significant legal issues and therefore should have more subsequent citations.

*Number of attorneys*: Larger teams of attorneys should produce higher quality, more informative briefs, which should positively influence legal reasoning quality in the majority opinion. Indeed, cases with larger litigation teams tend to have longer majority opinions, contain more citations, and include more extensive legal reasoning (Moyer et al. 2021). We use the natural log of the number of attorneys listed in the opinion because of (1) the heavy positive skew of the variable and (2) the diminishing marginal effect of additional attorneys. As a robustness check, we estimated models using the untransformed number of attorneys. The results of the hypotheses tests did not change, but the transformed attorney count variable appears to be a better fit.

*Points of law*: The number of Westlaw Keynotes for the case. Haire, Moyer, and Treier (2013) argue that headnotes are proxy measures for the "points of law" discussed in the opinion. This measure reflects the number of distinct issues that met a certain threshold of legal analysis. We expect that it will be positively correlated with subsequent citations, as cases with more points of law should be relevant to a greater proportion of cases.

*Multiple docket numbers*: Consolidated cases may reflect greater legal complexity and novelty, and as such, may be more likely to be cited.

*Dissent*: Most Court of Appeals decisions are unanimous; dissenting votes are rare events, occuring in salient or legally ambiguous cases (Hettinger, Lindquist, and Martinek 2006). Cases with dissent should receive more citations, all else equal.

*Concurrence*: Like dissents, concurrences are rare and are an indicator of salience, complexity, and legal ambiguity in the doctrine area (Hettinger, Lindquist, and Martinek 2006). We expect more subsequent cites when there are concurrences, so the coefficient should be positive.

*Mixed outcome*: Mixed opinions (e.g., affirm in part, reverse in party) reflect legal complexity and should result in more subsequent citations.

*Reversal*: For the same reasons that cases with separate opinions result in more subsequent citations, reversal of the district court should result in more subsequent citations (Szmer, Christensen, and Grubbs 2014).

**Panel and Workload Effects**

*Split panel*: Ideologically homogeneous groups have been found to engage in more superficial deliberations because they converge on shared information and quickly reach a consensus (Sunstein 2005). Mixed party panels should have a positive relationship with citations.

*Caseload*: Past research has found a negative relationship between opinion author caseload and subsequent external citations (Szmer, Christensen, and Grubbs 2020). Judges on circuits with higher caseloads write shorter opinions because they have less time to devote to writing each opinion (Epstein, Landes, and Posner 2013). We used the U.S. Courts' Federal Court Management Statistics measure of the number of terminated cases terminated in the circuit during that year, per active judge on the circuit. Because the variable is somewhat positively skewed, and we might expect diminishing marginal returns, we logarithmically transformed the variable. When we estimated the model using the untransformed caseload, the results of the

hypothesis tests did not change. Neither version of the caseload variable had any statistically significant effects on the number of subsequent external citations to the opinion.

***Opinion Attributes Related to Readability***

We include two measures of readability to address the possibility that the accessibility of the writing in an opinion will affects its usefulness for other judges. Each measure captures a separate aspect of readability; the sentence level for Nelson and Hinkle (2018) index and the word level for the LIWC measure. Diagnostics confirm that the inclusion of both variables does not create problems with multi-collinearity ($r = .37$).

<u>*Pct. 6+ Letter Words*</u>: This measure is part of the standard battery of variables generated by the Linguistic Inquiry and Word Count (LIWC) program. Higher values indicate less readability. Given that more readable opinions should receive more citations (Nelson and Hinkle 2018), the coefficient should be negative.

<u>*Nelson and Hinkle Readability Index*</u>: We replicated the index used by Nelson and Hinkle (2018), which is derived from a factor analysis of six component variables: Words Per Sentence, Flesch Reading Ease Scale, Flesch-Kincaid Grade Level Score, Gunning-Fog Index of Readability, SMOG (Simple Measure of Gobbledygook) Readability Formula, and the Automated Readability Index (ARI). We generated the first component using LIWC, and the latter components were generated using the Python program, py-readability+metrics (https://pypi.org/project/py-readability-metrics/#flesch-kincaid-grade-level). The index is extremely reliable, with one eigenvalue above one (4.86), and the second highest value was well under one (0.14). Additionally, the factor loading magnitudes were between 0.79 and 0.99. For

more information on the measure, see Nelson and Hinkle (2018). Note that we multiplied the index by -1 such that higher values indicate more readability. Given Nelson and Hinkle (2018), the coefficient should be positive.

