Gender Differentials in the Content of Judicial Opinions

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Women in the judiciary bring a unique perspective to their work. After all, we know that women simply have different life experiences as compared to men. Despite these differences, studies of court case outcomes find that women on the bench often come to the same substantive conclusions as men. This Article explores the ways in which women judges might differ from men by considering the content of judicial opinions—an aspect often neglected by scholars of gender and the judiciary. The content of a judicial opinion provides an important insight into the process by which judges make their decisions. By analyzing this content, we can begin to understand not just what decisions judges make, but also why they make those decisions.

My theory predicts that women judges will write longer opinions with higher numbers of citations. These differences may occur for three different reasons. First, women judges could have higher qualifications as compared to men. Second, men and women are socialized differently, and perhaps this could manifest in the content of judicial opinions. Finally, the threat of real or perceived sexism might cause women judges to work harder and thus produce more thorough decisions. Regardless of which factor(s) drive this phenomenon, I expect differences to be most prominent in gendered issue areas, such as sexual harassment, either because women judges have more of a stake in these cases or because concerns about bias against them may be most pervasive when considering such issues.

Using a novel dataset of court cases in fourteen varied issue areas over twenty-three years, I analyze gender differentials in the text of judicial opinions. Ultimately, I find that woman-authorship is correlated with longer opinions and a greater number of citations to various resources, including other cases, legal authorities, and the record below. These results suggest that women judges may produce more thorough work as compared to their

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male counterparts—a finding that has important implications for judges of all genders, as well as other political actors and society writ large.

INTRODUCTION

> *[O]ur experiences as women and people of color affect our decisions. The aspiration to impartiality is just that—it's an aspiration because it denies the fact that we are by our experiences making different choices than others.*
>
> –Justice Sonia Sotomayor[1]

Just over forty-five years ago, former President Carter more than doubled the number of women on federal benches by appointing a mere twenty-three women to the judiciary.[2] Today, women make up 38% of active federal judgeships; that is, 308 of them serve as judges on the district courts, courts of appeals, and the U.S. Supreme Court.[3] As women become more prominent figures on the courts, the potential ways in which they might differ from their male colleagues becomes increasingly important to study. After all, much of the formative literature on the courts tells us the story of male judges—simply as a factor of early gender imbalances in this branch. To get a full picture of how the courts function, it is imperative to have a more wholistic understanding of all members of the bench.

Supreme Court Justice Sonia Sotomayor has been particularly transparent about the effect of her positionality on her work, and her jurisprudence seems to support these notions. For example, in an early procedural dissent to what would later become the *Dobbs* case, Justice Sotomayor emphasized that bodily autonomy was a woman's right and criticized the Court's failure to meet "its constitutional obligations to protect [] the rights of women."[4] And Justice Sotomayor is not the first nor the only judge whose decision-making appears to be impacted by their personal characteristics. In a 1990 survey fielded to Carter appointees on the federal judiciary, women reported different experiences, worldviews, and even personality traits as compared to

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1. Frank James, *Sotomayor's 'Wise Latina' Line Maybe Not So Wise*, NPR: TWO-WAY (May 27, 2009, 12:48 PM), https://www.npr.org/sections/thetwo-way/2009/05/sotomayors_wise_latina_line_ma.html [https://perma.cc/DC44-FCBB].

2. *40 Years Later, Pioneering Women Judges Savor Place in History*, U.S. CTS. (Aug. 14, 2019), https://www.uscourts.gov/news/2019/08/14/40-years-later-pioneering-women-judges-savor-place-history [https://perma.cc/YU48-8M92].

3. This number drops to about 32% when including senior judges in the calculation. All figures calculated using the Federal Judicial Center's database on all federal judges. *Biographical Directory of Article III Federal Judges: Export*, FED. JUD. CTR., https://www.fjc.gov/history/judges/biographical-directory-article-iii-federal-judges-export [https://perma.cc/T3FS-CEFQ].

4. Whole Woman's Health v. Jackson, 141 S. Ct. 2494, 2499 (2021) (Sotomayor, J., dissenting).

men.[5] But women on the court are not usually rewarded for acknowledging that their perspectives differ from those of men. In fact, a judge's gender identity (among other characteristics) is likely to open her up to societal criticism.[6]

In one experiment, researchers found that the public was more likely to believe that women judges may be biased in child custody cases because of their sex.[7] Even before women attain judgeships, they must face more intense questions about their competency and judicial philosophy during confirmation hearings as opposed to men.[8] And this effect is exacerbated for women of color.[9] Despite these findings, the vast majority of empirical studies on gender and judging uncover either no differences in judicial outcomes by gender, or only minor divergences in a few suspect issue areas.[10] Although the outcome differences between judges of different genders may be small, this finding is not necessarily indicative of uniformity in the decision-making processes across men and women on the bench. It is important to more closely examine this entire process to ascertain why judges come to their conclusions in a given case. Overall, I argue and find evidence

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5. Elaine Martin, *Men and Women on the Bench: Vive la Difference?*, 73 JUDICATURE 204, 208 (1990) (also finding substantial differences between genders in their attitudes about women, work-life balance conflicts, and experiences of sex discrimination—as might be expected).

6. *See* Jeffrey A. Bennett, *Containing Sotomayor: Rhetorics of Personal Restraint, Judicial Prudence, and Diabetes Management*, 104 Q.J. SPEECH 257, 271–72 (2018) (arguing that Justice Sotomayor was able to "contain" the criticism leveraged against her because of her sex and race by employing her disability as a diabetic to prove her own personal control as indicative of future judicial restraint on the bench).

7. Michael P. Fix & Gbemende E. Johnson, *Public Perceptions of Gender Bias in the Decisions of Female State Court Judges*, 70 VAND. L. REV. 1845, 1867 (2017).

8. Christina L. Boyd et al., *The Role of Nominee Gender and Race at U.S. Supreme Court Confirmation Hearings*, 52 LAW & SOC'Y REV. 871, 895 (2018).

9. Christina L. Boyd et al., *Constructing the Supreme Court: How Race, Ethnicity, and Gender Have Affected Presidential Selection and Senate Confirmation Hearings*, 55 POLITY 400, 407–08 (2023).

10. *See* Christina L. Boyd, *Representation on the Courts? The Effects of Trial Judges' Sex and Race*, 69 POL. RSCH. Q. 788, 795 (2016) (finding that women and Black U.S. District Court judges were slightly more likely to find for EEOC claimants as compared to men or white judges); Christina L. Boyd et al., *Untangling the Causal Effects of Sex on Judging*, 54 AM. J. POL. SCI. 389, 405–06 (2010) (finding gender differences in outcomes for abortion, gender discrimination, and sexual harassment cases); Todd Collins & Laura Moyer, *Gender, Race, and Intersectionality on the Federal Appellate Bench*, 61 POL. RSCH. Q. 219, 223 (2008) (finding women of color on the U.S. Court of Appeals were more likely to support the claims of criminal defendants than white judges); Jennifer L. Peresie, *Female Judges Matter: Gender and Collegial Decisionmaking in the Federal Appellate Courts*, 114 YALE L.J. 1759, 1776 (2005) ("[I]n Title VII sexual harassment and sex discrimination cases . . . a judge's gender and the gender composition of the panel mattered to a judge's decision.").

that women judges do in fact differ from men in the judicial process that culminates in their opinions, as evident in the content of such opinions.

For scholars of Congress and the bureaucracy, it has become quite clear that women face disadvantages that require them to be more qualified than their male peers to attain the same legitimacy and respect.[11] This effect may persist because women perceive themselves as less qualified for roles in government than they actually are.[12] Additionally, studies indicate that women in politics face a double bind—when they conform to gender roles, they are seen as weak leaders; when they rebel against them, they are evaluated unfavorably for breaking the norm.[13] In short, negative affect abounds no matter how women in politics behave. Either to combat this negative affect, because of their heightened quality, or simply due to socialization differences, women in politics may sometimes be more effective workers as compared to their men counterparts.[14] For example, congresswomen in the minority party are more adept at advancing the bills they sponsor as compared to minority party men.[15] In the context of federal agencies, women leaders have been found to more successfully promulgate ambitious rules as compared to men, but only when they are working in an environment that supports them.[16] Further, some scholars have posited that women legislators and administrators may be more effective in politics as compared to men because they are more willing to engage in collaborative work styles.[17]

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11. Nichole M. Bauer, *Shifting Standards: How Voters Evaluate the Qualifications of Female and Male Candidates*, 82 J. POL. 1, 9 (2019); Sarah A. Fulton, *Running Backwards and in High Heels: The Gendered Quality Gap and Incumbent Electoral Success*, 65 POL. RSCH. Q. 303, 310–11 (2012).

12. Richard L. Fox & Jennifer L. Lawless, *Entering the Arena? Gender and the Decision to Run for Office*, 48 AM. J. POL. SCI. 264, 275 (2004).

13. Alice H. Eagly & Steven J. Karau, *Role Congruity Theory of Prejudice Toward Female Leaders*, 109 PSYCH. REV. 573, 576 (2002).

14. CRAIG VOLDEN & ALAN E. WISEMAN, LEGISLATIVE EFFECTIVENESS IN THE UNITED STATES CONGRESS: THE LAWMAKERS 115–16 (2014).

15. Craig Volden et al., *When Are Women More Effective Lawmakers than Men?*, 57 AM. J. POL. SCI. 326, 338 (2013).

16. *See* Rachel Augustine Potter & Craig Volden, *A Female Policy Premium? Agency Context and Women's Leadership in the U.S. Federal Bureaucracy*, 31 J. PUB. ADMIN. RSCH. & THEORY 91, 104 (2020).

17. Pamela Ban et al., *How Does the Rising Number of Women in the U.S. Congress Change Deliberation? Evidence from House Committee Hearings*, 17 Q.J. POL. SCI. 355, 382 (2022) (finding that House committee hearings stay more on topic and with fewer interruptions as the ratio of congresswomen to congressmen increases); KELLY DITTMAR ET AL., A SEAT AT THE TABLE: CONGRESSWOMEN'S PERSPECTIVES ON WHY THEIR PRESENCE MATTERS 130 (2018)

I anticipate that some combination of these factors—heightened qualifications, socialization differences, and threatened gender bias—will lead women in the judiciary to write opinions that are longer and incorporate more citations. I consider these two measures as they indicate that women may be working somewhat harder to justify the position taken in their opinion. These arguments are consistent with the understanding that women judges often emerge from the same essential pool of women lawyers that perform so well in other branches of government. To test this expectation, I compile a novel dataset of over 1,500 cases in four issue areas over twenty years. For each case, I collect data on gender of the opinion author, the length of the opinion, and the number of different types of citations therein. Importantly, this Article presents a dataset vastly different from most work on gender and judging, which tends to consider only case outcomes and not the in-text justifications for those outcomes. A focus on mere outcomes ignores the vast majority of the decision-making process and does not account for the justifications underlying a judge's decision.

With this data, I find that women judges do in fact produce longer, more citation-heavy opinions, thus indicating they may expend more effort justifying their decisions. The citation-based results extend to total citations, case citations, legal authority citations (e.g., statutes and agency actions), citations to the record, and even citations to party briefs. These results have many important implications. If women judges are expending more effort to produce their opinions, we may worry about the efficiency of their chambers. Or perhaps we should be concerned if men are expending less effort on their judicial outcomes that they may not be adequately justifying the decisions they make. Further, other legal and political actors may have concerns about these gender differentials and what they mean for notions of due process. And if these findings reflect that women work harder due to apprehensions of bias against them, we might have concerns about institutional sexism of the court more generally. We may also wonder whether this finding indicates that women judge produce opinions that are somehow "better."

Part I of this Article discusses the predominant theories of judicial decision-making and highlights how personal characteristics are relatively understudied in this field. Notably, this section provides an overview of the current research on gender and judging and describes how the current

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(finding through interviews with congresswomen, that women are more likely to collaborate across the aisle); Mirya R. Holman & Anna Mahoney, *Stop, Collaborate, and Listen: Women's Collaboration in US Legislatures*, 43 LEGIS. STUD. Q. 179, 198–99 (2018) (analyzing the factors that make collaboration among women most likely in state legislatures); Potter & Volden, *supra* note 16, at 94.

analysis differs from the work of past scholars. In Part II, I describe my expectations about the relationship between gender and judicial decisions. Here, I discuss multiple factors that might lead women on the bench to engage in this behavior. Specifically, women may have higher qualifications as compared to men, different work habits because of gendered socialization, or concerns about real or perceived gender bias that inspire them to work harder. Part III describes the data and methodology employed to test these expectations. Part IV elucidates my key empirical finding—that is, women on the bench do in fact author longer, more citation-rich opinions. Finally, Part V examines the normative implications of my findings for judges, legal practitioners, political actors, and the public.

I. THEORIES OF JUDICIAL DECISION-MAKING

The study of judging raises two important questions. First, what decisions do judges make—that is, what are the raw outcomes of cases? Second, how do judges reach these decisions—that is, what impacts the judicial process of ruling for these outcomes? The bulk of the literature on gender and judging focuses on the first question, frequently finding that women and men on the bench make virtually the same decisions on a given case. This Article is concerned with the second question, operating under the assumption that women judges reach these conclusions in a way that is different from men. Still, it is worth briefly considering relevant theories in the field for both inquiries. Subsections A and B primarily consider theories predicting case outcomes. Subsection C considers theories about gender differences in the elite decision-making process. Because there is a dearth of literature on this phenomenon for judges, I rely on corollary studies of women in other branches of American government.

A. Three Traditional Outcome Models

While judges may insist that they make decisions based solely on the parameters of precedent and other tools for legal analysis, scholars widely agree that the law is only part of the calculus. In fact, studies of judicial decision-making generally contend that judges decide cases based on a combination of three factors: (1) the law (*the legal model*); (2) policy preferences (*the attitudinal model*); and (3) the desires of other political

actors (*the separation-of-powers model*).[18] Scholars debate the weight that judges assign each of these factors. Legal scholars tend to place more emphasis on the law; political scientists generally highlight the latter two models.[19] Yet it should not be assumed that scholars of the legal model completely eschew the other two considerations. The literature in this area is rather robust, particularly when it comes to the attitudinal model, where clear correlations have been drawn between judge ideology and case outcomes.[20] Comparatively few scholars have considered how other types of individual characteristics—such as demographics—might factor into judicial decisions.

Scholars of *the legal model*, sometimes called formalists or legalists, theorize that judges make their decisions based primarily upon the law.[21] Taken to its most extreme, this theory also posits that the law is rationally determinative—that is, that any legal question has a single logically correct answer.[22] Under this view, judges are simply being efficient; legal doctrine provides a useful heuristic and a quick determination for the outcome of a case.[23] And, in some ways, the law does appear to be at least somewhat rationally determinative. After all, the vast majority of cases settle or plea out before a judge must make a decision;[24] it could thus be argued that the "correct" legal answer is usually reached.[25] Further, when a case does make

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18. *See, e.g.*, MICHAEL A. BAILEY & FORREST MALTZMAN, THE CONSTRAINED COURT: LAW, POLITICS, AND THE DECISIONS JUSTICES MAKE 4–14 (2011). Sets of theories that focus on this third factor may also be referred to as "strategic" or "rational choice" models. *See, e.g.*, Frank B. Cross & Blake J. Nelson, *Strategic Institutional Effects on Supreme Court Decisionmaking*, 95 NW. U. L. REV. 1437, 1445–46 (2001). Some scholars have gone so far as to suggest that there are nine possible models of judicial decision-making. *See* RICHARD A. POSNER, HOW JUDGES THINK 19 (2008). I focus on the three most widely accepted theories in the realm of judicial politics literature.

19. POSNER, *supra* note 18, at 47.

20. JEFFREY A. SEGAL & HAROLD J. SPAETH, THE SUPREME COURT AND THE ATTITUDINAL MODEL 255 (1993); Cass R. Sunstein et al., *Ideological Voting on Federal Courts of Appeals: A Preliminary Investigation*, 90 VA. L. REV. 301, 352 (2004).

21. CESARE BECCARIA, ON CRIMES AND PUNISHMENTS AND OTHER WRITINGS 14 (Aaron Thomas ed., Aaron Thomas & Jeremy Parzen trans., Univ. of Toronto Press 2008) (1764).

22. POSNER, *supra* note 18, at 175.

23. Emerson H. Tiller & Frank B. Cross, *What Is Legal Doctrine?*, 100 NW. U. L. REV. 517, 530 (2006).

24. Conventional wisdom suggests that the settlement rate may be as high as 95%. Gillian K. Hadfield, *Where Have All the Trials Gone? Settlements, Non-Trial Adjudications, and Statistical Artifacts in the Changing Disposition of Federal Civil Cases*, 1 J. EMPIRICAL LEGAL STUD. 705, 706 (2004).

25. *See* RONALD DWORKIN, LAW'S EMPIRE, at viii–ix (1968) (arguing that even "hard" cases usually have a correct answer). Of course, some scholars attribute high settlement rates to an imbalance of power and resources among parties rather than a clear and "correct" legal outcome.

it past the settlement stage and is later appealed, research has found that judges on the U.S. Courts of Appeals rely heavily on legal principles to make and justify their decisions.[26] When judges on a panel disagree over the outcome, it is not because they have opposing interpretations of certain precedent, but rather because they deviate as to which line of precedent governs.[27]And if anecdotal evidence is any guide, many judges today purport to follow legalist approaches in their own judicial philosophy. For example, Justice Gorsuch has stated that judges "regularly issue judgments with which they disagree as a matter of policy—all because they think that's what the law fairly demands."[28] Chief Justice John Roberts has likened his job to that of an umpire, noting that his responsibility is simply "to call balls and strikes."[29] Nonetheless, these sentiments of impartiality may seem—to some—like wishful thinking.

Considering the realities of the court, legal realists posit a supplemental theory of decision-making: *the attitudinal model*.[30] Under this model, judges are deemed to be political actors who primarily aim to achieve ideological policy preferences, using legal principles as the means to justify their ends.[31] This theory rejects the concept of rational determinativism. Rather, by acknowledging that the law is ambiguous and judges have little to no oversight, *the attitudinal model* predicts that case outcomes will be based upon the policy motivations of an individual judge or the median judge on a

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See, e.g., Owen M. Fiss, *Against Settlement*, 93 YALE. L.J. 1073, 1075 (1984). Still others reject the premise that settlements are as high as is generally expressed. *See, e.g.*, Theodore Eisenberg & Charlotte Lanvers, *What Is the Settlement Rate and Why Should We Care?*, 6 J. EMPIRICAL LEGAL STUD. 111, 132 tbl.5 (2009) (finding an average settlement rate of 66.9% for 2,966 cases in two federal district courts from 2001 to 2002).

26. Frank B. Cross, *Decisionmaking in the U.S. Circuit Courts of Appeals*, 91 CALIF. L. REV. 1457, 1514 (2003); *see, e.g.*, Kent Barnett et al., *Administrative Law's Political Dynamics*, 71 VAND. L. REV. 1463, 1499 (2018) (finding that *Chevron* deference constrains judges to decisions about agency actions that they would normally ideologically oppose); Rachel K. Hinkle, *Legal Constraints in the US Courts of Appeals*, 77 J. POL. 721, 722, 731 (2015) (finding that judges are unlikely to treat binding precedent unfavorably in a set of Fourth Amendment cases). Note that this model may not hold true for the U.S. Supreme Court. *See* JEFFREY A. SEGAL & HAROLD J. SPAETH, THE SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED 311 (2002) ("This chapter finds virtually no evidence for concluding that the justices' decisions are based on legal factors.").

27. Anthony Niblett & Albert H. Yoon, *Judicial Disharmony: A Study of Dissent*, 42 INT'L REV. L. & ECON. 60, 70 (2015).

28. Neil M. Gorsuch, *Of Lions and Bears, Judges and Legislators, and the Legacy of Justice Scalia*, 66 CASE W. RSRV. L. REV. 905, 920 (2016).