**Table OA1.1: Descriptive Statistics**

|  | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|
| Subsequent External Cites | 1.53 | 2.56 | 0 | 40 |
| Female Judge | .250 | .433 | 0 | 1 |
| Non-white Judge | .175 | .380 | 0 | 1 |
| White Female Judge | .198 | .399 | 0 | 1 |
| Non-white Female Judge | .052 | .221 | 0 | 1 |
| Non-white Male Judge | .124 | .330 | 0 | 1 |
| Deep Cites | 5.21 | 4.78 | 0 | 54 |
| Split Party Panel | .725 | .446 | 0 | 1 |
| SCOTUS & Legal Academy Ties | .007 | .885 | -.352 | 3.84 |
| Elite Law School | .570 | .495 | 0 | 1 |
| Judge Tenure | 2.66 | .741 | 0 | 3.85 |
| Amicus Curiae | .104 | .305 | 0 | 1 |
| Prior Publication | .222 | .415 | 0 | 1 |
| Constitutional Issue | .303 | .460 | 0 | 1 |
| Dissent | .108 | .310 | 0 | 1 |
| Concurrence | .065 | .247 | 0 | 1 |
| Number of Attorneys | 1.71 | .488 | 0 | 4.18 |
| Caseload | 6.09 | .437 | 4.93 | 7.04 |
| Mixed Outcome | .118 | .323 | 0 | 1 |
| Reversed | .269 | .444 | 0 | 1 |
| Multiple Docket Numbers | .140 | .347 | 0 | 1 |
| Criminal Issue | .323 | .468 | 0 | 1 |
| Civil Rights/Liberties Issue | .261 | .439 | 0 | 1 |
| Points of Law | 12.8 | 9.84 | 0 | 110 |
| Readability | -.005 | 1.00 | -4.18 | 2.90 |
| Pct. 6+ Letter Words | 26.9 | 2.39 | 19.3 | 35.1 |
| Observations | 2228 |  |  |  |

## OA2. Full Results of the Models Used to Generate Figures 1-6

**Table OA2.1: Negative Binomial Regression (NBR) of the Number of Out-of-Circuit Citations**

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Female Judge | -0.149* | -0.218 | -0.163* |
| | (0.069) | (0.165) | (0.068) |
| Female Judge × Deep Cites | | 0.009 | |
| | | (0.025) | |
| Non-white Judge | -0.091 | 0.106 | 0.109 |
| | (0.087) | (0.127) | (0.121) |
| Non-white Judge × Deep Cites | | -0.032** | -0.033*** |
| | | (0.011) | (0.009) |
| Deep Cites | 0.059*** | 0.063*** | 0.066*** |
| | (0.009) | (0.011) | (0.009) |
| Split Party Panel | -0.075 | -0.078 | -0.078 |
| | (0.102) | (0.104) | (0.104) |
| SCOTUS & Legal Academy Ties | 0.087** | 0.084* | 0.086** |
| | (0.031) | (0.034) | (0.032) |
| Elite Law School | 0.059 | 0.051 | 0.052 |
| | (0.074) | (0.072) | (0.074) |
| Judge Tenure | -0.040 | -0.041 | -0.041 |
| | (0.042) | (0.043) | (0.043) |
| Amicus Curiae | 0.358*** | 0.352*** | 0.352*** |
| | (0.096) | (0.094) | (0.095) |
| Prior Publication | 0.000 | 0.005 | 0.004 |
| | (0.073) | (0.072) | (0.073) |
| Constitutional Issue | -0.087 | -0.082 | -0.084 |
| | (0.076) | (0.077) | (0.076) |
| Dissent | -0.088 | -0.102 | -0.104 |
| | (0.112) | (0.110) | (0.110) |
| Concurrence | -0.015 | -0.019 | -0.024 |