29. Charles Fried, *Balls and Strikes*, 61 EMORY L.J. 641, 641 (2012).

30. SEGAL & SPAETH, *supra* note 20, at 64–65.

31. *Id.* at 65.

panel.[32] The core idea for legal realists is that judges are human and thus their personal opinions will shape ultimate case decisions.[33] As former Supreme Court Justice Oliver Wendell Holmes, Jr. put it: "The life of the law has not been logic: it has been experience."[34] Judges do not eschew the law completely under this theory, but rather select the legal arguments that best support their predetermined outcome.[35] They construe potentially relevant precedent either narrowly or broadly to comport with their views.[36] This model will seem intuitive to observers of the Supreme Court. The most controversial cases to reach the Court today are nearly always decided on partisan lines. Further, empirical evidence bolsters this anecdotal story, indicating that judges form a coalition of votes for a majority or dissent at least partially based on ideological similarities to their colleagues.[37]

But even the attitudinal model misses part of the picture. The judiciary is merely one of three branches of government in the United States that can influence policy outcomes. To account for inter-institutional politics, *the separation-of-powers model* was developed. In this model, the policy preferences of legislative and executive actors affect court outcomes.[38] This model may be the most difficult to reconcile for observers of the court. Even though judges are appointed to the bench by members of the executive and legislative branches, these are appointments for lifetime service.[39] Federal judges cannot be removed from their positions for lack of compliance with the wishes of the president or individual legislators and thus there is no career

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32. *Id.* at 64–65.

33. *See* Jerome Frank, *Are Judges Human? Part 1: The Effect on Legal Thinking of the Assumption That Judges Behave like Human Beings*, 80 U. PA. L. REV. 17, 23–24 (1931).

34. OLIVER WENDELL HOLMES, JR., THE COMMON LAW 1 (Dover Publications 1991) (1881).

35. KARL N. LLEWELLYN, THE BRAMBLE BUSH: ON OUR LAW AND ITS STUDY 66–68 (6th ed. 1977).

36. *See id.*

37. *See* SEGAL & SPAETH, *supra* note 26, at 325–26; Sunstein et al., *supra* note 20, at 352; Cliff Carrubba et al., *Who Controls the Content of Supreme Court Opinions?*, 56 AM. J. POL. SCI. 400, 409–10 (2011) (arguing that the ultimate content of an opinion is shaped by the preferences of the median member of that coalition rather than the median member of the court).

38. LEE EPSTEIN & JACK KNIGHT, THE CHOICES JUSTICES MAKE 82 (1998) (arguing that this model tends to be expressed formally, with all three actors set to have unidimensional policy preferences and outcomes theorized to fall within pareto efficient space); *see also* BAILEY & MALTZMAN, *supra* note 18, at 97–99.

39. Technically, federal judges may face impeachment for "bad behavior," though this occurs in only the most extreme cases. Just fifteen judges have been impeached in the nation's history and merely eight faced convictions from those impeachments. Many of the judges facing impeachment also faced criminal charges for offenses such as bribery, perjury, tax evasion, and sexual assault. *See Impeachments of Federal Judges*, FED. JUD. CTR., https://www.fjc.gov/history/judges/impeachments-federal-judges [https://perma.cc/AM5U-Z97V].

incentive to follow the mandates of the other branches.[40] However, given that Congress and the president have other checks that they can exact on the court, it is reasonable to think that judges might anticipate these actors when making their initial judgments.[41] And empirical studies frequently find that judges truly are constrained by the other branches of government.[42]

B. A Personal-Characteristics Model

While myriad scholars have considered the permutations of legal, attitudinal, and strategic factors that might impact judicial decisions,[43] comparatively few have focused on the ways in which the personal attributes of a judge might impact their decisions. In a personal-characteristics model, the individual traits of a judge impact their judicial policy preferences. Though tangentially related to the attitudinal model, this model ought to be considered wholly its own. Scholars in this arena have considered how a judge's individual personal characteristics might shape their jurisprudence.[44]

Some work on this understudied "personal characteristics" model of decision-making has considered how judges are impacted by their previous

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40. *See* BAILEY & MALTZMAN, *supra* note 18, at 14.

41. For example, Congress and the president can control the judiciary's budget, limit its jurisdiction, and refuse to implement its (otherwise unenforceable) decisions. *Id.*

42. EPSTEIN & KNIGHT, *supra* note 38, at 150; Anna Harvey & Barry Friedman, *Pulling Punches: Congressional Constraints on the Supreme Court's Constitutional Rulings, 1987–2000*, 31 LEGIS. STUD. Q. 533, 555 (2006); Paul J. Gardner & Sharece Thrower, *Presidential Constraints on Supreme Court Decision-Making*, 85 J. POL. 139, 150 (2023).

43. *E.g.*, BAILEY & MALTZMAN, *supra* note 18, at 143.

44. *See generally* Allison P. Harris & Maya Sen, *Bias and Judging*, 22 ANN. REV. POL. SCI. 241 (2019).

occupation,[45] race,[46] ethnicity,[47] gender,[48] age,[49] religion,[50] and/or some combination thereof.[51]

1. Select Personal Traits that Impact Judging

Personal traits have the potential to impact judging. Justice Sotomayor, for example, has expressed frequently and with candor that it can be difficult to separate her experiences as a Latina from her work.[52] Justice Barrett's confirmation hearing to serve on the Seventh Circuit was preoccupied with

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45. *See* Allison P. Harris & Maya Sen, *How Judges' Professional Experience Impacts Case Outcomes: An Examination of Public Defenders and Criminal Sentencing*, J. POL. (forthcoming 2025) (manuscript at 14) (finding that criminal defendants assigned to judges with a background in public defense were less likely to be incarcerated); Rob Robinson, *Does Prosecutorial Experience 'Balance Out' a Judge's Liberal Tendencies?*, 32 JUST. SYS. J. 143, 163 (2011) (finding an unlikely relationship between prosecutorial experience and case outcomes).

46. *See* Pat K. Chew & Robert E. Kelley, *Myth of the Color-Blind Judge: An Empirical Analysis of Racial Harassment Cases*, 86 WASH. U. L. REV. 1117, 1161 (2009); Allison P. Harris, *Can Racial Diversity Among Judges Affect Sentencing Outcomes?*, 118 AM. POL. SCI. REV. 940, 952–53 (2022); Jonathan P. Kastellec, *Racial Diversity and Judicial Influence on Appellate Courts*, 57 AM. J. POL. SCI. 167, 179 (2013); Nancy Scherer, *Blacks on the Bench*, 119 POL. SCI. Q. 655, 669–70 (2004); Maya Sen, *Is Justice Really Blind? Race and Reversal in US Courts*, 44 J. LEGAL STUD. 187, 220–21 (2015); Darrell Steffensmeier & Chester Britt, *Judges' Race and Judicial Decision Making: Do Black Judges Sentence Differently?*, 82 SOC. SCI. Q. 749, 761–62 (2001).

47. *See* Jason L. Morin, *The Voting Behavior of Minority Judges in the U.S. Courts of Appeals: Does the Race of the Claimant Matter?*, 42 AM. POL. RSCH. 34, 53 (2014) (finding Black judges are more likely to favor Black claimants in employment discrimination cases, but Latinx judges are less likely to favor any claimants in employment discrimination cases).

48. *See* Boyd et al., *supra* note 10, at 406.

49. *See* Kenneth L. Manning et al., *Does Age Matter? Judicial Decision Making in Age Discrimination Cases*, 85 SOC. SCI. Q. 1, 15–16 (2004) (finding judges of increased age are more likely to find for age discrimination plaintiffs).

50. *See* Sepehr Shahshahani & Lawrence J. Liu, *Religion and Judging on the Federal Courts of Appeals*, 14 J. EMPIRICAL LEGAL STUD. 716, 740–41 (2017) (finding Jewish judges are more likely to favor claimants in religious liberties cases yet no similar effects for judges of other minority religions).

51. *See* Susan B. Haire et al., *Diversity, Deliberation, and Judicial Opinion Writing*, 1 J.L. & CTS. 303, 320 (2013).

52. BAILEY & MALTZMAN, *supra* note 18, at 144–45. Recently, Justice Sotomayor strongly dissented to the Court's opinion that held college affirmative action programs unconstitutional, stating that the Court's majority "cements a superficial rule of colorblindness as a constitutional principle in an endemically segregated society where race has always mattered and continues to matter." Students for Fair Admissions, Inc. v. President & Fellows of Harvard Coll., 600 U.S. 181, 318 (2023) (Sotomayor, J., dissenting). *But see* Tanya Kateri Hernandez, *Sotomayor's Supreme Court Race Jurisprudence: "Fidelity to the Law*,*"* 123 YALE L.J.F. 479, 482 (2014) (arguing that Justice Sotomayor has not been much of an activist when it comes to opinions on race during the early years of her tenure on our nation's highest court).

repeated questions as to whether her religion would impact her rulings[53] and Justice Jackson faced critiques not only based on her race and gender, but also her brief stint as a public defender.[54] Notably, Justice Blackmun authored the majority opinion in *Roe v. Wade* that legalized abortions after his own daughter was denied an abortion for an unplanned teenage pregnancy.[55] Motivated by this historical anecdote, researchers hypothesized and found evidence that male judges with daughters produced more liberal decisions in a subset of gender-focused cases than their male colleagues with sons.[56]

Race and gender have attracted the most focus from scholars in this fourth category of personal-characteristics models of judging.[57] When it comes to race, at least one study finds that there is no disparity in sentencing practices between Black and non-Black judges.[58] However, there may be panel effects related to a judge's race even if we do not see individual effects. Whereas individual effects occur when a single judge changes their opinion based on a personal demographic characteristic, panel effects usually occur when one judge's personal trait impacts the decision of that panel as a whole, regardless of whether other members of the panel possess that same trait.[59] If an effect is heightened as more members of the panel possess that trait, this would also be considered a panel effect.[60] It would be an individual effect for a Black judge to vote differently on a given case than a non-Black judge; it would be another type of panel effect for the presence of a Black judge on a panel to cause a non-Black judge to vote differently from what we would normally expect of them in a given case.

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53. Tom Gjelten, *Amy Coney Barrett's Catholicism Is Controversial but May Not Be Confirmation Issue*, NPR (Sept. 29, 2020, 5:42 PM), https://www.npr.org/2020/09/29/917943045/amy-coney-barretts-catholicism-is-controversial-but-may-not-be-confirmation-issue [https://perma.cc/2CWM-CG37].

54. Trevor Burrus, Commentary, *Cruz and Cotton's Attacks on Ketanji Brown Jackson's Public Defender Record Prove They Don't 'Get' Due Process*, CATO INST. (Apr. 7, 2022), https://www.cato.org/commentary/cruz-cottons-attacks-ketanji-brown-jacksons-public-defender-record-prove-they-dont-get [https://perma.cc/TKU5-ZMDS]. Notably, Justice Jackson was also asked by Senator Marsha Blackburn to define the word "woman" during her confirmation hearing. Myah Ward, *Blackburn to Jackson: Can You Define 'the Word Woman'?*, POLITICO (Mar. 22, 2022, 10:38 PM), https://www.politico.com/news/2022/03/22/blackburn-jackson-define-the-word-woman-00019543 [https://perma.cc/CK63-KJ5R].

55. LINDA GREENHOUSE, BECOMING JUSTICE BLACKMUN 74–75 (2005).

56. Adam N. Glynn & Maya Sen, *Identifying Judicial Empathy: Does Having Daughters Cause Judges to Rule for Women's Issues?*, 59 AM. J. POL. SCI. 37, 52 (2019).

57. Harris & Sen, *supra* note 44, at 251.

58. Steffensmeier & Britt, *supra* note 46, at 761–62.

59. *See* Chew & Kelley, *supra* note 46, at 1134–35.

60. Kastellec, *supra* note 46, at 168.

In fact, scholars have found that increasing the number of Black judges on a panel increases the probability that the panel will vote in favor of an affirmative action program[61] or a plaintiff with racial discrimination or harassment claims.[62] Interestingly, the behavior of individual judges of all races may also be impacted by changes in the entire court's racial composition. Research demonstrates that increasing the number of Black judges on a court decreases the probability of incarceration for Black defendants.[63] Further, there may be individual race effects in certain niche issue areas, such as Fourth Amendment claims.[64] Although the study of all these personal characteristics and their intersectionality are worth further in-depth analysis, my initial research focuses solely on gender as a predictor for opinion content differentials. In other branches of government, women have been found to produce higher-quality work.[65] One could reasonably expect the same to hold true for women in the judiciary.

Research on gender and judging somewhat mirrors the aforementioned work on race, though the results are more mixed. In this specific area, scholars have considered both whether women judges vote differently than men judges and whether women judges can sway the men on their panel to vote differently.[66] These studies tend to find some gender effects on outcomes in a few narrow issue areas.[67] For example, some research indicates that women judges are more likely to vote for plaintiffs in sex harassment and gender discrimination cases,[68] and that they may even be able to sway their male colleagues to do the same.[69] Interestingly, when it comes to criminal

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61. *Id.* at 179.

62. Chew & Kelley, *supra* note 46, at 1161.

63. Harris, *supra* note 46, at 13–14.

64. Scherer, *supra* note 46, at 669–70 (finding that Black judges may be more likely to accept criminal defendant's claims of police misconduct in search and seizure cases as compared to non-Black judges).

65. *E.g.*, VOLDEN & WISEMAN, *supra* note 14, at 115–16 (finding congresswomen generally score highly on measures of legislative effectiveness). *But see* Volden et al., *supra* note 15, at 338 (finding that the effectiveness of women in Congress changes over time and with their majority/minority party status); Potter & Volden, *supra* note 16, at 104 (finding women-led agencies produce more ambitious rules more successfully, contingent on a work environment supportive of women); Maria J. D'Agostino, *The Difference That Women Make: Government Performance and Women-Led Agencies*, 47 ADMIN. & SOC'Y 532, 540 (2015) (finding that federal employees perceive agencies led by women to function more effectively).

66. Sean Farhang & Gregory Wawro, *Institutional Dynamics on the U.S. Courts of Appeals: Minority Representation Under Panel Decision Making*, 20 J.L. ECON. & ORG. 299, 324–25 (2004).

67. Boyd et al., *supra* note 10, at 406.

68. Peresie, *supra* note 10, at 1776.

69. Farhang & Wawro, *supra* note 66, at 324–25.

sentences, district courts with a higher proportion of women judges tend to issue higher sentences to women defendants, likely as a result of decreased benevolent sexism.[70] One study considers men as the "other"—as opposed to the standard approach of othering women—and finds that male litigants who fail to meet masculinity standards in immigration appeals are less likely to win in front of all-male panels as opposed to panels with greater gender diversity.[71] Such masculinity standards may be another explanation for the initial disparities in sentencing from male judges who are harsher on male defendants.[72] Some scholars have noted stronger gender effects in the federal district courts, adding motion outcomes and likelihood of settlement to the list of dependent variables.[73] Still, these effects appear to be small and do not seem to persist in all issue areas.[74]

2. Theoretical Accounts of Gender and Judging

Scholars of gender and judging propose four separate theoretical models to explain why women judges may (or may not) vote differently than men.[75] In many cases, these theories boil down to differences in the information and experience women have when it comes to issues like workplace discrimination. First, *the representational account* argues that women judges serve as representatives to advance women's interests from the bench.[76] This model predicts that decisions on "gendered" issues will have more favorable outcomes under a woman judge as opposed to her male colleagues.[77] Gendered issues are often defined as those policies which would have a

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70. *See* Max Schanzenbach, *Racial and Sex Disparities in Prison Sentences: The Effect of District-Level Judicial Demographics*, 34 J. LEGAL STUD. 57, 74–75, 90 (2005).

71. *See* Rebecca D. Gill et al., *The Impact of Maleness on Judicial Decision Making: Masculinity, Chivalry, and Immigration Appeals*, 7 POL. GRPS. & IDENTITIES 509, 520–21 (2019).

72. *See* Schanzenbach, *supra* note 70, at 90.

73. Boyd, *supra* note 10, at 795; Christina L. Boyd, *She'll Settle It?*, 1 J.L. & CTS. 193, 212 (2013).

74. Donald R. Songer & Kelly A. Crews-Meyer, *Does Judge Gender Matter? Decision Making in State Supreme Courts*, 81 SOC. SCI. Q. 750, 759–61 (2000); Boyd et al., *supra* note 10, at 406.

75. *See, e.g.*, Boyd et al., *supra* note 10, at 391.

76. HANNA FENICHEL PITKIN, THE CONCEPT OF REPRESENTATION 117–18 (1967) (arguing that judges who are representatives of any type of group are likely to represent the interests of that group).

77. *E.g.*, Beverly B. Cook, *Will Women Judges Make a Difference in Women's Legal Rights? A Prediction from Attitudes and Simulated Behavior*, *in* WOMEN, POWER, AND POLITICAL SYSTEMS 216, 216–17 (Margherita Rendel ed., 1981).

differential impact on women as compared to men.[78] For example, abortion comes to mind as disproportionately affecting women. Under the representational account of gendered judging, women judges tend to favor the "woman's position" in abortion cases and other politically similar cases.[79] This account does not consider whether men on a panel with women will be swayed on such issues; it considers the votes of individual women judges only.

Second, *the different voice account* states that women bring a unique perspective on all issues and ought to differ from male colleagues on the outcome of all types of cases.[80] For example, even in issues that might be observed to have nothing to do with women, like Commerce Clause violations, proponents of this theory would expect women and men judges to decide cases differently. This theory is in tension with the legal model of decision-making described above. That judges might decide cases differently based solely on their own gender would not comport with the theory that the law is the biggest component of a judge's decision-making calculus. Once again, this account hypothesizes only individual effects for women judges and does not consider how their presence might alter the votes of their male colleagues.

Third, under *the experiential account,* women differ in the experiences they have had in life. By sharing these experiences, they can enlighten their colleagues. This model predicts both individual and panel effects for voting differences. Thus, for areas where women have had unique experiences—such as workplace harassment—women judges will not only decide a case outcome differently, but they will also influence their male peers.[81] Though this account is ostensibly similar to the representational account, there are notable differences. First, the representational account only purports to hold for cases that consider "women's issues" whereas the experiential account predicts different outcomes based on gender in all issue areas. Second, there are motivational differences. In the representational model, women judges are seen as strategic actors who want to make tangible policy differences for

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78. Susan J. Carroll, *Woman Candidates and Support for Feminist Concerns: The Closet Feminist Syndrome*, 37 W. POL. Q. 307, 308 (1984).

79. By "woman's position," I refer to a pro-choice decision that values the bodily autonomy of women. Of course, not all women are supportive of abortion. Further, at least one study has shown that men are sometimes *more* supportive of abortion as compared to women. *See* Danny Osborne et al., *Abortion Attitudes: An Overview of Demographic and Ideological Differences*, 43 POL. PSYCH. 29, 67–68 (2022).

80. CAROL GILLIGAN, IN A DIFFERENT VOICE: PSYCHOLOGICAL THEORY AND WOMEN'S DEVELOPMENT 5 (1982).

81. Farhang & Wawro, *supra* note 66, at 324–25.

the betterment of their sex. In the experiential account, women vote differently because of how their experiences have shaped them, without an agenda. Third, the representational account contains no predictions about potential panel effects.

Finally, *the organizational account* contends that there should not be any differences in case outcomes by gender, since all judges have similar education and occupational training.[82] Essentially, proponents of this theory believe that women judges are more similar to men judges than they are dissimilar. This account abides most closely to the legal model of judicial decision-making but diverges most widely from the other three accounts of gender and judging. A finding that women judges vote differently on gender discrimination cases could be supported by any of the first three theories but would certainly not be supported by this final theory.

Christina L. Boyd, Lee Epstein, and Andrew D. Martin test all four accounts by analyzing cases from a variety of issue areas ranging from gender discrimination to the Commerce Clause.[83] They find the most support for the organizational account; that is, there are no differences in how women and men vote in most cases. In fact, the authors found consistent differences in only one of the thirteen issue areas—sex discrimination.[84] Thus, they concluded that both individual and panel effects can exist in gendered judging, but only in issue areas where women judges might have lived experiences that inform their decisions.[85]

Subsequent empirical studies on gender and judging largely mirror this work by Boyd, Epstein, and Martin by considering individual votes or case outcomes as the primary variable of interest.[86] One exception to this trend is a study by Susan B. Haire, Laura P. Moyer, and Shawn Treier.[87] They analyze federal appellate court decisions from 1997 to 2002 across nine issue areas, positing that greater diversity on a panel (i.e., fewer white males) will lead to the inclusion of an increased number of "points of law" in an opinion—signaling that the panel was engaged in greater deliberation because of its

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82. Darrell Steffensmeier & Chris Hebert, *Women and Men Policymakers: Does the Judge's Gender Affect the Sentencing of Criminal Defendants?*, 77 SOC. FORCES 1163, 1165 (1999).

83. Boyd et al., *supra* note 10, at 397–98.

84. *Id.* at 406.