|  | (0.098) | (0.106) | (0.094) |
|---|---|---|---|
| Number of Attorneys | 0.203$^{***}$ | 0.202$^{***}$ | 0.203$^{***}$ |
|  | (0.045) | (0.044) | (0.044) |
| Caseload | -0.034 | -0.034 | -0.034 |
|  | (0.057) | (0.056) | (0.056) |
| Mixed Outcome | 0.282$^{***}$ | 0.288$^{***}$ | 0.287$^{***}$ |
|  | (0.084) | (0.085) | (0.083) |
| Reversed | 0.136$^{*}$ | 0.136$^{*}$ | 0.133$^{*}$ |
|  | (0.064) | (0.061) | (0.062) |
| Multiple Docket Numbers | 0.078 | 0.067 | 0.068 |
|  | (0.127) | (0.128) | (0.126) |
| Criminal Issue | 0.600$^{***}$ | 0.592$^{***}$ | 0.593$^{***}$ |
|  | (0.058) | (0.057) | (0.057) |
| Civil Rights/Liberties Issue | 0.200$^{**}$ | 0.197$^{*}$ | 0.196$^{*}$ |
|  | (0.077) | (0.077) | (0.077) |
| Points of Law | 0.000 | 0.000 | 0.000 |
|  | (0.004) | (0.004) | (0.004) |
| Readability | 0.047 | 0.047 | 0.046 |
|  | (0.039) | (0.037) | (0.039) |
| Pct. 6+ Letter Words | -0.027$^{**}$ | -0.027$^{**}$ | -0.027$^{**}$ |
|  | (0.010) | (0.010) | (0.010) |
| Constant | 0.809 | 0.803 | 0.792 |
|  | (0.449) | (0.456) | (0.453) |
| lnalpha | 0.132 | 0.127 | 0.127 |
|  | (0.070) | (0.070) | (0.070) |
| Observations | 2228 | 2228 | 2228 |
| Pseudo $R^2$ | 0.038 | 0.039 | 0.039 |

**Notes:** Models 1 & 2 are the basis for Figures 1 and 2 in the manuscript. Model 3 is the basis for Figure 3. Unconditional year fixed effects not reported. Standard errors clustered by circuit in parentheses. $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.

**Table OA2.2: NBR of the Number of Out-of-Circuit Citations, Race-Gender Groups**

| | Model 4 | Model 5 | Model 6 |
|---|---|---|---|
| Non-white Female Judge | -0.329* | -0.072 | -0.047 |
| | (0.155) | (0.265) | (0.244) |
| Non-white Male Judge | -0.048 | 0.112 | 0.137 |
| | (0.086) | (0.109) | (0.120) |
| White Female Judge | -0.118 | -0.223 | -0.127 |
| | (0.088) | (0.154) | (0.086) |
| Non-white Female Judge × Deep Cites | | -0.049* | -0.054** |
| | | (0.022) | (0.017) |
| Non-white Male Judge × Deep Cites | | -0.025*** | -0.030*** |
| | | (0.006) | (0.008) |
| White Female Judge × Deep Cites | | 0.016 | |
| | | (0.025) | |
| Deep Cites | 0.058*** | 0.061*** | 0.066*** |
| | (0.009) | (0.010) | (0.009) |
| Split Party Panel | -0.075 | -0.079 | -0.079 |
| | (0.102) | (0.104) | (0.104) |
| SCOTUS & Legal Academy Ties | 0.085** | 0.081* | 0.084* |
| | (0.032) | (0.036) | (0.033) |
| Elite Law School | 0.064 | 0.058 | 0.060 |
| | (0.077) | (0.075) | (0.077) |
| Judge Tenure | -0.040 | -0.041 | -0.041 |
| | (0.042) | (0.043) | (0.042) |
| Amicus Curiae | 0.361*** | 0.355*** | 0.355*** |
| | (0.096) | (0.094) | (0.094) |
| Prior Publication | 0.000 | 0.009 | 0.006 |
| | (0.073) | (0.073) | (0.074) |
| Constitutional Issue | -0.086 | -0.082 | -0.084 |
| | (0.077) | (0.078) | (0.078) |
| Dissent | -0.089 | -0.101 | -0.105 |