85. *Id.*

86. *See, e.g.*, Timothy L. O'Brien, *Gender, Expert Advice, and Judicial Gatekeeping in the United States*, SOC. SCI. RSCH., May 2018, at 134 (examining the role of gender through an empirical study on judicial decisions about the admissibility of expert testimony). While this approach is useful, it does not consider the entire process whereby judges make decisions to reach these outcomes.

87. Haire et al., *supra* note 51, at 308.

diversity.[88] As a proxy for points of law, the authors consider the number of Westlaw keynotes assigned to cases, finding that greater panel diversity (in terms of combined gender and race) is correlated with longer opinions and more keynotes assigned to each case.[89] These panel effects are interesting, but not enough consideration is given to the individual judge on a given panel. It's important to understand not just how a panel functions, but how each individual judge works on that panel—especially the authoring judge, who is tasked with explaining her ultimate opinion. Thus, a more thorough content analysis of cases is needed to ascertain potential divergences in the judicial decision-making process along gender lines. Furthermore, a consideration of both individual and panel effects is integral to understanding how women shape the judicial process.

C. The Process of Decision-Making

Even if women judges do not differ much from men as to which outcomes they select, they may differ in their engagement with the judicial process that culminates in such outcomes. For example, in general, women may exert more effort during the decision-making process. In a set of in-depth interviews with sixty congressional staffers, Kelly Dittmar uncovers that women feel pressured to work harder than their male counterparts.[90] Another study on the national workforce likewise finds that women across all industries believe they need to expend more effort in their jobs as compared to men.[91] And this perception naturally leads women to work harder than men. For example, women legislators must actively expend more time and effort pandering to constituents to curry favor.[92]

It is reasonable to apply these insights from other branches of government to develop expectations as to how women likely behave on the bench. Research supports that women judges are like women in other branches of government in at least some ways. For example, women judges exhibit the same collaborative tendencies as women in legislatures and executive agencies.[93] Further, women sitting on state courts face uphill battles when

88. *Id.* at 309, 315–16.

89. *See id.* at 320.

90. DITTMAR ET AL., *supra* note 17, at 69–72; *see also* Kelly Dittmar, *Invisible Forces: Gender, Race, and Congressional Staff*, 11 POL. GRPS. & IDENTITIES 1, 14 (2023).

91. Elizabeth H. Gorman & Julie A. Kmec, *We (Have to) Try Harder: Gender and Required Work Effort in Britain and the United States*, 21 GENDER & SOC'Y 828, 844–45 (2007).

92. JEFFREY LAZARUS & AMY STEIGERWALT, GENDERED VULNERABILITY: HOW WOMEN WORK HARDER TO STAY IN OFFICE 174–78 (2018).

93. *See* Peresie, *supra* note 10, at 1781–82.

they are elected rather than appointed—much like women legislators.[94] Similarly, while women on state high courts tend to be less qualified for their positions as compared to men, they have also been found to more efficiently process cases, indicating that they may be working harder at judging.[95] And when women do make the bench, they tend to express greater levels of ambition to climb the courts as compared to men.[96] This desire to ascend the judicial hierarchy actually contrasts with women legislators, who have been found to experience lower levels of progressive ambition (i.e., desire to seek higher office once elected) as compared to their male peers.[97]

Overall, differences in the process by which men and women judges make decisions are understudied, even though most of a judge's time is likely spent considering the merits of a given case. Indeed, finalizing the position of the court requires at least majority support, which involves a great deal of communication and collaboration among judges.[98] It is important to understand not just what decisions judges make, but how and why they come to these conclusions. Greater attention is needed to discern gender differences in this decision-making process. This is especially true as more women attain positions as judges on the federal courts.

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94. Kathleen A. Bratton & Rory L. Spill, *Existing Diversity and Judicial Selection: The Role of the Appointment Method in Establishing Gender Diversity in State Supreme Courts*, 83 SOC. SCI. Q. 504, 514–15 (2002). Interestingly, some research indicates that women lawyers may also be more likely to attain judgeships if their name is more masculine. *See* Bentley Coffey & Patrick A. McLaughlin, *Do Masculine Names Help Female Lawyers Become Judges?*, 11 AM. L. & ECON. REV. 112, 132 (2009).

95. Stephen J. Choi et al., *Judging Women*, 8 J. EMPIRICAL LEGAL STUD. 504, 526 (2011).

96. This effect is also observed in state court justices with minoritized ethnic/racial identities. Jennifer M. Jensen & Wendy L. Martinek, *The Effects of Race and Gender on the Judicial Ambitions of State Trial Court Judges*, 62 POL. RSCH. Q. 379, 388 (2009) ("[B]oth women justices and justices of color are more ambitious than their white male counterparts."). Additionally, nonwhite women justices are much more likely to be progressively ambitious (52.6%) than either nonwhite men (23.2%) or white women (27.1%). *Id.* at 385.

97. *See, e.g.*, Jennie Sweet-Cushman, *Where Does the Pipeline Get Leaky? The Progressive Ambition of School Board Members and Personal and Political Network Recruitment*, 8 POL. GRPS. & IDENTITIES 762, 768 (2018).

98. *See* Rachel Treisman, *What Even Is a Draft Opinion? Here's How the Supreme Court's Process Works*, NPR (May 3, 2022, 1:56 PM), https://www.npr.org/2022/05/03/1096141704/supreme-court-opinion-process [https://perma.cc/4Y35-XGS7].

II. EXPECTED GENDER DIFFERENTIALS AND WHY THEY MIGHT PERSIST

A. Key Expectations

I expect that women on the bench will produce opinions that are longer and contain a greater number of citations as compared to men. Longer, citation-rich opinions may reflect greater attention to the details of a case and more careful reasoning as to the legal principles involved. When an appellate judge is assigned a case, she first receives a record of everything that occurred in the proceedings below, along with the briefs from the parties and any amici. While these briefs are apt to contain citations to key precedent, a judge's chambers will, at times, engage in external research on legal principles relevant to the case at hand. Thus, citations to various types of sources reflect that a judge's chambers have carefully read the materials provided to them and committed more time to research the topics at issue. Increased citations also show that a judge has taken the time to not only read and research, but also write in a manner that justifies each of her factual or legal assertions with specific source material.

As described above, scholars have developed different explanations for why women judges might arrive at different (or similar) outcomes as compared to men.[99] While these accounts do not strictly seek to explain the pre-outcome aspects of the judicial process, they may have some explanatory power as to the types of cases where gender differences in the content of opinions are most likely to occur. To more fully understand why one can expect such content differences to exist, this Article proposes three possible mechanisms: (1) heightened qualifications; (2) socialized gender differences; and (3) perceived or actual threat of bias. Though I do not directly test these mechanisms in this Article, I suspect that the third explanation is the most likely culprit. That is, a woman judge should engage more conscientiously with case materials and legal research if she anticipates that those reading her ultimate opinion—whether a peer judge, attorney, or member of the public—may examine her work with greater scrutiny. For this reason, I also anticipate that there may be variation in the gender gap in opinion content depending on the issue area involved. These issue-area differences will be explored at the end of this Part,[100] after the possible mechanisms for my expectations are set forth in full.

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99. *See supra* Section I.B.2.
100. *See infra* Section II.B.

1. Heightened Qualifications

Under the first explanation, women judges write longer opinions with more citations simply because they are more qualified for their positions than their male counterparts. This theory assumes that highly qualified judges are of a better quality, and that high-quality judges write opinions with a more thorough coverage of the issues (i.e., lengthier) and greater justification for their decision (i.e., more citations). Though women in other branches of government must be more qualified than men to attain certain positions,[101] the same is not necessarily true for women in the judiciary. In fact, the first women to attain federal judgeships were somewhat underqualified as compared to their male peers—partially due to the fact that professional barriers kept women from the experiences of male lawyers.[102] After 1993, however, women judges have tended to be just as qualified, if not more so, than their male counterparts.[103] Of course, federal judges of all genders tend to be highly qualified for their positions, which leaves little room for comparison.[104] Further, the method of selection for federal judges may diminish some of the bias that necessitates higher qualifications for women legislators. Namely, federal judges are selected by elites—appointed by the President and confirmed by the Senate.[105] Such appointment processes theoretically insulate judges from the whims of the people, instead valuing legal expertise and relative impartiality.[106] Further, research has found that women are more likely to be selected to state high courts via assisted appointment methods than electoral methods.[107]

Still, the path to becoming a federal judge is not an easy one. When a vacancy occurs, only the most qualified and composed legal analysts are likely to make a president's short list.[108] However, a nomination is a political game, and a president may need to act strategically to ensure that they do not

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101. Fulton, *supra* note 11, at 310–11.

102. *See* Maya Sen, *Diversity, Qualifications, and Ideology: How Female and Minority Judges Have Changed, or Not Changed, over Time*, 2017 WIS. L. REV. 367, 386, 390–91.

103. *See id.* (finding that women judges have received comparable education relative to their male counterparts and that a slightly higher percentage of women judges have received training from Top 14 programs than have men).

104. *See id.*

105. *See* U.S. CONST. art. II, § 2, cl. 2.

106. *See* Victor Eugene Flango & Craig R. Ducat, *What Difference Does Method of Judicial Selection Make?: Selection Procedures in State Courts of Last Resort*, 5 JUST. SYS. J. 25, 25 (1979).

107. Bratton & Spill, *supra* note 94, at 514–15.

108. William E. Hulbary & Thomas G. Walker, *The Supreme Court Selection Process: Presidential Motivations and Judicial Performances*, 33 W. POL. Q. 185, 194 (1980).

face the embarrassment of a failed nomination.[109] Recent research has found that presidents sometimes consider a number of characteristics of judicial nominees, including ideological leanings, policy reliability, and diversity traits.[110] For example, upon the retirement of Justice Sandra Day O'Connor, then-President Bush promised to appoint a woman to take her place.[111] Recent presidential nominees have campaigned on promises to make historic nominations to the court—such as Joe Biden's successful placement of Justice Ketanji Brown Jackson as the first Black woman to serve on the Supreme Court.[112]

In other branches of government, there is substantial research on the type of women that opt into running for office. Women tend to make this decision strategically, more heavily weighting their chances of success when opting into a campaign as compared to men.[113] Further, women have been found to simply have lower levels of political ambition than similarly situated men.[114] Even among women with relatively high political ambition, breadwinning and caregiving responsibilities may prevent attempts to attain their political goals.[115] If women face similar barriers to entry for the judiciary, then it may be the case that the women who do attain judgeships look different from those who do not.

Further, presidents seeking to appoint a woman to the bench today simply have more options than they did in the past. In recent years, women have overtaken men in law school enrollment, outnumbering them nearly three-to-

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109. Joel K. Goldstein, *Choosing Justices: How Presidents Decide*, 26 J.L. & POL. 425, 435 (2011).

110. *See* Charles M. Cameron et al., *Presidential Selection of Supreme Court Nominees: The Characteristics Approach*, 14 Q.J. POL. SCI. 439, 443 (2019).

111. Press Release, Off. of the Press Sec'y for President George W. Bush, President Nominates Harriet Miers as Supreme Court Justice (Oct. 3, 2005, 8:01 AM), https://georgewbush-whitehouse.archives.gov/news/releases/2005/10/20051003.html [https://perma.cc/UF5B-CXN4]. Of course, President Bush's efforts to do so were a well-known failure, and the vacancy was eventually taken up by Justice Samuel Alito. Marianne Levine, *How to Lose a Supreme Court Nominee in 24 Days*, POLITICO (Feb. 9, 2022, 4:30 AM), https://www.politico.com/news/magazine/2022/02/09/supreme-court-nomination-collapse-biden-harriet-miers-bush-dan-coats-00006918 [https://perma.cc/D22P-YCV9].

112. Jake Tapper et al., *Biden Nominates Ketanji Brown Jackson to Be First Black Woman to Sit on Supreme Court*, CNN (Feb. 25, 2022, 5:01 PM), https://www.cnn.com/2022/02/25/politics/supreme-court-ketanji-brown-jackson/index.html [https://perma.cc/G5VT-WKRM].

113. Sarah A. Fulton et al., *The Sense of a Woman: Gender, Ambition, and the Decision to Run for Congress*, 59 POL. RSCH. Q. 235, 244–45 (2006).

114. Richard L. Fox & Jennifer L. Lawless, *The Invincible Gender Gap in Political Ambition*, 57 PS 231, 232 (2024).

115. Rachel Bernhard et al., *To Emerge? Breadwinning, Motherhood, and Women's Decisions to Run for Office*, 115 AM. POL. SCI. REV. 379, 387–88 (2021).

two in 2023.[116] As of early 2024, women also now comprise more than 50% of all associates at law firms.[117] Thus, presidents can theoretically be more selective when nominating women to the bench—ensuring the women that attain these positions are as highly qualified as possible. While the federal judiciary is still far from gender parity, the percentage of women on the courts has certainly increased over time.[118] If these women truly are of a higher quality than corollary men, we would expect their work product to reflect this high quality—namely in the production of longer, more citation-rich judicial opinions.

2. Socialization Differences

The second possible explanation as to why women judges may produce opinions that differ in their content is based on socialized gender differences. This theory assumes that women are socialized to work in a way that produces lengthier, more highly justified judicial opinions. Qualitative data suggests women judges have different experiences, attitudes, and perspectives than men on the court.[119] For example, women judges surveyed in 1990 viewed themselves as more marginalized during childhood, were more supportive of women's changing role in society, struggled more with their work-life balance, and experienced more instances of gendered bias in the workplace.[120] Even if others do not hold gendered expectations related to these norms, women may still behave differently simply due to their socialization. I anticipate that these differences in socialization will lead women to expend more effort justifying their decisions through longer opinions with more citations. However, it is somewhat difficult to analyze these socialization differences without further surveys or interviews. Future work in this area is

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116. Staci Zaretsky, *Women Continue to Make History When It Comes to Law School Enrollment*, ABOVE L. (Jan. 4, 2024, 12:12 PM), https://abovethelaw.com/2024/01/women-continue-to-make-history-when-it-comes-to-law-school-enrollment [https://perma.cc/7XRL-96X2].

117. Tatyana Monnay, *Women Exceed 50% of Law Firm Associates for First Time*, BLOOMBERG L. (Jan. 9, 2024, 12:30 PM), https://www.bloomberglaw.com/bloomberglawnews/business-and-practice/XE00SNN8000000.

118. John Gramlich, *Most of Biden's Appointed Judges to Date Are Women, Racial or Ethnic Minorities—A First for Any President*, PEW RSCH. CTR. (Dec. 4, 2023), https://www.pewresearch.org/short-reads/2023/12/04/most-of-bidens-appointed-judges-to-date-are-women-racial-or-ethnic-minorities-a-first-for-any-president [https://perma.cc/LP6P-BL7M] (noting that President Trump notoriously appointed very few women, but President Biden has begun to balance that out, with approximately 66% of his nominees being women).

119. Martin, *supra* note 5, at 208.

120. *Id.* at 205–07.

necessary to uncover the pervasiveness of gendered social norms on the behavior of judges.

3. Threatened Gender Bias

The final potential explanation for gender differences in judicial decision-making pertains to either actual or perceived biases against women on the court. Qualitative data suggests that women attorneys perceive bias against them in the courtroom.[121] Since most women judges are former attorneys, they are likely also concerned about these biases. And this perception may be rooted in reality—one survey experiment of the public found that men are less supportive of decisions made by women judges as compared to those decisions made by male judges.[122] Data from confirmation hearings show that potential justices who are women are treated differently from those who are men.[123] Further, women sitting on state courts consistently receive lower rates of recommendation for retention from state attorneys.[124] This threat of bias has, in other circumstances, forced women to work harder to receive positive reception from the American citizenry.[125] Accordingly, this perception has the potential to lead women judges to produce longer opinions with more citations to justify their decisions.

Public opinion can further compel women to heightened performance. Anecdotal evidence finds that judges care about how the public perceives them—likely because this perception may correlate with notions of institutional legitimacy for the court.[126] As Second Circuit Judge Raymond J.

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121. *See* Shari Hodgson & Bert Pryor, *Sex Discrimination in the Courtroom: Attorney Gender and Credibility*, 55 PSYCH. REPS. 483 (1984).

122. *See* Fix & Johnson, *supra* note 7, at 1874.

123. Boyd et al., *supra* note 8, at 895.

124. Rebecca D. Gill et al., *Are Judicial Performance Evaluations Fair to Women and Minorities? A Cautionary Tale from Clark County, Nevada*, 45 LAW & SOC'Y REV. 731, 742 (2011).

125. *See* Fulton, *supra* note 11, at 310.

126. *See, e.g.*, Dino P. Christenson & David M. Glick, *Chief Justice Roberts's Health Care Decision Disrobed: The Microfoundations of the Supreme Court's Legitimacy*, 59 AM. J. POL. SCI. 403 (2015); Roy B. Flemming & B. Dan Wood, *The Public and the Supreme Court: Individual Justice Responsiveness to American Policy Moods*, 41 AM. J. POL. SCI. 468, 493 (1997) (finding that judicial opinions are responsive to changes in public moods). *But see* Micheal W. Giles et al., *The Supreme Court in American Democracy: Unraveling the Linkages Between Public Opinion and Judicial Decision Making*, 70 J. POL. 293, 295, 303 (2008) (finding that judges actually change their attitudes on issues along with the public through "mutually experienced events and ideas" rather than merely adopting public views to satisfy legitimacy concerns). Additionally, public confidence in the Court can increase congressional support for the

Lohier summarizes, "we really have nothing other than public confidence to protect the [judicial] branch. . . . [A] lack of confidence increases the risk that actors—it could be public actors, legislatures, certainly ordinary people—are just over time going to ignore our orders and mandates."[127] And if the effects of media attention are any indication, judges create more draft opinions, work on opinions for a longer period of time, and are more likely to hear re-argument in a case when the public is closely watching.[128] Interestingly, the Chief Justice of the Supreme Court may be even more attuned to public opinion as compared to Associate Justices.[129] The watchful eye of the public may be particularly salient to judges today, as notions of public confidence drop to all-time lows.[130] And this concern may be even more pressing for women judges, who already appear to receive extra scrutiny from the public as compared to men on the court.[131]

Court, to the extent judges are aware of and care about this fact. *See* Joseph Daniel Ura & Patrick C. Wohlfarth, *"An Appeal to the People": Public Opinion and Congressional Support for the Supreme Court*, 72 J. POL. 939, 950 (2010).

127. Raymond J. Lohier, Jr. et al., *Losing Faith: Why Public Distrust in the Judiciary Matters—and What Judges Can Do About It*, 106 JUDICATURE 71, 72 (2022). Of course, this desire to assuage the public can also come into tension with the notion that judges ought to be impartial decisionmakers free from the tethers of popular mandate. *See* William Spruance, *Heckling the Umpire: John Roberts, Public Scrutiny, and the Court's Legitimacy*, 19 GEO. J.L. & PUB. POL'Y 633, 636 (2021).

128. *See* Alex Badas & Billy Justus, *Media Attention and Deliberation on the Supreme Court*, 76 POL. RSCH. Q. 757, 765 (2023).

129. *See* Alex Badas, *The Chief Justice and Judicial Legitimacy Evidence from the Influence of Public Opinion*, 42 JUST. SYS. J. 150, 159 (2021) ("[T]he Chief Justice is more influenced than the Associate Justices by the public mood.").

130. Lohier et al., *supra* note 127, at 71. Note that long-standing faith in an institution can persist even while citizens express distaste for a current Court. *See, e.g.*, Neil Malhotra & Stephen A. Jessee, *Ideological Proximity and Support for the Supreme Court*, 36 POL. BEHAV. 817, 842 (2014). Provided that the institution continues to abide by notions of relative procedural fairness, citizens are likely to continue to comply with its decisions even if they dislike those outcomes. *See* Cassandra Burke Robertson, *Judicial Impartiality in a Partisan Era*, 70 FLA. L. REV. 739, 772–74 (2018).

131. *See, e.g.*, Elizabeth A. Tomsich & Mary E. Guy, *Perceptions of Authority: How Gender Affects Citizen Ratings of Judges*, 46 ADMIN. & SOC'Y 471, 476, 488 (2014) (finding that women traffic court judges are viewed differently from men traffic court judges). However, one study found that "the extent to which judges reflected issue-specific public opinion . . . does not change based upon whether the judge is male or female." Christina L. Boyd & Michael J. Nelson, *The Effects of Trial Judge Gender and Public Opinion on Criminal Sentencing Decisions*, 70 VAND. L. REV. 1819, 1841 (2017).

Beyond the public, judges likely care about how they are perceived by their colleagues.[132] This concern may be heightened for women on the bench if they are particularly scrutinized for their gender. Studies show that male judges treat women in the courtroom differently than they treat men.[133] Men on the bench tend to exert negative communication behaviors not just against subordinate women, but even against their women colleagues.[134] If women on the court perceive this behavior to be indicative of gender bias, they may seek opportunities to prove their worth as judges. It thus follows that women on the court will be more apt to write opinions that are longer and rely more heavily on citations (i.e., more well-justified) as compared to men who presumably do not feel such a need to moderate perceived (or actual) biases.

B. Subsidiary Expectations

This Article seeks to discern whether there are gendered differentials in the content of judicial opinions in general. However, there may be salient heterogeneity in such differentials depending on the legal issues up for debate in any given case. Recall that research on case outcomes finds that women judges vote similarly to men except in areas where they have experiential knowledge like sexual harassment.[135] Women judges may also shape the content of their opinions differently when dealing with such issues. Especially for cases involving sexual harassment, women judges may be primed to consider their personal gender and the biases they have faced because of it. If concern about these biases is heightened, women judges may feel even more pressure to perform, thus ensuring through opinion length and citation engagement that they have thoroughly researched and justified each point made throughout their opinion. Thus, as a subsidiary expectation, I anticipate that the largest gender gap in opinion content will persist for "gendered" issue areas, as compared to other types of issue areas.[136]

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132. *See* Gregory A. Caldeira & Christopher J. W. Zorn, *Of Time and Consensual Norms in the Supreme Court*, 42 AM. J. POL. SCI. 874, 877 (1998) (arguing that justices consider future reciprocal treatment from their colleagues when deciding whether to write or join a dissent or concurrence).

133. *See* Lilia M. Cortina et al., *What's Gender Got to Do with It? Incivility in the Federal Courts*, 27 LAW & SOC. INQUIRY 235, 244 (2002); Dana Patton & Joseph L. Smith, *Lawyer, Interrupted: Gender Bias in Oral Arguments at the US Supreme Court*, 5 J.L. & CTS. 337, 354 (2017).

134. *See, e.g.*, Tonja Jacobi & Dylan Schweers, *Justice, Interrupted: The Effect of Gender, Ideology and Seniority at Supreme Court Oral Arguments*, 103 VA. L. REV. 1379, 1458–59 (2017); Cortina et al., *supra* note 133 at 246–47.

135. *See* Boyd et al., *supra* note 10, at 406.

136. For a full listing of issue areas and their subgroupings, see *infra* Section III.A.

I also anticipate that women work harder on cases involving the rights of those with other marginalized identifiers. Standpoint theories of gender predict that women see the world differently from men because of their relative position as outsiders in society.[137] Some researchers posit that women will also empathize with other marginalized communities, so long as they perceive themselves as being a part of a gender minority.[138] As such, some scholars of the judiciary have argued that minoritized judges may empathize and rule in favor of litigants with marginalized identities.[139] In fact, research has shown that women are more likely to rule in favor of individuals with minoritized sexual orientation or gender identities,[140] though there does not appear to be gender differentials in the outcomes of race discrimination[141] or disability advocacy cases.[142] Nonetheless, I predict that women will produce lengthier, more citation-rich cases when the issue involves individuals from other marginalized communities. Again, I anticipate that this effect will persist because women judges are primed to think about their own gender identity when considering cases regarding the rights and treatment of other underrepresented groups, causing them to work harder to counteract bias against them as women when writing an opinion. However, this priming should not be as severe as during consideration of gendered issues, where bias becomes extremely salient. Thus, my predictions suggest that the gender gap in opinion length and citation engagement for issue areas involving marginalized identities will be larger than that for neutral issue areas but smaller than that for cases involving gendered issues.

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137. *See, e.g.*, Patricia Y. Martin et al., *Gender Bias and Feminist Consciousness Among Judges and Attorneys: A Standpoint Theory Analysis*, 27 SIGNS 665, 667 (2002).

138. Judy P. Strauss, *Perceived Minority Status and Diversity Attitudes: An Exploratory Study*, 101 PSYCH. REPS. 849, 853 (2007).

139. Jill D. Weinberg & Laura Beth Nielsen, *Examining Empathy: Discrimination, Experience, and Judicial Decisionmaking*, 85 S. CAL. L. REV. 313, 326 (2012).

140. Fred O. Smith Jr., *Gendered Justice: Do Male and Female Judges Rule Differently on Questions of Gay Rights?*, 57 STAN. L. REV. 2087, 2100 (2005).

141. Boyd, *supra* note 10, at 793 (analyzing these effects in district court judges).

142. Christina L. Boyd & Adam G. Rutkowski, *Judicial Behavior in Disability Cases: Do Judge Sex and Race Matter?*, 8 POL. GRPS. & IDENTITIES 834, 839 (2020) (analyzing these effects in district court judges).

III. DATA ANALYSIS

A. Sample of Cases

To investigate my hypothesis, I compiled a new dataset of U.S. Courts of Appeals cases. Given that the Supreme Court hears only around 1% of cases appealed to it, the lower federal appellate courts make the bulk of final legal decisions in the United States. My dataset includes cases in fourteen issue areas: (1) abortion; (2) disability advocacy; (3) affirmative action; (4) campaign finance; (5) capital punishment; (6) Commerce Clause; (7) Contract Clause; (8) piercing the corporate veil; (9) criminal appeals; (10) environmental protection; (11) gender discrimination; (12) race discrimination; (13) sexual harassment; and (14) takings.[143] To collect these cases, I ran a series of keyword searches with Boolean connectors on Westlaw.[144] Less than 4% of cases include two issue areas; this was somewhat common in employment discrimination suits, which may claim any combination of ADA, Title VII race discrimination, Title VII gender discrimination, and/or sexual harassment. Throughout the data analysis, I organize these issue areas into three subsets: (1) overtly "gendered" cases (i.e., abortion, sexual harassment, and gender discrimination); (2) cases considering the rights of "marginalized" groups (i.e., disability advocacy, affirmative action, and race discrimination); and (3) ostensibly "neutral" cases (i.e., the remaining eight issue areas).

Searches were limited to published opinions from January 1, 2000, through January 1, 2024. Although the first woman was appointed to the federal circuit courts in 1934, the third was not appointed until 1979. Thus, scholars hoping to study women on the bench are somewhat time-limited if they wish to have more than three judges in their dataset. Today, the percentage of women serving as non-senior judges on these courts is

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143. These fourteen issue areas were initially selected by Sunstein, Schkade, and Ellman to test the attitudinal model of judicial decision-making—that is, whether the ideology of a judge explains her decision in a particular case. *See* Sunstein et al., *supra* note 20, at 311–13. Later work on whether gender factored into the attitudinal model utilized the Sunstein et al. database but eliminated cases on criminal appeals. Boyd et al., *supra* note 10, at 397–98. Because these data are more than a few years old at this point (and because the dataset does not include the full content of the opinions within), I choose to collect new cases, replicating in part the collection method employed by previous scholars.

144. Boolean connectors ensure the search terms are connected in specific ways so as not to be overbroad. For example, the Boolean term "/s" between two words ensures those words appear together in the same sentence. Search terms were modified from similar searches run by Sunstein et al., *supra* note 20, at 311–13. These searches can be found in Appendix A, *infra*, along with a numerical breakdown of cases by issue area.

approximately 43%.[145] I begin the analysis in 2000, when the percentage of women serving on federal courts crossed the 20% threshold.[146] Thus, I am able to improve on this work by analyzing a time period in which there are simply more women on the bench. Further, twenty-three years' worth of data in the courts of appeals provides a substantial number of cases for testing. I exclude all cases written *per curiam* from analysis as it is difficult to discover the gender of the author for such cases. I also exclude *en banc* cases from my initial analysis to hold constant the number of judges on a panel. My final dataset includes information on 8,849 cases.

In general, the lower federal appellate courts hear a case in a panel randomly assigned to that grouping and to the case by their circuit clerk of court.[147] Once a case is heard, the panel usually attends a "case conference," where tentative votes are cast and the presiding judge—either the Chief or the most senior judge on the panel—assigns the opinion to be written by a judge who has cast their tentative vote for the majority. In no circuit is the presiding judge required to randomize opinion authorship assignments. Some evidence indicates that presiding judges are no more likely to assign opinions to ideologically proximate colleagues as compared to ideologically distant colleagues.[148] However, this same work presents results that for sexual harassment cases in which the survivor is slated to win, opinions are substantially more likely to be assigned to either women or liberal judges.[149] However, if these types of judges are more likely to vote for the survivor in

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145. As of August 5, 2024, there are 72 women appointed to 178 spots. Although there are 179 authorized judgeships on the federal appellate courts, there is currently one vacancy. For (active) senior judges, 26 out of 112 (~23%) are women. The D.C. Circuit and Second Circuit (covering New York, Connecticut, Vermont, and the Virgin Islands) have the highest percentage of women: roughly 55% (6 out of 11) and 53% (7 out of 13), respectively. The Eighth Circuit (covering Arkansas, Iowa, Minnesota, Missouri, Nebraska, and North Dakota) has the lowest percentage of women on the bench at only about 9% (1 out of 11). I collected this data from government websites on the courts of appeals as well as relevant *Wikipedia* pages.

146. This threshold was calculated using a dataset of all past and present judges on the federal circuit courts as collected from government websites and relevant *Wikipedia* pages. Data is available upon request. The 20% threshold was selected to allow for a large enough number of cases in my dataset to potentially be written by women. Note that the only other research considering the content of judicial opinions uses data from a time period in which women comprised just about 20% of the bench. *See* Haire et al., *supra* note 51, at 309.

147. This information was collected by reviewing the publicly available Internal Operating Procedures of each circuit, or the practitioner's guide for the Tenth Circuit, for which I was unable to find Internal Operating Procedures. For more information about the practices of the circuits, see *infra* Appendix B.

148. Sean Farhang et al., *The Politics of Opinion Assignment and Authorship on the US Courts of Appeals: Evidence from Sexual Harassment Cases*, 44 J. LEGAL STUD. S59, S78 (2015).

149. *Id.* at S76–77.

the first place, then their chances of authoring the opinion should likewise increase. To account for any potential bias in the assignment of cases by issue area, I run a model that includes issue-area-fixed effects—essentially holding the issue area constant to determine whether there are still gender effects within each issue area. I also include a model with circuit-fixed effects to account for any court-level idiosyncrasies.

B. Measuring Gender

To measure the gender of the judge who authored a given opinion, I first automatically capture the author's name using a regular expression—a sequence of characters specified to match a pattern within text-as-data.[150] I then identify the author's gender using data from the Federal Judicial Center ("FJC"). The FJC publishes an up-to-date spreadsheet of all current federal judges with substantial data on their individual personal characteristics. Once I captured authoring judge names, I manually went through the data and coded the judge's unique identifier to correspond with the judicial identifier codes specified by the FJC database, merging in demographic data from the FJC.[151]

Figure 1 shows the gender composition of judges in my dataset over time. The average percentage of women judges in my dataset between 2000 and 2023 is about 23%. This figure has steadily increased over the past twenty-three years, albeit at a relatively slow pace. In 2000, roughly 16% of judges

150. MARCO T. MORAZÁN, PROGRAMMING-BASED FORMAL LANGUAGES AND AUTOMATA THEORY 63 (2024). Appendix C, *infra*, describes this approach in detail and provides examples of regular expressions used.

151. Note that this figure does not show all federal judges, merely those that show up in my dataset (including some district court judges). Since the regular expression returns only the judge's last name, I manually verified several cases to see which judge was the author. For example, an opinion authored by "CARNES, J." on the Eleventh Circuit from 2014 to 2023 may have either been written Julie E. Carnes or Ed Carnes. Given that these two judges are of different genders, it was especially important to look up the case and manually validate the authoring judge. Additionally, some cases were not able to capture the name of an appellate judge due to irregularities in the form of the opinion, for which I again manually looked up these cases and their authors. Nonetheless, the regular expression approach proved generally accurate for capturing author name. On a random sample of 25 cases, the expression correctly identified the authoring judge's name for 22 cases. In the other 3 cases, no appellate judge name was captured. So, while the regular expression sometimes failed to capture a name, it never captured an inaccurate name within the random sample.

were women; in 2023, about 32% of judges were women. This reflects an increase of about 0.7% in women each year.[152]

Figure 1. Percentage of Women and Men on the Bench by Year, 2000–2023

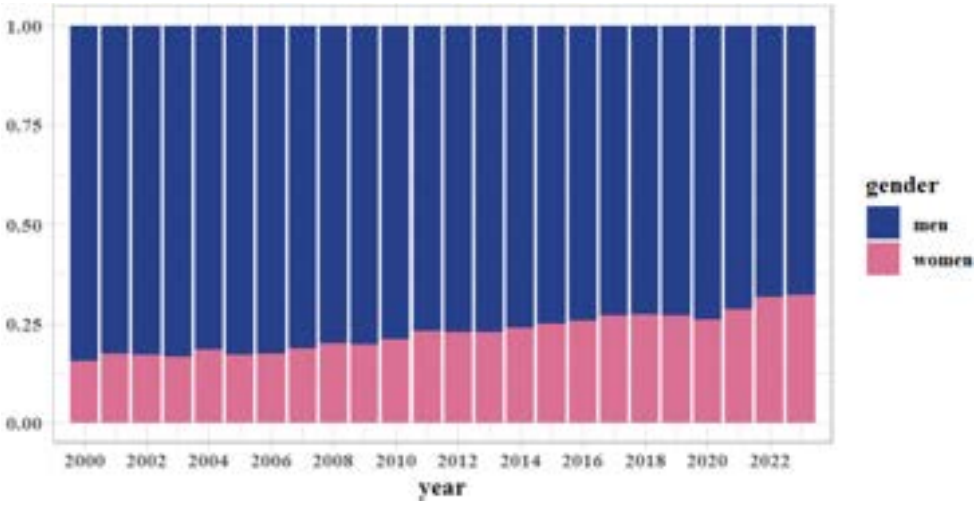


Table 1 shows the breakdown of these cases by issue area and authorship. Note that a large plurality of cases in the dataset (approximately 41%) relate to criminal appeals. Cases involving the Commerce Clause make up the smallest subset of the data (about 1%). Across all issue areas, the percentage of women-authored opinions spans from about 20% to 35%, with an average of about 24% over all cases. Women tend to author a comparatively high percentage of abortion, environmental protection, and gender discrimination majority opinions, suggesting a possible (albeit slight) bias in assigning cases about women's issues to be authored by women judges.[153] The percentage of

152. The number of total judges during this period does fluctuate somewhat over time. This change is not a result of increases in the total number of authorized judgeships, which have remained stagnant since 2000. Rather, increases in judges are likely a result of: (1) variation in unfilled vacancies due to a judge's retirement; (2) increased numbers of judges taking senior status; and/or (3) idiosyncrasies within my data.

153. Note that, while I do not consider "environmental protection" to be a "gendered" issue for the purposes of my analyses, other studies have noted that the environment tends to be prioritized by women legislators and thus might be considered a so-called "women's issue." Thomas H. Little et al., *A View from the Top: Gender Differences in Legislative Priorities Among State Legislative Leaders*, 22 WOMEN & POL. 29, 41 (2001).

women-authored opinions is lowest for cases encompassing either campaign finance or affirmative action.

Table 1. Descriptive Statistics for All Cases by Issue Area

issue area	**total cases**	**woman authored**
abortion	200	69 (34.5%)
disability advocacy	444	113 (~25.5%)
affirmative action	114	23 (~20.2%)
campaign finance	154	32 (~20.8%)
capital punishment	624	159 (~25.5%)
Commerce Clause	83	18 (~21.7%)
Contract Clause	182	45 (~24.6%)
corporate veil	521	127 (~24.4%)
criminal appeals	3590	780 (~21.7%)
environmental protection	498	145 (~29.1%)
gender discrimination	451	123 (~27.3%)
race discrimination	699	161 (~23.0%)
sexual harassment	786	201 (~25.6%)
takings	503	125 (~24.9%)

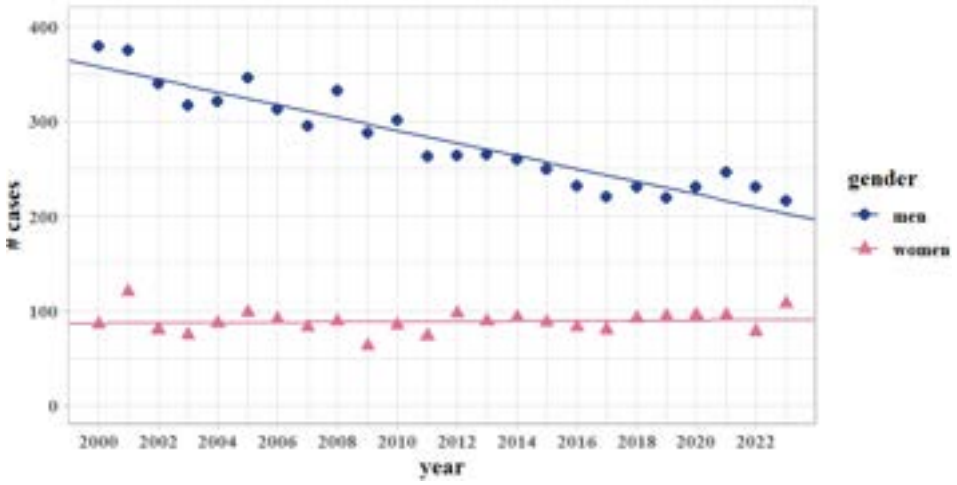
Figure 2 charts how authorship has changed over time. The points plotted reflect the number of cases authored by women and men each year from 2000 to 2023. The lines plot the trends for these points by gender.[154] This figure shows a decrease in total cases over time. Reports generally find that the judicial workload increased from 2000 to 2014,[155] but has been decreasing

154. These trend lines were calculated using standard regression, as explained *infra* Section IV.B.

155. *As Workloads Rise in Federal Courts, Judge Counts Remain Flat*, TRAC REPS. (Oct. 14, 2014), https://trac.syr.edu/tracreports/judge/364 [https://perma.cc/7X2B-X2WC].

from 2014 to 2023.[156] Even if case intake is on the rise, high levels of settlement can cause a decrease in opinions despite workloads remaining high. This figure shows that the gender gap in authorship has decreased over time, consistent with the fact that more women have attained judgeships over this same period. In 2000, women were responsible for 86 of the 465 cases in this dataset (about 18%); by 2023, women authored 108 of the 324 opinions (about 33%). Thus, at both ends of the timeline, the percentage of cases authored by women is roughly commensurate to the percentage of total women on the bench.

Figure 2. Number of Cases in Dataset by Gender, 2000–2023



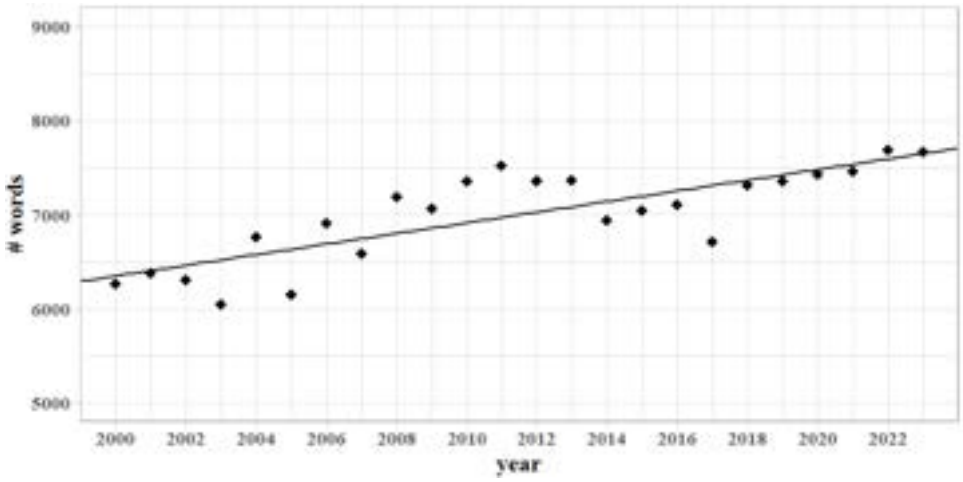
C. Measuring Length and Citation Counts

I expect that the gender of an authoring judge will impact the length of their opinion as well as the number of citations present in that opinion. Accordingly, I use seven different measures of opinion length and citations: (1) length of opinion (in words); (2) total number of cites; (3) number of case cites; (4) number of legal authority cites; (5) number of secondary source cites; (6) number of brief citations; and (7) number of record citations. Once again, I rely on a regular expressions approach. First, I use this method to extract the text of just the majority opinion (and footnotes), thus preventing

156. *See Federal Judicial Caseload Statistics 2023*, U.S. CTS., https://www.uscourts.gov/data-news/reports/statistical-reports/federal-judicial-caseload-statistics/federal-judicial-caseload-statistics-2023 [https://perma.cc/3F7H-6RQ2].

any attribution of citations in concurrences and dissents to the majority author.[157] Then, I collect every instance of each type of citation, categorize it, and count how many citations exist in each category. I also calculate length as simply the number of words in the majority opinion for each case. The average length of an opinion in my dataset is 6,953 words (or about 9.9 pages).[158] Figure 3 plots the average length of an opinion in each year with a trend line tracing that relationship over time. An average case from the year 2000 contains about 6,270 words (9.0 pages), whereas an average case from 2023 has approximately 7,668 words (11.0 pages).