|                           | (0.111)      | (0.110)      | (0.110)      |
|---------------------------|--------------|--------------|--------------|
| Concurrence               | -0.017       | -0.017       | -0.027       |
|                           | (0.096)      | (0.104)      | (0.092)      |
| Number of Attorneys       | 0.206***     | 0.207***     | 0.207***     |
|                           | (0.046)      | (0.045)      | (0.044)      |
| Caseload                  | -0.043       | -0.043       | -0.044       |
|                           | (0.061)      | (0.061)      | (0.060)      |
| Mixed Outcome             | 0.278**      | 0.283***     | 0.282***     |
|                           | (0.085)      | (0.086)      | (0.084)      |
| Reversed                  | 0.132*       | 0.132*       | 0.127*       |
|                           | (0.064)      | (0.060)      | (0.062)      |
| Multiple Docket Numbers   | 0.079        | 0.068        | 0.070        |
|                           | (0.126)      | (0.127)      | (0.126)      |
| Criminal Issue            | 0.602***     | 0.598***     | 0.599***     |
|                           | (0.057)      | (0.055)      | (0.055)      |
| Civil Rights/Liberties Issue | 0.204**   | 0.202**      | 0.200**      |
|                           | (0.075)      | (0.075)      | (0.075)      |
| Points of Law             | -0.000       | -0.000       | -0.000       |
|                           | (0.004)      | (0.004)      | (0.004)      |
| Readability               | 0.047        | 0.049        | 0.048        |
|                           | (0.038)      | (0.036)      | (0.038)      |
| Pct. 6+ Letter Words      | -0.028**     | -0.027**     | -0.028**     |
|                           | (0.010)      | (0.010)      | (0.010)      |
| Constant                  | 0.869*       | 0.859        | 0.852        |
|                           | (0.442)      | (0.453)      | (0.445)      |
| lnalpha                   | 0.131        | 0.125        | 0.126        |
|                           | (0.070)      | (0.071)      | (0.070)      |
| Observations             | 2228         | 2228         | 2228         |
| Pseudo $R^2$             | 0.038        | 0.039        | 0.039        |

**Notes:** Intersectional models associated with Figures 4-6. Unconditional year fixed effects not reported. Standard errors clustered by circuit in parentheses. $^*$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.

**OA3. Alternative Specifications Including Asian-American Judges**

In the main models, we opted to exclude cases with majority opinions written by Asian-American judges for methodological and theoretical reasons. First, the concentration of a small number of Asian-Asian American judges (three Asian-American judges wrote 82.6 percent of the opinions by Asian-Americans in our sample) in a small number of circuits (91 percent served on just three circuits) impedes any attempts to generalize. Similarly, less than one percent of the opinions in the full dataset (n = 23) were written by Asian-Americans. Perhaps more importantly, the primary causal mechanism influencing the relationship between race and subsequent citations (biased perceptions of competence) likely varies for Asian-American judges when compared to African-American and Latinx judges. As Visalvanich (2017) suggests, Asian political elites "face a set of racial-political stereotypes that are unique to their racial subgroup." With respect to stereotypes in the legal profession, Rhode (2001: 1050) notes, "Asian Americans are saddled with the myths of the 'model minority'; they are thought to be smart and hardworking, but not sufficiently assertive to command the confidence of clients and legal teams."

In the analyses that follow, we include cases with Asian-American judges in the estimation sample. Table OA3.1 shows the results of a model that includes Asian-American judges with Black and Latinx judges (that is, they are coded as Non-White = 1). The results are unchanged from the model presented in the main manuscript, as are results of additional models presented in DA2.