Figure 3. Scatterplot of Average Opinion Length (in Words), with Trend Lines, 2000–2023



My primary analysis focuses on a cumulative measure of all citations. However, I also sort citations into several categories to discern whether gender has a differential impact on different types of citations. The five categories of citations are those made to: (1) cases; (2) legal authority; (3) secondary sources; (4) legal briefs; and (5) the record. I anticipate that women will produce opinions with higher numbers of all citation types. Cases are likely the most important sources to cite for fear of being overturned;

157. Analyses of these variables in concurrences and dissents is outside the scope of this current research. In part, I do not include these opinions because—at least in the circuit courts—they likely carry less weight, so judges may have less of an interest in ensuring these are the best work they can produce. Further research is needed to test whether this assumption is supported by the data.

158. For further descriptive statistics on these variables, see *infra* Appendix D.

other types of citations are simply less necessary to explaining the outcome of a given case. Nonetheless, women who wish to justify their positions more thoroughly may cite more highly not just to such cases, but also to relevant legal authority, secondary sources, briefs, and the record.

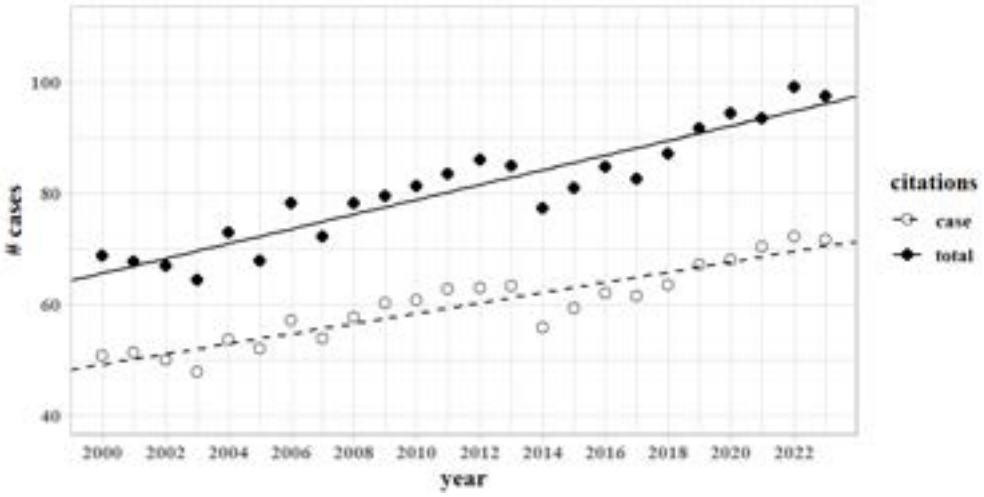
Case citations are those that cite to any court case. Note that this covers more than those cases that represent binding precedent for given courts to follow (i.e., cases from that specific court or the court to which it appeals). In fact, this designation extends beyond even cases which would represent persuasive precedent (i.e., cases from similarly situated courts such as a sister circuit). I capture such citations as well as citations to lower- and even state-court opinions. Legal authority citations are those that cite to statutes, legislative records or hearings, administrative action, and the previous record of the case.[159] Many cases involve challenges to statutes, and thus the majority of cases should have at least a few authoritative citations to the act at issue. In addition to legal authority citations, I also collect citations to secondary sources (such as *Black's Law Dictionary,* the *Restatement of Contracts*, etc.), legal briefs by the parties and any amici, and citations to the record—that is, any motion, transcripts, depositions, orders, and such in the courts below. These latter three types of citations are relatively rare in the dataset. Whereas citations to legal authority compose about 18.0% of all citations on average, citations to the record, secondary sources, and briefs compose only about 5.3%, 1.8%, and 0.9% of all citations, respectively.

As with opinion length, the total number of citations (average = 79.7) has generally increased over time. Figure 4 plots the average total citations for each year with a trend line tracing this relationship over time. An average case included about 68.7 total citations in 2000 and approximately 97.4 citations in 2023. The majority of total citations cite to other court cases—a trend also charted in Figure 4. The prevalence of case citations in comparison to all citations varies only slightly over time. In 2000, case citations composed approximately 73.8% of all citations; in 2023, about 73.5% of all citations cited to court cases. Appendix E reports these trends for legal

159. Note that the number of these types of citations will almost certainly vary by issue area. For example, any case handling a challenge to an agency rule is bound to cite to that rule a variety of times in at least the facts section of the opinion. Means of key variables by issue area can be viewed in Appendix F, *infra*. Capital punishment cases average the longest with about 10,074 words, whereas race and gender discrimination cases tend to lead to the shortest opinions with averages of about 5,093 and about 5,320 words, respectively. Race and gender discrimination cases also have the fewest average total citations (about 54.09 and about 56.57, respectively). The cases with the most total citations involve campaign finance or the Commerce Clause (with about 123.43 and about 122.40 citations, respectively).

authority citations, secondary source citations, legal brief citations, and citations to the record.[160]

Figure 4. Scatterplot of Average Total and Case Citations, with Trend Lines, 2000–2023



IV. KEY FINDINGS

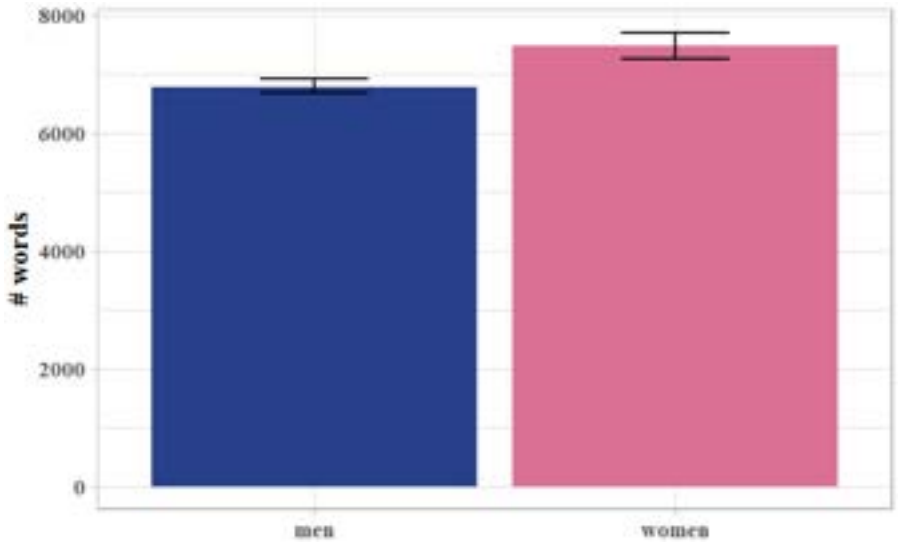
A. Descriptive Gender Differentials

Descriptive evidence from the data provides preliminary support for my expectations. Importantly, there are statistically significant differences in the means of opinion length and total citations, as can be seen in Figures 5 and

160. All types of citations tend to be increasing over time except citations to secondary sources, which appear to be on the decline. One possible explanation for this trend in increased length/citations is that there has been an increase in law clerks over the past several years while judgeships remained stagnant, suggesting that each judge may have more clerks on their payroll that may be able to spend more time on the production of these higher-quality opinions. *See Judicial Law Clerks*, DATA USA, https://datausa.io/profile/soc/judicial-law-clerks [https://perma.cc/GZ6U-FFQH]. And, if women law clerks are more diligent than their male counterparts in line with my theory for judges, an increase in women and minority clerks may have further enhanced the quality of opinions over time. Women clerks have outnumbered men for some time now, and the disparity has rapidly increased since 2019. *See id.* This may be partially due to the fact that judges purportedly have prioritized diversity in creating their offices in recent years. *See* Jeremy D. Fogel, et al., *Law Clerk Selection and Diversity: Insights from Fifty Sitting Judges of the Federal Courts of Appeals*, 137 HARV. L. REV. 588, 611 (2023).

6. Figure 5 shows that women author opinions average an additional page, with woman-authored opinions including an average of 7,480 words (10.7 pages) and man-authored opinions averaging about 6,786 words (9.7 pages). Figure 6 shows that women-authored opinions include about 11 more total citations as compared to opinions authored by men, with averages of about 88.1 and 77.1 citations, respectively. *T*-tests of these differences in means produce highly statistically significant results.[161]

Figure 5. Average Opinion Length (in Words) by Gender of Opinion Author



161. That is, both *t*-tests produce results at the level of $p < 0.001$. In fact, both *p*-values for these tests are smaller than 0.000001.

Figure 6. Average Total Citations by Gender of Opinion Author

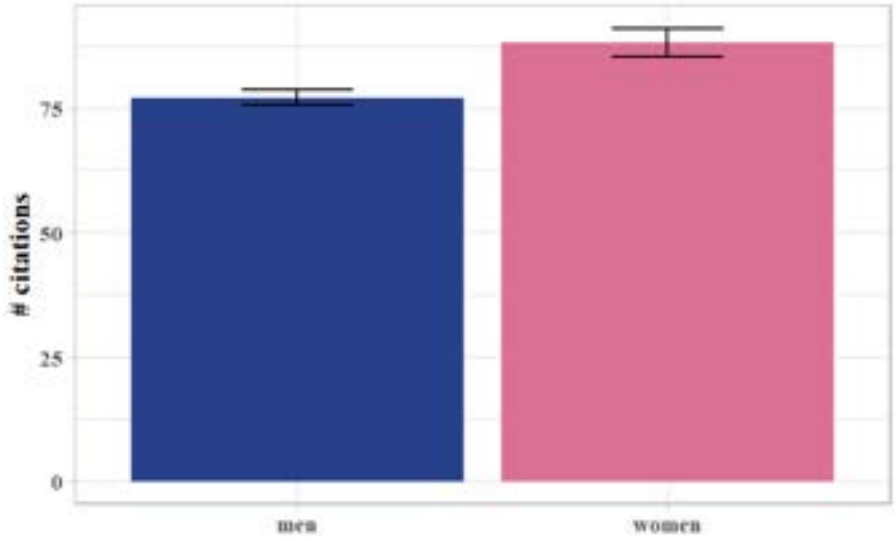
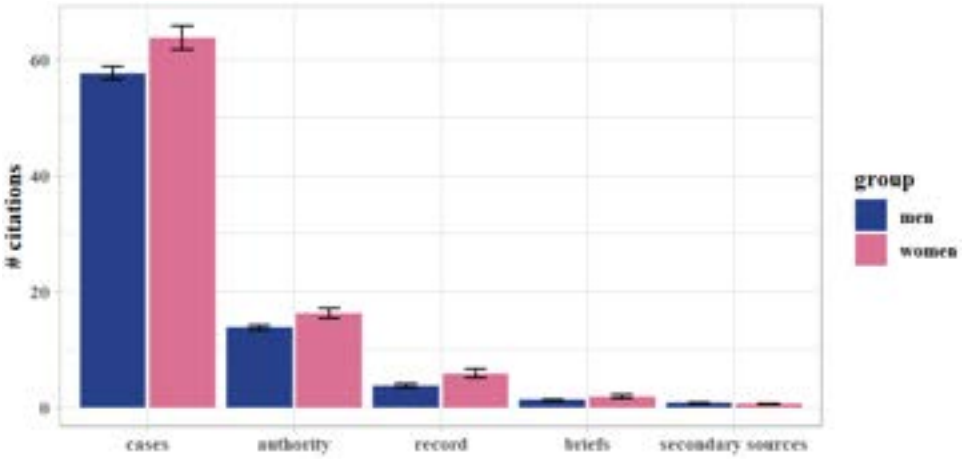


Figure 7 presents differences in means for each type of citation. On average, with respect to majority opinions written by men, majority opinions written by women include about 6.1 more citations to cases, 2.4 more citations to legal authority, 2.1 more citations to the record, and 0.55 more citations to legal briefs. Women-authored opinions are also predicted to include about 0.16 *fewer* citations to secondary sources. All five of these differences are statistically significant at the most stringent threshold.[162] Note that the final difference in means for secondary sources is in the opposite direction of what is expected, indicating that men author opinions with a greater number of these types of citations. However, recall that these types of citations are relatively rare—about 17% of cases in my data include at least one citation to secondary sources and just 10% include more than one citation to such sources.

162. That is, significant at the level of $p < 0.01$. In fact, with the exception of the *t*-tests on briefs and secondary sources, all differences attain *p*-values < 0.00001.

Figure 7. Average Citations by Type and Gender of Opinion Author



Trend lines predict that this gender gap is increasing slightly over time. Figures 8 and 9 plot such time trends for opinion length and total citations, respectively. The trend lines predict that, in the year 2000, women-authored opinions with about 7.6% more words and about 9.7% more total citations; in 2024, women-authored opinions are predicted to contain about 10.8% more words and about 13.6% more total citations. This indicates that, over time, women judges appear to be increasing the number of words and citations in their opinions at a faster rate than men.

Figure 8. Scatterplot of Average Opinion Length by Gender, with Trend Lines, 2000–2023

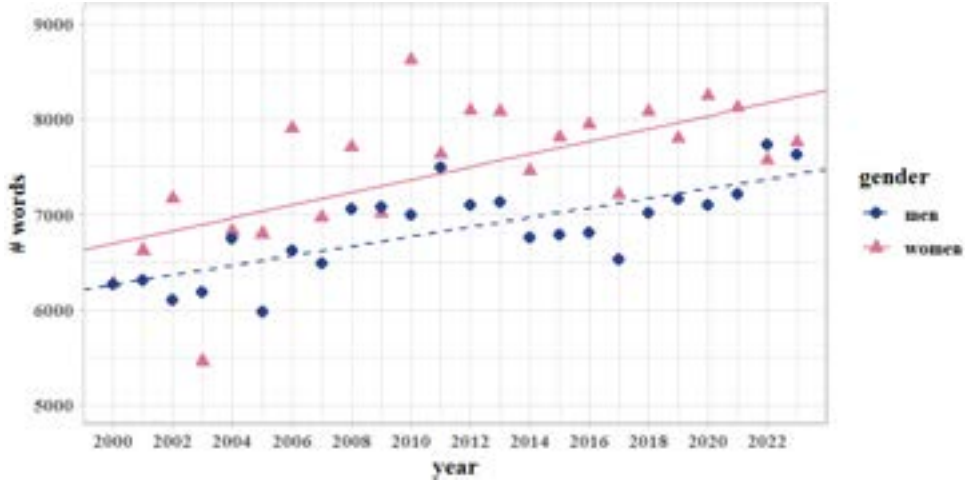
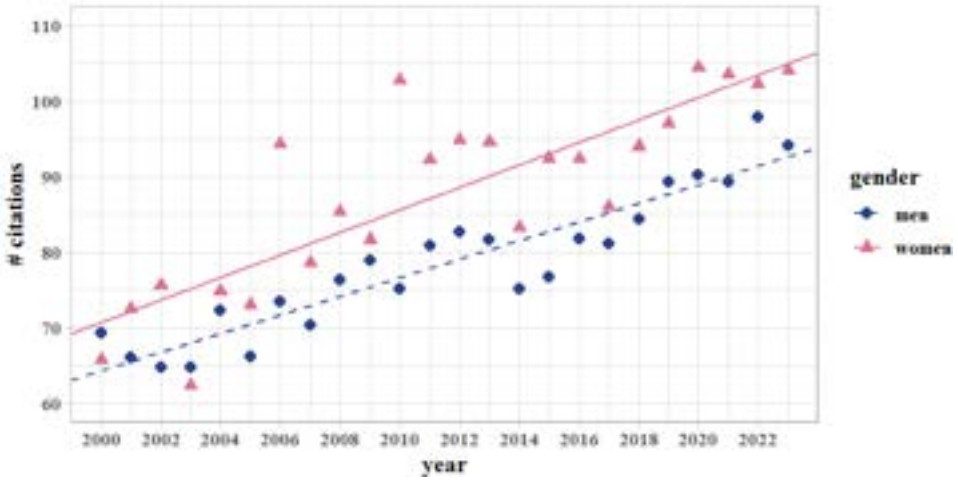


Figure 9. Scatterplot of Average Total Citations by Gender, with Trend Lines, 2000–2023



B. Bivariate Regression Results

So far, I have found that the average opinion written by a woman is longer and contains more citations than the average opinion written by a man, and that these differences in means are statistically significant. To bolster the descriptive findings between gender and my other variables, I analyze the relationship of my variables using ordinary least-squares ("OLS") regression. OLS regression allows the researcher to determine how responsive a given outcome (i.e., the "dependent variable") is to a change in one of its determinants (i.e., the "independent variable").[163] In this case, the independent variable is the gender of the judge writing the opinion.[164] The main dependent variables are opinion length (in words) and total citations, and I run models on each of these variables separately. I also run separate models that consider the individual types of citations. Because the distributions of all the dependent variables were heavily skewed (i.e., the bulk of opinions are on the shorter side of the distribution with fewer citations), I log these variables to normalize their distributions.[165]

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163. JEFFREY S. ZAX, INTRODUCTORY ECONOMETRICS: INTUITION, PROOF, AND PRACTICE 8–9 (2011).

164. Here, gender is a binary variable whereby 1 = *woman* and 0 = *man*. There are currently no self-identified nonbinary judges on the U.S. Courts of Appeals or the Supreme Court.

165. My estimation model is available in Appendix G, *infra*.

First, I regress each of the dependent variables on gender with no controls.[166] The results are reported below in Tables 2 and 3. Each column of these tables represents a different model calculating the responsiveness of a different outcome variable. The rows show the coefficient for my gender variable as well as the constant (i.e., the placement on the y-axis where the key dependent variable equals zero). Notably, the coefficient for gender is signed positively—as expected—in all models except the secondary source model. Positive signage tells us that, as the predictor variable increases (here, from zero to one, or man-authored to woman-authored), the outcome variable also increases. Thus, these results suggest that as an opinion shifts from man-authored to woman-authored, the opinion increases in both length and number of citations. The coefficient on gender attains traditional levels of statistical significance in all models except that for citations to secondary sources (and even this model still reaches the minimum threshold for significance). As with the differences in means, the lower statistical power for the coefficient on gender for secondary sources should not be surprising given the relatively small number of cases containing citations to such sources in the dataset. Interestingly, the coefficient on total citations is larger than that on length. This result means that there is not a perfect relationship between these two variables. While one might expect that a lengthier opinion will necessarily include more citations, the regressions indicate otherwise. Instead, women are producing opinions that include more citations and citations per word, as compared to men.[167]

166. The results are robust to non-logged models in Appendix H, *infra*.

167. A correlation check on length and total citations does produce a highly statistically significant result with a coefficient of about 0.01, indicating that, for every additional 100 words in an opinion, there is likely to be one additional citation. However, models run using the ratio of logged total citations to logged opinion length also produce highly significant results, confirming that women-authored opinions are not only more citation rich but also more citation dense.

Table 2. OLS Models Regressing Author Gender on Key Variables

	length (logged)	total citations (logged)
gender	0.110***	0.141***
	(0.015)	(0.018)
constant	8.624***	4.092***
	(0.008)	(0.009)
Observations	8,849	8,847
R^2	0.006	0.007
Adjusted R^2	0.006	0.007
Residual SE	0.620	0.721
F Statistic	51.288***	61.660***
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 3. OLS Models Regressing Author Gender on Citations by Type

	citation type				
	cases (logged)	authority (logged)	record (logged)	briefs (logged)	sec. sources (logged)
gender	0.114***	0.118***	0.250***	0.163***	−0.082
	(0.018)	(0.025)	(0.057)	(0.049)	(0.058)
constant	3.789***	2.175***	1.538***	1.148***	0.875***
	(0.009)	(0.012)	(0.029)	(0.025)	(0.028)
Observations	8,844	8,644	2,904	2,189	1,531
R^2	0.004	0.003	0.007	0.005	0.001
Adjusted R^2	0.004	0.002	0.006	0.004	0.001
Residual SE	0.741	1.005	1.342	1.004	0.967
F Statistic	38.540***	21.796***	19.142***	10.860***	2.020
Note:					*p<0.1; **p<0.05; ***p<0.01

To interpret the logged coefficients, we need to exponentiate. For example, the coefficient on length (logged) tells us that women-authored opinions are longer than men-authored opinions by a factor of about 1.12. If the mean for this variable represented an opinion written by a man at 6,786 words, an analogous woman-written opinion is predicted to be about 7,600 words in length—an increase of about 1.2 additional pages. For total citations, women write opinions with approximately 1.15 as many total citations as men. Thus, for a male-authored opinion citing 77.1 items, the analogous woman-authored opinion is predicted to contain approximately 88.7 total citations. These predicted means for women are slightly higher than

the actual means. Note that the largest predicted gender gap is in citations to the record, with women citing about 1.28 times more to the record in a given opinion.[168] Women are also predicted to author opinions with about 0.92 as many citations to secondary sources. Thus, with a mean of approximately 0.76 citations for men, women would be expected to include about 0.70 citations to secondary sources in an opinion.

C. Differences by Issue Area

My initial findings confirm my expectation that women on the bench author opinions that are longer and contain more citations to varied types of sources overall. However, I also predicted that there might be heterogeneous effects depending upon the issue area. Namely, I anticipated that these effects would be largest when the case deals with a gendered issue area and smallest when the case deals with an issue area that is "neutral." To test these expectations, I once again rely on both *t*-tests and OLS models. Note that the majority of cases are "neutral," partially because they encompass eight of the fourteen issue areas, and partially because this includes the criminal appeals category, which makes up a large plurality of my dataset. "Gendered" and "marginalized" issue areas comprise about 16% and 14% of all cases, respectively. Figures 10 and 11 show the gendered differences in opinion length and total citations for the three types of issue areas.[169]

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168. Appendix I, *infra*, reports results for multivariate models run with controls for (1) chief judge status; (2) judicial experience; (3) judge ideology; and (4) time trends. These are not included in the body of the paper due to concerns about post-treatment bias—that is, the same factors that influence gender to have this association with the outcome variables may be impacting the control variables. Note that nearly all models produce coefficients on gender that retain positive signage, and most models produce highly significant coefficients. The control on appellate experience has a highly significant negative coefficient, indicating that judges write shorter cases with fewer citations as their tenure on the bench increases. The variable "party" is also a highly significant control in the multivariate model in the positive direction, indicating that judges appointed by Democrats write longer and more citation-heavy opinions—a finding that will be explored in depth. *See infra* Section IV.D.

169. Cases considering dual issue areas were sorted according to their "highest" level. So, for a case with both gender discrimination and disability advocacy issues, the case was deemed to be "gendered" rather than sorted into the group of "marginalized" cases or double counted.

Figure 10. Average Opinion Length (in Words) by Gender and Issue Area Subgroup

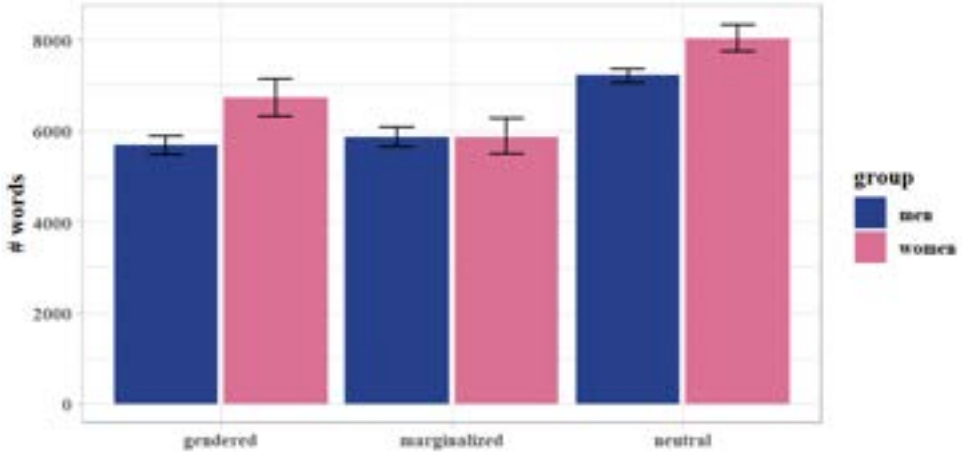
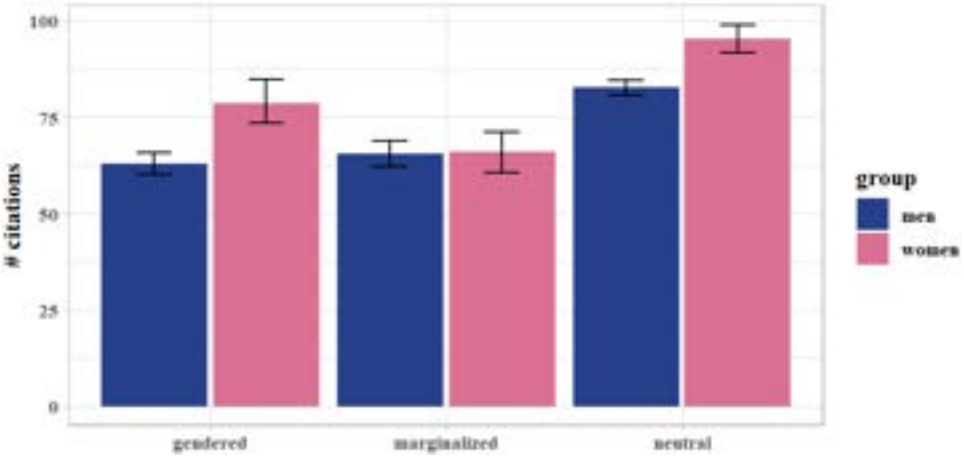


Figure 11. Average Total Citations by Gender and Issue Area Subgroup



There are three key findings apparent from these differences in means. First, as expected, the gender gap is somewhat larger for gendered cases than for cases with marginalized and neutral issue areas. While women-authored opinions are about 1.18 times as long as those authored by men for cases involving gendered issue areas, they are about 1.11 times as long for neutral cases, differences that are highly statistically significant according to *t*-tests. Further, these results are echoed for average total citations, with gendered cases including about 1.25 times as many citations and neutral cases

including about 1.15 times as many citations. This finding may suggest that women do indeed put forth more effort when writing opinions in these areas, either because they simply care more about the issues as compared to men or experience heightened concerns about their competency when writing in an area where they have anecdotal expertise.

Second, antithetical to expectations, there is virtually no difference between genders in the writing and citation style for cases involving the rights of those with marginalized identities. For such cases, the averages are statistically indistinguishable, with men-authored opinions including an average of about four more words, a difference that garners a *p*-value of 0.95 on a *t*-test; and about 0.6 fewer total citations, with a *p*-value of 0.86 on this difference. I expected that women would put more work into these issue areas for one of two reasons. First, they are themselves marginalized and feel empathy for other marginalized groups. Second, a case about a marginalized identity might prime women to consider their own marginalized identity and thus cause them to work harder to combat bias against them. The findings indicate that neither mechanism causes women to author opinions with a greater number of words and citations for the specified issue areas.

Finally, for both men and women, the longest opinions with the most citations are in the neutral issue areas. While I did not strictly posit an expectation in this realm, it still seems surprising that the most effort is put forth in these issue areas. One explanation for this finding might be that, because women have such anecdotal expertise in so-called "gendered" issues, they actually do not have to work as hard or prove themselves as much as they do when the issue area seems unrelated to gender. However, this does not explain why women write relatively short and low-citation opinions for marginalized issue areas, where they also are unlikely to have expertise unless they possess another intersectional identity that might come into play for these issue areas (e.g., race, ethnicity, or disability status).

Next, I ran a series of regressions, first on each subset of issue area groupings and then using the groupings as a control. Tables 4 and 5 present the regression results by subgroup for opinion length and total citations, respectively. These models confirm the difference-in-means findings. That is, women authorship leads to an increase in both dependent variables, and this predicted gender gap is larger for "gendered" issue areas than it is for "neutral" issue areas. The coefficients for gender in these models are also highly significant. Once again, the coefficient for gender in the models on marginalized issues is not significant and is quite substantively small—though still in the positive direction. Thus, although the gender gap for these issues is not larger than that for neutral issues, contrary to expectations, there is still a gender gap in the expected direction for these issue areas.

Exponentiating these coefficients, we find the effect sizes to be similar to those predicted in the difference-in-means analysis.[170]

Table 4. OLS Models Regressing Author Gender on Length by Issue Area Subgroup

	length (logged) gendered issues	length (logged) marginalized issues	length (logged) neutral issues
gender	0.164***	0.034	0.120***
	(0.034)	(0.037)	(0.019)
constant	8.485***	8.510***	8.678***
	(0.018)	(0.018)	(0.009)
Observations	1,437	1,257	6,155
R^2	0.016	0.001	0.006
Adjusted R^2	0.015	-0.0002	0.006
Residual SE	0.575	0.565	0.632
F Statistic	23.166***	0.810	39.484***
Note:			*p<0.1; **p<0.05; ***p<0.01

170. Appendix J, *infra*, shows the differences by issue area subgroup for individual types of citations. These results basically echo those of the models for total citations, with a few aberrations. First, the coefficient on gender becomes quite large and significant in the model for citations to the record in marginalized issue areas, indicating a large gender gap in citation styles. Additionally, the coefficient for gender in the model for citations to the record for gendered issue areas is quite large compared to other areas while the coefficient in the model for citations to legal briefs for these issue areas loses significance. This indicates that women authoring opinions about gendered issues cite to the record much more than do men, but that this gender gap does not persist for legal briefs. One possible explanation for this finding is that women cite heavily to the facts of the case to justify their point but do not feel the need to cite to legal principles set out in party briefs. Of course, briefs also include a facts section, so it may simply be that the record citations supplant what would otherwise be a citation to a facts section in a brief. As with earlier specifications, the models predicting citations to secondary sources predict a gender gap in the opposite direction of that expected, but with no statistical power.

Table 5. OLS Models Regressing Author Gender on Total Citations by Issue Area Subgroup

	total citations (logged) gendered issues	total citations (logged) marginalized issues	total citations (logged) neutral issues
gender	0.209***	0.031	0.156***
	(0.043)	(0.047)	(0.021)
constant	3.897***	3.936***	4.166***
	(0.023)	(0.023)	(0.010)
Observations	1,437	1,256	6,154
R^2	0.016	0.0004	0.009
Adjusted R^2	0.015	-0.0004	0.008
Residual SE	0.727	0.704	0.709
F Statistic	23.499***	0.445	53.452***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 6 presents findings from regressions run on all cases, but further controlling for the categorical issue area subgroup. Findings are presented for only opinion length and total citations; Appendix J provides models by specific citation type. For these models, "gendered" cases are the baseline for the control. Thus, the coefficient on "marginalized cases" predicts the difference in the dependent variable when switching from a gendered case to a marginalized case. Similarly, the coefficient on "neutral cases" predicts the difference as a case switches from a gendered issue area to a neutral one. Importantly, the coefficient on gender retains significance in these models, indicating that the presence of a gender gap in the outcome variables is not wholly dependent on issue area subgroup. Additionally, these models confirm the somewhat surprising finding that neutral cases tend to be longer and include more citations than do gendered cases, while there is no significant difference between cases involving gendered issues and those involving marginalized issues. Appendix J also provides a robustness check with an issue-area fixed effect for all fourteen issue areas. Here, the coefficient on gender retains the appropriate signage and significance in these fixed-effect models.

Table 6. OLS Models Regressing Author Gender on Key Variables, Controlling for Issue Area Subgroup

	length (logged)	total citations (logged)
gender	0.115***	0.148***
	(0.015)	(0.018)
marginalized cases	−0.008	−0.005
	(0.024)	(0.027)
neutral cases	0.181***	0.255***
	(0.018)	(0.021)
constant	8.498***	3.913***
	(0.017)	(0.019)
Observations	8,849	8,847
R^2	0.024	0.034
Adjusted R^2	0.024	0.033
Residual SE	0.614	0.712
F Statistic	74.011***	102.741***
Note:	*p<0.1; **p<0.05; ***p<0.01	

D. Differences in Ideology

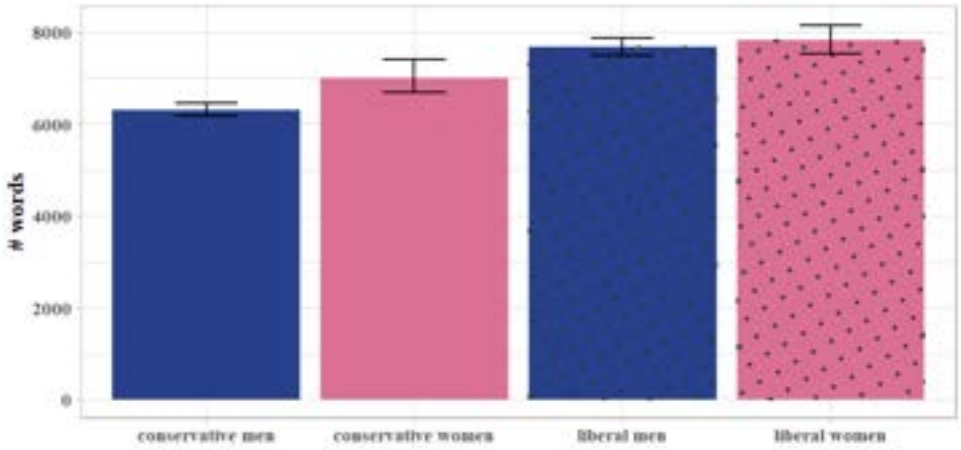
Importantly, these gender differentials still hold when dividing the data into subgroups by ideology and gender. Skeptics of these initial findings may be tempted to argue that these effects indicate not a gender difference, but rather an ideological difference. It is possible that these results indicate that liberal judges write longer, more citation-filled opinions and that women judges tend to be more liberal than men. And in fact, both statements find support from the data. In the dataset of judges, the majority of men are conservative (about 63%) and the majority of women are liberal (about 60%).[171] Further, liberal judges author opinions that are longer and contain

171. I measure ideology using Judicial Common Space score and consider a judge to be conservative if their score is less than 0. Similar trends exist when using alternate specifications for ideology, such as the appointing president's party (~65% of men are conservative; ~59% of women are liberal); Database on Ideology, Money in Politics, and Elections ("DIME") scores (~63% of men are conservative; ~69% of women are liberal); or Clerk-Based Ideology ("CBI")

more citations as compared to conservative judges.[172] Regardless of conservativism or liberalism, women judges write opinions that are on average longer and contain more total citations than those of men, however the difference is certainly starker among conservative judges. Figures 12 and 13 chart gender and ideological differences in opinion length and total citations.

Figure 12 shows the average number of words in an opinion by ideology and gender. This figure demonstrates that conservative women write opinions that are on average longer than those of conservative men, though not quite as long as those of liberal judges of either gender. Liberal women write the longest opinions of all judges, on average. The approximate means are: 6,310 words (9.0 pages) for conservative men; 7,009 words (10.0 pages) for conservative women; 7,668 words (11.0 pages) for liberal men; and 7,827 words (11.2 pages) for liberal women. Within ideology groups, the difference in means between genders is statistically significant at the most stringent level for conservative judges but does not rise to traditional levels of significance as among liberal judges.

Figure 12. Average Opinion Length (in Words) by Gender and Ideology Subgroup

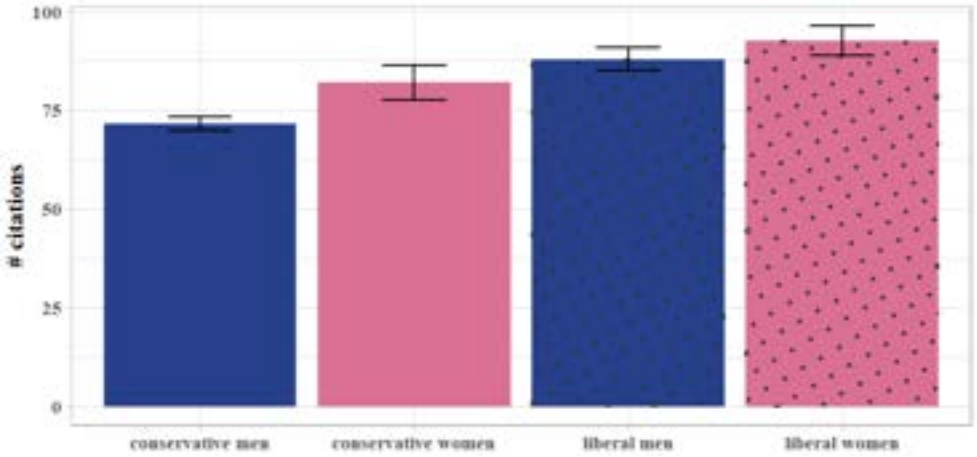


scores (~49% of men are conservative; ~70% of women are liberal). Missingness does increase for DIME and CBI scores. *See generally* Lee Epstein et al., *The Judicial Common Space*, 23 J.L. ECON. & ORG. 303 (2007); Adam Bonica & Maya Sen, *The Politics of Selecting the Bench from the Bar: The Legal Profession and Partisan Incentives to Introduce Ideology into Judicial Selection*, 60 J.L. & ECON. 599, 570–73, 575–79 (2017); Adam Bonica et al., *Measuring Judicial Ideology Using Law Clerk Hiring*, 19 AM. L. & ECON. REV. 129 (2017).

172. The average liberal-authored opinion is about 7,704 words long with approximately 89.5 total citations. The average conservative-authored opinion is approximately 6,449 words long with about 73.2 total citations. These differences in means are highly statistically significant.