**Table OA3.1: NBR of the Number of Out-of-Circuit Citations, Asian-American Judges Coded as Non-White**

|  | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Female Judge | -0.159[*] | -0.222 | -0.172[*] |
|  | (0.068) | (0.168) | (0.067) |
| Female Judge × Deep Cites |  | 0.008 |  |

|  |  |  |  |
|---|---|---|---|
|  |  | (0.026) |  |
| Black/Latinx/Asian Judge | -0.069 | 0.110 | 0.113 |
|  | (0.091) | (0.119) | (0.115) |
| Non-white Judge × Deep Cites |  | -0.029*** | -0.030*** |
|  |  | (0.008) | (0.008) |
| Deep Cites | 0.059*** | 0.063*** | 0.066*** |
|  | (0.008) | (0.011) | (0.009) |
| Split Party Panel | -0.066 | -0.069 | -0.069 |
|  | (0.102) | (0.104) | (0.104) |
| SCOTUS & Legal Academy Ties | 0.088** | 0.085* | 0.086** |
|  | (0.031) | (0.034) | (0.032) |
| Elite Law School | 0.062 | 0.056 | 0.057 |
|  | (0.071) | (0.069) | (0.071) |
| Judge Tenure | -0.048 | -0.049 | -0.049 |
|  | (0.042) | (0.043) | (0.043) |
| Amicus Curiae | 0.354*** | 0.348*** | 0.348*** |
|  | (0.096) | (0.094) | (0.095) |
| Prior Publication | 0.010 | 0.015 | 0.014 |
|  | (0.073) | (0.073) | (0.074) |
| Constitutional Issue | -0.078 | -0.073 | -0.074 |
|  | (0.076) | (0.076) | (0.075) |
| Dissent | -0.093 | -0.105 | -0.107 |
|  | (0.108) | (0.106) | (0.106) |
| Concurrence | -0.022 | -0.026 | -0.031 |
|  | (0.099) | (0.108) | (0.095) |
| Number of Attorneys | 0.201*** | 0.200*** | 0.200*** |
|  | (0.046) | (0.045) | (0.045) |
| Caseload | -0.040 | -0.041 | -0.041 |
|  | (0.054) | (0.053) | (0.053) |
| Mixed Outcome | 0.273** | 0.277** | 0.276** |
|  | (0.085) | (0.086) | (0.085) |

| | | | |
|---|---|---|---|
| Reversed | 0.134$^*$ | 0.133$^*$ | 0.130$^*$ |
| | (0.061) | (0.059) | (0.060) |
| | | | |
| Multiple Docket Numbers | 0.074 | 0.062 | 0.063 |
| | (0.124) | (0.126) | (0.124) |
| | | | |
| Criminal Issue | 0.596$^{***}$ | 0.587$^{***}$ | 0.589$^{***}$ |
| | (0.065) | (0.063) | (0.064) |
| | | | |
| Civil Rights/Liberties Issue | 0.189$^*$ | 0.185$^*$ | 0.183$^*$ |
| | (0.080) | (0.082) | (0.081) |
| | | | |
| Points of Law | -0.000 | -0.000 | -0.000 |
| | (0.004) | (0.004) | (0.004) |
| | | | |
| Readability | 0.049 | 0.051 | 0.050 |
| | (0.041) | (0.039) | (0.041) |
| | | | |
| Pct. 6+ Letter Words | -0.027$^*$ | -0.027$^*$ | -0.027$^*$ |
| | (0.011) | (0.011) | (0.011) |
| | | | |
| Constant | 0.865 | 0.855 | 0.845 |
| | (0.442) | (0.448) | (0.443) |
| | | | |
| lnalpha | 0.132$^*$ | 0.127 | 0.128 |
| | (0.067) | (0.067) | (0.067) |
| Observations | 2245 | 2245 | 2245 |
| Pseudo $R^2$ | 0.038 | 0.039 | 0.039 |

**Notes:** Unconditional year fixed effects not reported. Standard errors clustered by circuit in parentheses. $^*$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.