Similar patterns are echoed in Figure 13, which graphs the average number of total citations by ideology and gender. Again, liberal women appear to write opinions with the highest average number of citations of all subgroups. Conservative women author opinions with more citations than their male ideological counterparts while still including fewer total citations than liberal judges of either gender. The approximate means are: 71.4 citations for conservative men; 82.0 citations for conservative women; 87.8 citations for liberal men; and 92.6 citations for liberal women. The difference in means between genders and within ideology group are highly significant for conservative judges and moderately significant (p = 0.049) for liberal judges.[173]

Figure 13. Average Total Citations by Gender and Ideology Subgroup



To confirm that ideology does not substantively moderate the relationship between gender and opinion content, I ran a series of regressions, first on the two ideology subsets and second on the full dataset including an interaction between gender and ideology. Interaction terms allow researchers to test whether a given statistical effect is dependent upon the value of a different variable.[174] In this case, we might wonder whether the effect of gender is conditional on a judge's ideology. As a proxy for ideology, I interacted gender with the party of the president that appointed a given judge. I use this

173. The reported p-value for liberal judges is 0.1028.

174. HANK C. JENKINS-SMITH ET AL., QUANTITATIVE RESEARCH METHODS FOR POLITICAL SCIENCE, PUBLIC POLICY AND PUBLIC ADMINISTRATION (WITH APPLICATIONS IN R) 194 (3d ed. 2017).

proxy for ease of interpretation because it is a simple binary variable (where 1 = *Democrat*) and since alternate specifications for ideology (i.e., Judicial Common Space, DIME, and Clerk-Based Ideology) are all highly correlated with appointing president's party.[175] Table 7 presents the findings for opinion length and total citations on ideology subsets. As with the descriptive findings, the regression results predict a gender gap in opinion length and citation usage in the expected direction; but that gap is small and either not statistically significant or barely significant for liberal judges, whereas it is relatively large and highly statistically significant in both models for conservative judges.[176]

Table 7. OLS Models Regressing Author Gender on Key Variables by Ideology Subgroup

	liberal judges		*conservative judges*	
	length (logged)	total citations (logged)	length (logged)	total citations (logged)
gender	0.010	0.046*	0.133***	0.156***
	(0.021)	(0.025)	(0.024)	(0.027)
constant	8.766***	4.232***	8.546***	4.015***
	(0.013)	(0.015)	(0.010)	(0.011)
Observations	3,509	3,509	5,064	5,062
R^2	0.0001	0.001	0.006	0.006
Adjusted R^2	-0.0002	0.001	0.006	0.006
Residual SE	0.603	0.718	0.621	0.716
F Statistic	0.236	3.305*	31.260***	32.134***
Note:				*p<0.1; **p<0.05; ***p<0.01

The results for the interaction models are presented in Table 8. Note that the coefficients on all variables attain substantial significance in all models except the coefficient for the interaction term in the legal authority model. For these models, the coefficient on "gender" represents the difference in a given outcome variable when an opinion is shifted from being written by a

175. These correlations can be viewed in Appendix K, *infra*.

176. Appendix L, *infra*, presents models for individual citation types by ideology subset. Interestingly, the coefficients for gender do rise to statistical significance for liberal judges in all types of citations except for citations to cases—which make up the bulk of all citations. Somewhat conversely, the coefficient only achieves significance in the models for cases and the record for conservative judges, and signage is flipped in the model for citations to briefs, indicating that conservative women cite to briefs at a lower rate than conservative men.

conservative man to being written by a conservative woman. The coefficient on "ideology" represents the effect of a shift from an opinion written by a conservative man to one written by a liberal man. Note that this latter effect is larger than the former effect, implying that an ideology shift has a greater effect on the outcome variables than a gender shift for conservative men. To calculate the effect of shifting from a conservative man to a liberal woman, I add all three coefficients to get an effect size of 0.214 for length and 0.251 for total citations, indicating that this is the greatest possible shift among judges of all genders and ideologies. The effect of shifting from a liberal man to a liberal woman is calculated by adding the ideology coefficient to the interaction term, which sums to 0.084 for length and 0.095 total citations. Since all coefficients are significant, the model predicts that the effect size of shifting from a liberal man to a liberal woman is statistically significant and in the expected direction, albeit the smallest effect size of all other shifts. Essentially, these models indicate that gender impacts judges differently depending on their ideological leanings, with a larger shift between conservative judges than between liberal ones.

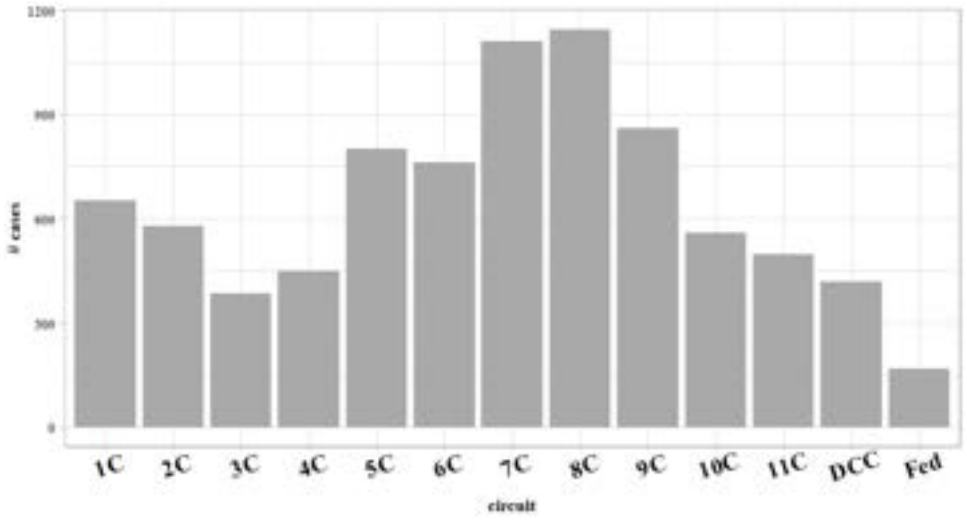
Table 8. OLS Models Regressing Author Gender*Ideology on Key Variables

	length (logged)	total citations (logged)	case citations (logged)	authority citations (logged)
gender	0.130***	0.156***	0.157***	0.057
	(0.023)	(0.027)	(0.028)	(0.038)
ideology	0.213***	0.218***	0.187***	0.189***
	(0.016)	(0.018)	(0.019)	(0.026)
gender*ideology	−0.129***	−0.123***	−0.155***	0.015
	(0.032)	(0.037)	(0.038)	(0.052)
constant	8.552***	4.019***	3.726***	2.111***
	(0.009)	(0.011)	(0.011)	(0.015)
Observations	8,849	8,847	8,844	8,644
R^2	0.027	0.023	0.015	0.011
Adjusted R^2	0.026	0.023	0.015	0.010
Residual SE	0.613	0.715	0.737	1.001
F Statistic	81.211***	70.180***	45.569***	31.562***
Note:				*p<0.1; **p<0.05; ***p<0.01

E. Differences Between Circuits

To the extent that there are circuit-level idiosyncrasies that might impact my analysis, I also implemented circuit-fixed effects on the model. Different courts hear different proportions and types of cases depending on various factors; this can create expertise in some areas. For example, one-third of the D.C. Circuit's docket in 2022 was dedicated to administrative law disputes.[177] Further, there may be unwritten norms within circuits about the general appearance of a written opinion. Note that 344 cases in the dataset are written by district court judges and an additional 119 are authored by appellate court judges that are visiting from another circuit.[178] For the purposes of this analysis, I exclude these cases from review. Figure 14 shows the breakup of cases by circuit. About a quarter of all cases in the dataset were heard by the Seventh and Eighth Circuits, whereas less than 2% of cases were in front of the Federal Circuit. Most of the other courts contribute between 450 and 800 cases (seven circuits fit this range, comprising about 49% of the dataset overall).

Figure 14. Composition of Cases in Dataset by Circuit



177. Hyland Hunt, *D.C. Circuit Review—Reviewed: A Quiet Week*, YALE J. ON REGUL. (Oct. 8, 2023), https://www.yalejreg.com/nc/d-c-circuit-review-reviewed-a-quiet-week [https://perma.cc/B55G-R3MW].

178. Including five cases where a retired Supreme Court Justice (namely Justices Souter and O'Connor) sat on the panel.

Figures 15 and 16 chart gender differences in average opinion length and total citations by circuit. Figure 15 shows that women appear to write longer opinions on average than men in ten out of thirteen courts. Further, the circuits where men appear to write longer opinions than women are those with the smallest sample of women-authored opinions. Nonetheless, *t*-tests return significant results for the Third and Fourth Circuits, indicating that women judges are writing shorter opinions on average in the Mid-Atlantic region.[179] For circuits where women write longer opinions on average, *t*-tests return significant results for the Second, Seventh, Tenth, and D.C. Circuits.[180] This figure also shows that there are clear differences in norms regarding opinion length across the circuits, as both men and women write the shortest opinions in the Seventh and Eighth Circuits and some of the longest opinions in the Tenth and Eleventh Circuits.

Figure 15. Average Opinion Length (in words) by Gender and Court Subgroup

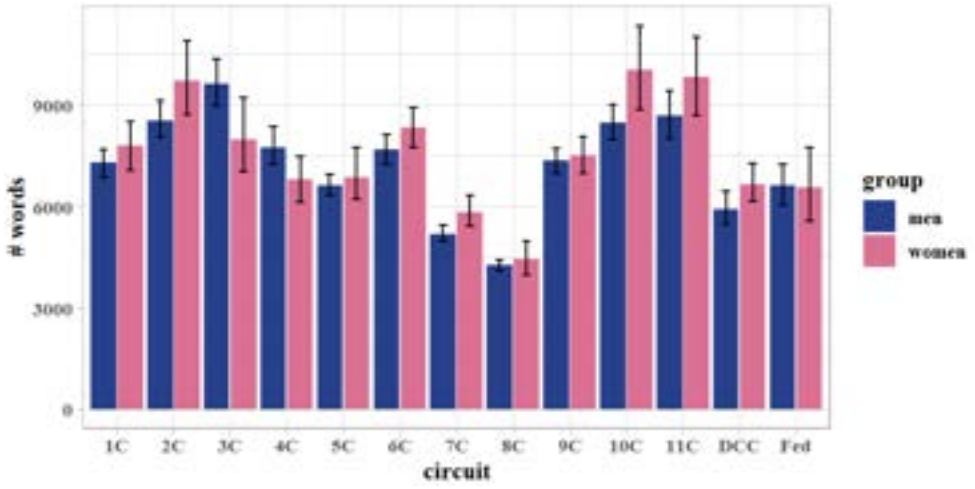


Figure 16 shows the average total citations by gender within courts. Women include more citations on average than men in, again, ten out of thirteen courts—though it is a slightly different permutation of circuits than that for opinion length. As with length, a *t*-test on the Third Circuit returns a

179. Predicted differences for these circuits are as follows: about 2.5 pages in the Third Circuit ($p = 0.01$); and about 1.5 pages ($p = 0.02$) in the Fourth Circuit.

180. Predicted differences for these circuits are as follows: about 1.7 pages in the Second Circuit ($p = 0.04$); about 0.8 pages in the Seventh Circuit ($p = 0.03$); about 2.2 pages in the Tenth Circuit ($p = 0.03$); and about 1.1 pages in the D.C. Circuit ($p = 0.04$).

highly significant result, indicating that men include about 24.2 more citations in their cases as compared to women. For circuits where women write opinions with more total citations on average, *t*-tests return significant results for the Second, Sixth, Seventh, Ninth, and D.C. Circuits.[181] Note that the patterns across circuits somewhat mirror that of length as these two variables are correlated. Thus, it makes sense that the Seventh and Eighth Circuits are again those with the fewest citations on average regardless of the gender of an opinion's author.

Figure 16. Average Total Citations by Gender and Court Subgroup

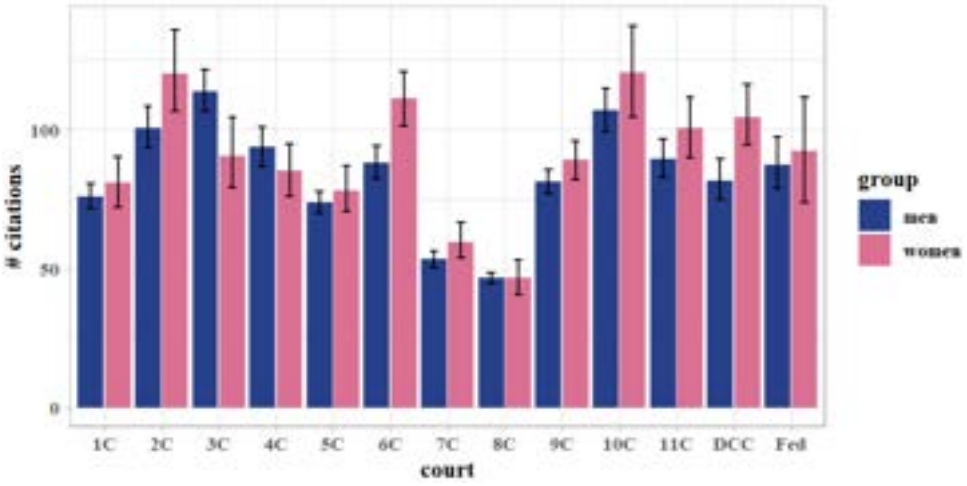


Table 9 shows the regressions run with circuit-fixed effects. These results largely mirror the findings displayed in Figures 15 and 16. The starting point for the fixed effect is the Eighth Circuit, where women and men author opinions with nearly equal numbers of words and total citations. Importantly, the coefficient on gender retains positive signage and high statistical significance in all models even with the implementation of these fixed effects. While the substantive values of these coefficients do decrease, this is to be expected as more controls are added to a model.[182]

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181. Predicted differences for these circuits are as follows: about 20.4 citations in the Second Circuit ($p = 0.01$); about 21.3 citations in the Sixth Circuit ($p = 0.0002$); about 6.0 citations in the Seventh Circuit ($p = 0.09$); about 8.6 citations in the Ninth Circuit ($p = 0.04$); and about 23.3 citations in the D.C. Circuit ($p = 0.0003$).

182. Appendix M, *infra*, provides results with circuit-fixed effects for citations to the record, briefs, and secondary sources. The effect of gender remains statistically significant in models predicting record citations and brief citations.

Table 9. OLS Regressions for Key Variables with Circuit-Fixed Effects

	length (logged)	total citations (logged)	case citations (logged)	authority citations (logged)
gender	0.069***	0.098***	0.075***	0.081***
	(0.015)	(0.017)	(0.018)	(0.025)
10th Cir	0.682***	0.820***	0.723***	0.795***
	(0.030)	(0.034)	(0.036)	(0.049)
11th Cir.	0.664***	0.653***	0.616***	0.731***
	(0.031)	(0.036)	(0.038)	(0.052)
1st Cir.	0.533***	0.498***	0.520***	0.493***
	(0.028)	(0.033)	(0.035)	(0.047)
2d Cir.	0.695***	0.772***	0.683***	0.718***
	(0.030)	(0.034)	(0.036)	(0.049)
3d Cir.	0.761***	0.855***	0.782***	0.937***
	(0.034)	(0.039)	(0.041)	(0.056)
4th Cir.	0.568***	0.683***	0.506***	0.595***
	(0.032)	(0.037)	(0.039)	(0.053)
5th Cir.	0.427***	0.457***	0.503***	0.256***
	(0.027)	(0.031)	(0.032)	(0.045)
6th Cir.	0.585***	0.654***	0.575***	0.553***
	(0.027)	(0.031)	(0.033)	(0.045)
7th Cir.	0.199***	0.096***	0.124***	−0.062
	(0.025)	(0.028)	(0.030)	(0.041)
9th Cir.	0.517***	0.576***	0.543***	0.568***
	(0.026)	(0.030)	(0.032)	(0.044)
D.C. Cir.	0.351***	0.633***	0.306***	0.952***
	(0.033)	(0.038)	(0.040)	(0.055)
Fed. Cir.	0.463***	0.644***	0.431***	0.688***
	(0.048)	(0.055)	(0.058)	(0.079)
constant	8.197***	3.625***	3.372***	1.735***
	(0.017)	(0.020)	(0.021)	(0.029)
Observations	8,386	8,384	8,381	8,192
R^2	0.146	0.159	0.114	0.113
Adjusted R^2	0.144	0.158	0.113	0.111
Residual SE	0.578	0.666	0.701	0.949
F Statistic	109.810***	122.155***	82.770***	79.874***
Note:				*p<0.1; **p<0.05; ***p<0.01

F. Panel Effects

Thus far, I have focused on the individual gender of the judge authoring an opinion. However, opinion authorship is a collaborative endeavor—a "majority" opinion necessarily requires at least two out of three panel members to agree on the holding.[183] To this extent, opinions are circulated several times through chambers for comments from a judge's fellows on their panel. If the findings thus far are indicative of women judges putting greater effort into their work, we might think that these findings will be heightened the more women comprise a panel. Thus, I ran a series of models using the number of women on the panel as the key independent variable rather than the gender of the opinion author. Results for these regressions can be viewed in Tables 10 and 11.

Table 10. OLS Models Regressing Panel Composition on Key Variables

	length (logged)	total citations (logged)
women on panel	0.088***	0.110***
	(0.009)	(0.011)
constant	8.582***	4.040***
	(0.009)	(0.011)
Observations	8,595	8,593
R^2	0.010	0.012
Adjusted R^2	0.010	0.012
Residual SE	0.618	0.720
F Statistic	88.877***	101.162***
Note:	*p<0.1; **p<0.05; ***p<0.01	

183. Tom Cobb & Sarah Kaltsounis, *Real Collaborative Context: Opinion Writing and the Appellate Process*, 5 J. ASS'N LEGAL WRITING DIRS. 156, 161 (2008).

Table 11. OLS Models Regressing Panel Composition on Citations by Type

	citation type				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
women on panel	0.099***	0.088***	0.174***	0.131***	−0.054
	(0.011)	(0.015)	(0.035)	(0.030)	(0.036)
constant	3.740***	2.131***	1.465***	1.083***	0.894***
	(0.011)	(0.016)	(0.036)	(0.031)	(0.037)
Observations	8,590	8,390	2,815	2,105	1,484
R^2	0.009	0.004	0.009	0.009	0.001
Adjusted R^2	0.009	0.004	0.008	0.009	0.001
Residual SE	0.739	1.006	1.341	0.994	0.966
F Statistic	78.095***	32.648***	24.773***	19.389***	2.185
Note:					*p<0.1; **p<0.05; ***p<0.01

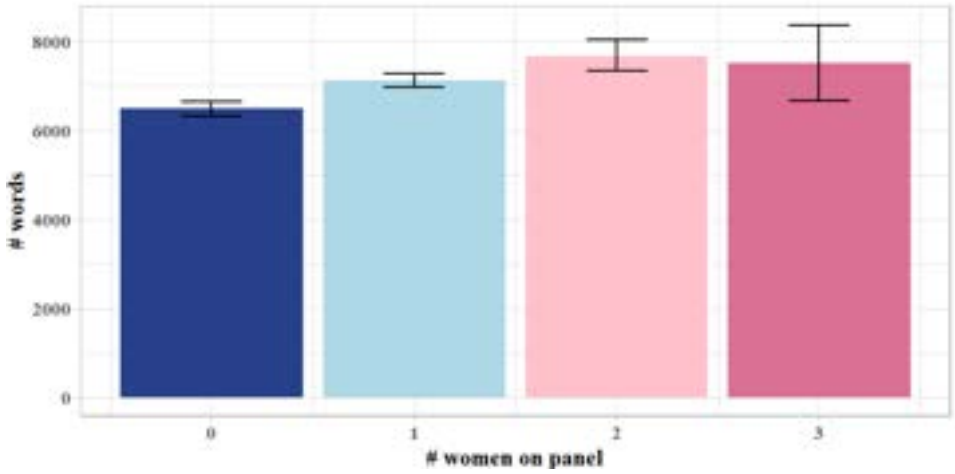
Again, all models, with the exception of the secondary sources model, produce coefficients in the expected direction that are highly statistically significant. These models have slightly lower coefficients than the initial models regressing gender on the dependent variables. However, note that the gender variable can switch from only 0 to 1, whereas the panel composition variable ranges from 0 to 3. Thus, there is more room for movement in this latter series, and in fact the effect sizes are quite large when switching from a panel without women to an all-woman panel. The models predict that, as an additional woman joins the panel, an opinion gains approximately 1.09 times as many words and 1.12 times as many total citations. The true average opinion length and total citations for an opinion written with zero men on the panel is about 6,483 words and 72.5 citations. Thus, switching out one man on the panel for one woman is predicted to increase these values to output an opinion with about 7,066 words and about 81.2 total citations. Switching all of the men on the panel for women is predicted to create an opinion with about 8,396 words and about 101.9 total citations.[184]

Figures 17 and 18 present a visual for the averages in length and total citation by panel composition. In general, both variables increase as a panel comprises a higher percentage of women, with a slight drop for all-women panels. However, these are slight drops, and only about 1% of panels in the dataset are composed of three women, rendering the findings for such panel less precise. Statistically speaking, the differences in means between panels with zero and one woman are quite significant, as are the differences between

184. A model interacting the gender of the opinion author with the number of women on the panel did not return statistically significant results on the interaction term.