**OA4. Alternative specifications with control for Federalist Society affiliation.**

We consider the possibility that a judge's connection to intellectual and professional networks may raise their visibility relative to those who are not connected and affect out of circuit citations. One network in particular that has been identified in the literature as important is the Federalist Society (Hollis-Brusky 2015), which includes as many as 60,000 affiliated individuals in the legal profession (Bird and McGee 2023).

To assess whether being part of the Federalist Society network helped a judge's work attract attention outside their circuit, we collected two different measures of Federalist Society connections: the Hollis-Brusky (2015) measure (whether a judge appeared as a speaker at the Federalist Society national lawyers' convention) and a second, broader measure that indicates whether they were listed as a contributor on the Federal Society website (results from the latter model are found in DA4).

Because of the time period of our study (opinions written between 2009-2016), our analysis does not include opinions by President Trump's judicial appointments, many of whom were Federalist Society members (Bird and McGee 2023). About half of observations authored by Republican appointees (53%) were individuals listed as "contributors" on the Federalist Society website, compared to only 19% of Democratic appointees.

The results show that, regardless of which specification is used, Federalist Society affiliation is not a significant predictor of subsequent out-of-circuit citations. Given that 70% of Federalist Society members in our data are White men, this is not surprising. Most importantly for our purposes, including the Federalist Society measures has no effect on the results. In other words, our findings are still robust when we include Federalist Society variables that are significantly correlated with judge race and gender.

Although there are undoubtedly other professional networks (e.g., American Constitution Society) that may impact a judge's ability to attract attention to their work, systematic records about participation are lacking. However, a review of the speakers' lists for past ACS programs (posted on the ACS website) reveals that the individuals listed are primarily academics and practitioners who work for interest groups, with no federal judges. The only judge at the 2022 national convention was Justice Sonia Sotomayor. While it is beyond the scope of this Letter, future research could identify and explore more of these kind of intellectual and professional networks that may affect judges' influence and reputation among their peers on the bench.

**Table OA4.1: NBR of the Number of Out-of-Circuit Citations, Control for Federalist Society**

|  | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Female Judge | -0.150* | -0.219 | -0.164** |
|  | (0.064) | (0.164) | (0.063) |
| Female Judge × Deep Cites |  | 0.009 |  |
|  |  | (0.025) |  |
| Non-white Judge | -0.093 | 0.105 | 0.107 |
|  | (0.093) | (0.130) | (0.126) |
| Non-white Judge × Deep Cites |  | -0.032** | -0.033*** |
|  |  | (0.010) | (0.009) |
| Deep Cites | 0.058*** | 0.063*** | 0.066*** |
|  | (0.008) | (0.010) | (0.008) |
| FedSoc National Convention | -0.015 | -0.008 | -0.010 |
|  | (0.098) | (0.096) | (0.095) |
| Split Party Panel | -0.076 | -0.078 | -0.079 |
|  | (0.100) | (0.102) | (0.102) |
| SCOTUS & Legal Academy Ties | 0.089*** | 0.085** | 0.087*** |
|  | (0.025) | (0.029) | (0.026) |
| Elite Law School | 0.060 | 0.051 | 0.052 |

| | | | |
|---|---|---|---|
| | (0.076) | (0.074) | (0.076) |
| Judge Tenure | -0.040 | -0.041 | -0.041 |
| | (0.042) | (0.043) | (0.043) |
| Amicus Curiae | 0.358*** | 0.353*** | 0.353*** |
| | (0.095) | (0.093) | (0.093) |
| Prior Publication | 0.000 | 0.005 | 0.004 |
| | (0.073) | (0.072) | (0.073) |
| Constitutional Issue | -0.086 | -0.082 | -0.083 |
| | (0.076) | (0.076) | (0.075) |
| Dissent | -0.088 | -0.101 | -0.103 |
| | (0.109) | (0.107) | (0.107) |
| Concurrence | -0.014 | -0.018 | -0.024 |
| | (0.097) | (0.106) | (0.094) |
| Number of Attorneys | 0.204*** | 0.203*** | 0.203*** |
| | (0.045) | (0.044) | (0.045) |
| Caseload | -0.037 | -0.035 | -0.036 |
| | (0.059) | (0.058) | (0.057) |
| Mixed Outcome | 0.282*** | 0.288*** | 0.287*** |
| | (0.085) | (0.085) | (0.084) |
| Reversed | 0.137* | 0.136* | 0.133* |
| | (0.066) | (0.063) | (0.064) |
| Multiple Docket Numbers | 0.078 | 0.067 | 0.068 |
| | (0.127) | (0.128) | (0.126) |
| Criminal Issue | 0.600*** | 0.592*** | 0.593*** |
| | (0.058) | (0.057) | (0.057) |
| Civil Rights/Liberties Issue | 0.201** | 0.197* | 0.196* |
| | (0.076) | (0.077) | (0.077) |
| Points of Law | 0.000 | 0.000 | 0.000 |
| | (0.004) | (0.004) | (0.004) |
| Readability | 0.047 | 0.047 | 0.047 |
| | (0.039) | (0.038) | (0.040) |

| | | | |
|---|---|---|---|
| Pct. 6+ Letter Words | -0.027** | -0.027** | -0.027** |
| | (0.010) | (0.010) | (0.010) |
| | | | |
| Constant | 0.832 | 0.815 | 0.808 |
| | (0.440) | (0.435) | (0.432) |
| | | | |
| lnalpha | 0.132 | 0.127 | 0.127 |
| | (0.070) | (0.071) | (0.070) |
| Observations | 2228 | 2228 | 2228 |
| Pseudo $R^2$ | 0.038 | 0.039 | 0.039 |

**Notes:** Hollis-Brusky measure of Federalist Society affiliation used. Unconditional year fixed effects not reported. Standard errors clustered by circuit in parentheses. $^*$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$.

**OA5. Exploring Trends over Time**

Because the influence of identity on judicial influence might change over time, we employed two robustness checks. First, we interacted the main independent variables by a *Year Counter* variable (coded 0 for 2009 and increasing by 1 for each subsequent year). The results are presented in Figure OA5.1 (For the tables of the models used to generate the marginal effects, see Table DA6.1). Each subplot shows the marginal effects of that particular variable by each year that is equivalent to the counter variable (e.g., if the counter is 0, the year is 2009). As the figures illustrate, the substantive effects of Female Judge, White Female Judge, and Non-white Female Judge are statistically significant (0.05 level) from 2009-2012, but not 2013-2016.

We also performed an additional analysis where we estimated the models by splitting the dataset into two equal, four-year periods: 2009-12 and 2013-16. We estimated versions of each of the models we presented for each period (Please see Tables DA6.2 and DA6.3 for the full results). The results in Table DA6.2 show the impact of judge gender is significant and negative in the first four-year period, but not in the later period. Conversely, the interaction between *Non-white Judge* and *Deep Cites* is significant and negative in the 2013-16 period, but not the earlier period. This suggests that the effect of time is different for gender and race: the gender gap may be dissipating over time, while the race gap might be growing.

The second set of analyses (see Table DA6.2) takes the same approach for the models examining intersectionality. Here, like the first set of analyses, we see that White women are less likely to receive subsequent external cites in the first four years of the data, but the effect is no longer significant between 2013-16. Moreover, while the effect is not significant for Non-white women at the 0.05 level, it would be significant using a one-tailed test during both time periods. This suggests the effect for Non-white women might be more enduring.

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Similarly, while the interactions of *Deep Cites* and *Non-white Male* and *Female*, respectively, are only significant between 2013-16, the interaction with *Non-white Female* is significant using a one-tailed test. Again, this could indicate that the effects for Non-white women are not time bound.

At best, these analyses are exploratory, and we are reluctant to draw firm conclusions regarding temporal effects from eight years of time series-cross sectional data. However, this should be a starting point for future research to both test whether the effects are time-bound, and, if so, what are the factors responsible for the temporal changes.

**Figure OA5.1: Coefficient Plots of the Marginal Effects of Race/Gender on the Number of Out-of-Circuit Citations, by Year**
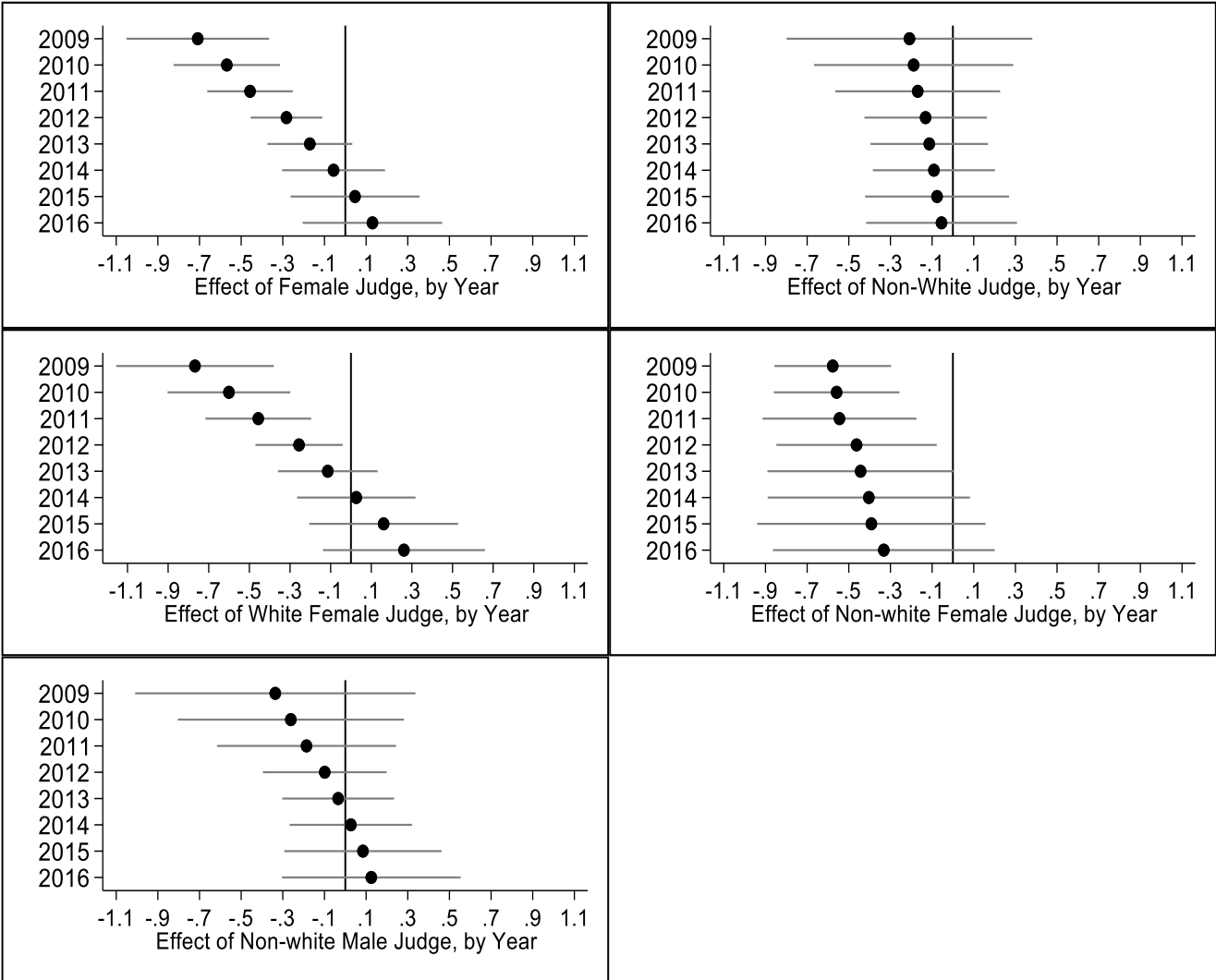


**Notes**: N=2,228. Coefficient plots of the marginal effects of race and gender variables from negative binomial regression models, by year. Standard errors clustered by circuit.

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