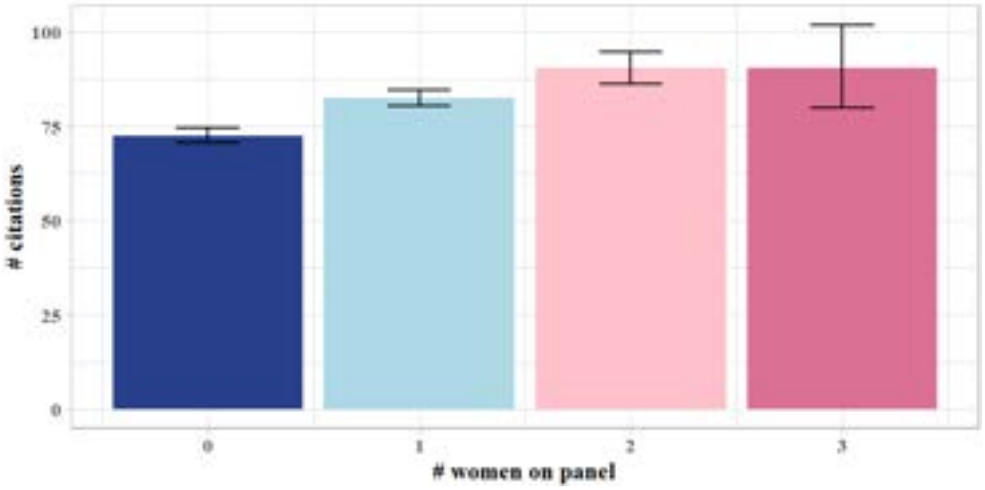
panels with one and two women. *T*-tests comparing any group to the all-women panels do not attain statistical significance, likely due in part to the relatively small number of such panels. Given that men overwhelmingly comprise the bench, most panels in the dataset have either no women (about 41.6%) or one woman (about 42.9%) as part of the decision-making process for a case.[185]

Figure 17. Average Opinion Length (in words) by Number of Women on Panel



185. Appendix N, *infra*, displays the differences in means for panel composition by the gender of an opinion's author. For a man-authored opinion, shifting from an all-male panel to a panel with one woman produces an opinion with a statistically significant increase in words and total citations. However, shifting from a panel with one woman to two women is associated with a slight increase in average words and citations, but this difference is not statistically significant. For opinions authored by woman, there is a statistically significant positive shift in opinion length and citation engagement when moving from a panel with one woman to a panel with two women. However, the predicted means for an all-woman panel decreases from that of a two-woman panel, though this change is again not statistically significant.

Figure 18. Average Total Citations by Number of Women on Panel



To discern whether there are differential panel effects based on the gender of an opinion's author, I run a series of regressions using panel composition to predict the outcome variables on subsets of man-authored and woman-authored opinions.[186] Table 12 displays the findings for these models, all with highly significant coefficients on the predicter variable in the expected direction. This indicates that, regardless of author gender, increasing the number of women on a panel is predicted to increase both the number of words and total citations in an opinion. These models also imply that the effect is slightly greater for man-authored opinions than it is for woman-authored opinions, which makes sense given the earlier findings that women author opinions are longer and more citation-rich. Exponentiating these coefficients out, we find that, for woman-authored opinions, adding an additional woman to the panel is correlated with an increase of about 1.07 times as many words and 1.08 times as many citations. Given that the average woman-authored opinion for a one-woman panel includes about 7,209 words and 84.6 total citations, the model predicts that an all-woman panel should produce an opinion with about 8,254 words (an increase of approximately 1.5 additional pages) and about 98.7 citations. For man-authored opinions, the model predicts an increase of about 1.08 words and 1.10 citations. Given the

186. Appendix O, *infra*, presents models with an interaction effect for author gender and panel composition. Note that these two terms are necessarily correlated—all-male panels cannot have women authors and vice versa, and the likelihood of becoming an opinion author increases as more judges of your gender join that panel. A correlation check on my data shows these variables to be correlated at a level of 99.99%, with a coefficient of 0.33. Thus, an interactive effect is probably not applicable here.

means of about 6,483 words and about 72.5 total citations for an all-male panel, switching to a panel with two women predicts that a man-authored opinion will now contain about 7,562 words (again, about 1.5 additional pages) and about 87.7 total citations.[187]

Table 12. OLS Models Regressing Panel Composition on Key Variables by Author Gender

	woman-authored		*man-authored*	
	length (logged)	total citations (logged)	length (logged)	total citations (logged)
women on panel	0.064***	0.081***	0.077***	0.093***
	(0.023)	(0.027)	(0.013)	(0.015)
constant	8.639***	4.111***	8.580***	4.038***
	(0.035)	(0.041)	(0.010)	(0.012)
Observations	2,055	2,055	6,540	6,538
R^2	0.004	0.004	0.005	0.006
Adjusted R^2	0.003	0.004	0.005	0.006
Residual SE	0.595	0.706	0.625	0.724
F Statistic	7.773***	8.986***	35.641***	38.645***
Note:				*p<0.1; **p<0.05; ***p<0.01

V. IMPLICATIONS

My findings suggest that women judges produce opinions that are longer and contain more citations in general, and that this gender gap is larger when the case at hand includes coverage of a gendered issue such as abortion. Further, I find that these gaps continue to grow as panels include a higher percentage of men. I find that gender impacts ideological groups differently. Liberal judges generally tend to write opinions with more words and more total citations as compared to conservative ones. I thus find that conservative women judges write longer, more citation-rich opinions as compared to conservative men; these differences are slighter for liberals on the bench. Additionally, I show that gender gaps in opinion content vary by circuit, and that there are a few circuits—namely the Third and Fourth—where men consistently write opinions with more words and citations as compared to women. Nonetheless, my results in general ostensibly demonstrate that

187. Appendix O, *infra*, also includes models for individual citation types by author gender subset.

women judges engage in more diligence and deliberation when producing their opinions, and perhaps even produce "better" work—to the extent that we can calculate the quality of judicial opinions.[188] Further work is needed to empirically establish the normative implication of these findings. Nonetheless, I briefly consider possible concerns as to what follows from these findings and what they mean for judges, legal practitioners, other political actors, and society writ large.

Women judges might be especially validated to hear that their work appears to be more thorough than that of their male colleagues. This initial validation may then be followed by a concern that they must be working harder or dedicating more time to producing thorough, heavily justified opinions than their male colleagues. This may be true; it is possible that longer, more citation-heavy opinions take greater time and effort to produce. That possibility presents a concern both to the women judges expending this extra energy as well as the judicial system in general which might be concerned about the extra use of resources to exact justice. If women judges must exert extra effort in their work, it may also exacerbate the gaps between men and women in climbing the judicial hierarchy. However, there are at least two ways in which this could be false, and thus women might be said to produce more diligent opinions without expending substantial extra time and effort. First, perhaps women judges are more efficient than men and can thus produce more thorough opinions in the same amount of time.[189] Second,

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188. Many legal scholars have indeed attempted this endeavor, though the amount of in-fighting within this cadre suggests that each possible measure may be flawed in its own unique way. Proposed measures of opinion quality include but are not limited to: (1) quality of writing; (2) importance of opinion; (3) legal "correctness" of opinion; (4) whether the opinion is ultimately overturned by higher courts; and (5) number of positive citations to that opinion. *See, e.g.*, Robert Anderson IV, *Distinguishing Judges: An Empirical Ranking of Judicial Quality in the United States Courts of Appeals*, 76 MO. L. REV. 315, 331–33 (2011) (considering citations approaches); Gregory A. Caldeira, *In the Mirror of the Justices: Sources of Greatness on the Supreme Court*, 10 POL. BEHAV. 247, 248–49 (1988) (considering importance of opinion); Frank B. Cross & Stefanie Lindquist, *Judging the Judges*, 58 DUKE L.J. 1383, 1434–35 (2009) (considering reversal rates); Annie M. Smith, *Great Judicial Opinions Versus Great Literature: Should the Two Be Measured by the Same Criteria?*, 36 MCGEORGE L. REV. 757, 767–69 (2005) (considering quality of writing). *See generally* Richard A. Posner, *The Learned Hand Biography and the Question of Judicial Greatness*, 104 YALE L.J. 511 (1994) (book review) (examining why Judge Learned Hand was a "great" judge).

189. One way to measure this "efficiency" would be to consider the time it takes for a judge to reach a decision in a case. However, a measure of days neglects to account for potential hours of overtime worked in chambers and thus may misrepresent the total time a judge takes. For more on measuring judicial efficacy/efficiency, see Alain Marciano et al., *The Economic Importance of Judicial Institutions, Their Performance and the Proper Way to Measure Them*, 15 J. INST'L ECON. 81, 84–86 (2019).

perhaps there are differences in the hiring practices for clerks based on the gender of a judge. Clerks are integral to the judicial decision-making process. If women judges employ higher-quality clerks than their male peers, this might lead to more diligent opinions while using the same amount of judicial resources. But even with comparable clerks, women judges may simply run their offices more efficiently to produce high-diligence opinions from their clerks.[190] For men on the bench, perhaps the findings of this study will simultaneously incentivize greater diligence or changes in clerkship hiring and management practices.

Additionally, legal practitioners may wonder what this means for litigation. Further research is needed to discern whether opinions that are longer and more citation heavy are also less likely to be overturned and/or more likely to have important effects on public policy. However, even if this is not the case, perhaps women judges ensure more due process for individual litigants. Additionally, if citations and opinion length are any indication, women judges may be working more diligently at all stages in the judicial process. This possibility would mean that parties assigned to panels with women on them might be receiving higher levels of due process as compared to parties assigned to panels of all men. Further, gender differentials in due process might create perverse incentives to "stack the deck" and ensure a given case is heard by a panel composed of as many women as possible. For example, attorneys or organizations seeking a landmark decision might want those decisions to emerge from a woman judge so that the opinion is as detailed and well-justified as possible. Though it is usually not possible to select which judge will hear your case, strategic litigators can select the court (within reason) based on the proportion of women on the bench in that circuit. Savvy lawyers wishing for the thoroughness of a woman-authored opinion may tend toward the Second Circuit, where 54% of the court's thirteen active judges are women.[191] Such attorneys would certainly want to steer clear of the Eighth Circuit—where only one of eleven active judges is a woman.[192]

Actors in the other branches of government also have a stake in these findings. After all, the judicial branch does not select its own judges, so other government actors must populate the judiciary through the assisted appointment process. If the President and Senate prefer more attentive judges on the bench, perhaps they should consider more women for the bench. As

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190. Studies in business literature have shown that women may in fact make better managers. *See, e.g.*, Bernard M. Bass & Bruce J. Avolio, *Shatter the Glass Ceiling: Women May Make Better Managers*, 33 HUM. RES. MGMT. 549, 557–58 (1994).

191. *See supra* note 145.

192. *See supra* note 145.

noted earlier, the judiciary is still far from representative of the composition of women in the United States. To the extent that a demographically representative bench is desirable, perhaps more women should be offered a seat on the courts. In other countries, research has found that the greatest obstacle to gender parity on the bench is simply the large number of incumbent men.[193] As vacancies open up, filling these positions with women would lead to not only a more representative judiciary, but perhaps a judiciary that produces more thoughtful decisions. At the very least, these findings should give political actors pause when considering judicial nominees.

Finally, the public may also be interested in these findings and what they might mean for notions of institutional sexism within the judiciary. As already noted, studies show that male judges may be harsher on their women colleagues as compared to other men.[194] And women attorneys perceive men on the court to also be somewhat biased against them.[195] If these differences in opinion content by women judges are motivated by perceived or actual bias from those around them, society might be concerned about whether women judges will be able to retain their positions on the bench in a presumably hostile work environment. Further, it may be difficult to attract more women to these positions if they anticipate sexism in the workplace. In the 1990s, many women on the bench noted their experiences with workplace harassment based on their gender.[196] Those same judges will claim that newer women on the court do not have the same experience of discrimination that the first cohort of women judges did. For example, in the context of her oral history, Judge Dolores Sloviter notes, "I don't think there's any such thing as discrimination against female judges."[197] However, even if there has been progress with regard to institutional sexism on the court, recent studies—and my findings—suggest that this persists even today.

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193. *See* Ignacio Arana Araya et al., *Judicial Reshuffles and Women Justices in Latin America*, 65 AM. J. POL. SCI. 373, 383 (2020).

194. Jacobi & Schweers, *supra* note 134, at 1458.

195. Cortina et al., *supra* note 133, at 244.

196. Martin, *supra* note 5, at 208.

197. Interview by Amelia Helen Boss with Dolores Korman Sloviter (July 25, 2007), *in* ABA WOMEN TRAILBLAZERS IN THE LAW PROJECT, ORAL HISTORY OF DOLORES KORMAN SLOVITER 127 (2006–2007), https://stacks.stanford.edu/file/druid:fb592fk2151/fb592fk2151_SloviterD_Transcript.pdf [https://perma.cc/H592-9ERR]. Several times within this interview, Judge Sloviter echoes similar sentiments that women in the legal field simply aren't discriminated against today. *See id.* at 85, 118.

VI. CONCLUSION

Gender differences in judging are understudied as a phenomenon—and when they are studied, researchers focus almost solely on case outcomes.[198] This is a critical gap in the literature, as it is important to learn more about the process whereby judges come to these decisions. By analyzing opinion content, this Article takes a first step in this direction, finding that women's process on the bench includes writing longer, more citation-rich opinions.

These results provide support for the theory that women judges produce opinions that are different from those of men. These differences may persist because women on the court are of higher quality, are socialized to work harder, or are more concerned about perceived or actual bias against them due to their sex. Future work should aim to disentangle which mechanism is driving these results. Regardless of the mechanism, another question is begged by these results: are women judges spending more time and resources writing their opinions? It is possible that women judges are more efficient than their male counterparts and thus able to provide more comprehensive opinions while utilizing the same time and law clerks. Or perhaps women judges tend to hire higher-quality clerks as compared to men, allowing their chambers to produce more thorough opinions in the same amount of time. But in the event that this is not the case, my findings may seem troubling to women on the court. If more time and resources must be spent to produce an opinion, women judges are faced with difficult decisions about how to spend their time—and the time of their clerks and staff. Even more importantly, we might wonder what this means for the actual quality of opinions. If high-justification opinions are "better," perhaps they are less likely to be overturned, more likely to be cited as precedent in future cases, and even more likely to have a downstream impact on policy decisions.

As more women accumulate on the judiciary, it is important to identify how they function, especially if they function in a way that diverges from that of the male judges who have been studied so comprehensively in the past. While there is still a long way to go in understanding how individual traits impact the work of judges, this research provides an important springboard for scholars of gender, the judiciary, and American institutions more generally.

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198. *See, e.g.*, Boyd et al., *supra* note 10, at 393.

APPENDIX A: CASES BY ISSUE AREA

Table A.1. Breakdown of Cases by Issue Area with Boolean Search Terms

issue area	**search**	**n**
abortion	abortion /s constitution!	200
disability advocacy	"americans with disabilities act" & plaintiff /2 disab!	444
affirmative action	affirmative /2 action /s constitution!	114
campaign finance	"Buckley v. Valeo" & campaign	154
capital punishment	capital /2 punishment % batson	624
Commerce Clause	"commerce clause" /p federalism	83
Contract Clause	"contract clause" /s constitution!	182
corporate veil	pierc! /s "corporate veil"	521
criminal appeals	(convict! OR acquit!) & crim!	3590
environmental protection	"environmental protection agency" /s regulat!	498
gender discrimination	"title VII" /p gender % race	451
race discrimination	"title VII" /p race % gender	699
sexual harassment	sex! /3 harass!	786
takings	"fifth amendment" & "just compensation"	503

Table A.2. Breakdown of Cases with Multiple Issue Areas by Issue Area

issue area 1	**issue area 2**	**n**
abortion	affirmative action	1
“ ”	campaign finance	2
“ ”	Contract Clause	1
“ ”	criminal appeals	1
disability advocacy	corporate veil	1
“ ”	environmental protection	1
“ ”	race discrimination	11
“ ”	sexual harassment	7
affirmative action	campaign finance	1
“ ”	criminal appeals	2
“ ”	race discrimination	3
“ ”	sexual harassment	1
campaign finance	corporate veil	1
“ ”	criminal appeals	1
“ ”	takings	2
capital punishment	criminal appeals	43
“ ”	Commerce Clause	2
Commerce Clause	criminal appeals	4
Contract Clause	takings	20
corporate veil	criminal appeals	9
“ ”	environmental protection	1
“ ”	sexual harassment	4

criminal appeals	environmental protection	1
“ ”	sexual harassment	1
“ ”	takings	2
environmental protection	campaign finance	2
“ ”	Commerce Clause	2
“ ”	Contract Clause	1
“ ”	corporate veil	1
“ ”	takings	5
gender discrimination	disability advocacy	2
“ ”	affirmative action	1
“ ”	corporate veil	3
“ ”	sexual harassment	151
race discrimination	corporate veil	2
“ ”	sexual harassment	26
sexual harassment	disability advocacy	3
“ ”	corporate veil	1

APPENDIX B: KEY INTERNAL OPERATING PROCEDURES BY CIRCUIT

circuit	oral argument	panel assignment	case assignment	opinion assignment
1st[199]	always unless unanimous panel invokes FRAP 34	randomization on death penalty cases	randomization, with some exceptions	
2d[200]	always unless unanimous panel invokes FRAP 34	randomization on death penalty cases	randomization on death penalty cases	
3d[201]	if requested by 1+ panel judge	randomization on death penalty cases	"generally" randomized	presiding judge ("PJ") or seniormost in majority assigns after case conference
4th[202]	always unless unanimous panel invokes FRAP 34	semi-random, normalize judge permutations	"total" randomization	chief judge ("CJ") assigns with presiding referral if CJ is not on panel
5th[203]	always unless unanimous panel invokes FRAP 34	semi-random, normalize judge permutations	clerk schedules, with categorical prioritization	PJ assigns after case conference (no specialization)
6th[204]	always unless unanimous	double randomization	clerk assigns to dates pre-panel randomization	PJ assigns after case conference

199. FIRST CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE FIRST CIR. 2024), https://www.ca1.uscourts.gov/sites/ca1/files/rulebook.pdf [https://perma.cc/2WLL-WQU5].

200. SECOND CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE SECOND CIR. 2022), https://www.ca2.uscourts.gov/clerk/case_filing/rules/pdf/LRs_IOCs_appendices_rev_2022.pdf [https://perma.cc/RZE6-3L6A].

201. THIRD CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE THIRD CIR. 2023), https://www2.ca3.uscourts.gov/legacyfiles/IOPs.pdf [https://perma.cc/8768-VGB9].

202. FOURTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE FOURTH CIR. 2024), https://www.ca4.uscourts.gov/docs/rules/LocalRules.pdf?sfvrsn=e9c8fd71_60 [https://perma.cc/4YV4-Z27W].

203. FIFTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE FIFTH CIR. 2024), https://www.ca5.uscourts.gov/docs/default-source/forms-and-documents---clerks-office/rules/5thcir-iop [https://perma.cc/9H95-F7TK].

204. SIXTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE SIXTH CIR. 2024), https://www.ca6.uscourts.gov/sites/ca6/files/documents/rules_procedures/Full%20FRAP%20Rules%20with%20LR%20and%20IOP%2011-27-24.pdf [https://perma.cc/35WL-KQRA].

	panel invokes FRAP 34			
7th[205]	always unless unanimous panel invokes FRAP 34	semi-random, normalize judge permutations		PJ assigns after case conference
8th[206]	panel may agree not to hear case	computerized randomization	computerized randomization	PJ assigns after case conference
9th[207]	always unless unanimous panel invokes FRAP 34	semi-random, normalize judge permutations	clerk schedules by categorical prioritization	PJ assigns after case conference
10th[208]	if requested by 1+ panel judge		randomization	PJ—if in majority—assigns after case conference
11th[209]	always unless unanimous panel invokes FRAP 34	randomization from a matrix	clerk schedules by case category, normalization + "first-in-first-out"	PJ—if in majority—assigns after case conference (no specialization)
Fed.[210]	always unless unanimous panel invokes FRAP 34	computerized randomization based on	semi-randomized, case category normalized	PJ or seniormost in majority assigns after case conference

205. SEVENTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE SEVENTH CIR. 2015), https://www.ca7.uscourts.gov/forms/Seventh_Circuit_Operating_Procedures.pdf [https://perma.cc/MW7S-YCQS].

206. EIGHTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE EIGHTH CIR. 2024), http://media.ca8.uscourts.gov/newrules/coa/iops06-19update.pdf [https://perma.cc/C68F-CSPU].

207. NINTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE NINTH CIR. 2024), https://cdn.ca9.uscourts.gov/datastore/uploads/rules/frap.pdf [https://perma.cc/5JXG-MLRZ].

208. PRACTITIONER'S GUIDE TO THE U.S. CT. OF APPEALS FOR THE TENTH CIR. (U.S. CT. OF APPEALS FOR THE TENTH CIR. 2024), https://www.ca10.uscourts.gov/sites/ca10/files/documents/downloads/2024PracGuideUpdate-13thEdition.pdf [https://perma.cc/U6L9-R5L7].

209. ELEVENTH CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE ELEVENTH CIR. 2024), https://www.ca11.uscourts.gov/sites/default/files/courtdocs/clk/Rules%20Bookmark.DEC24.pdf [https://perma.cc/PT8T-5ZV6].

210. FED. CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE FED. CIR. 2024), https://cafc.uscourts.gov/wp-content/uploads/RulesProceduresAndForms/InternalOperatingProcedures/InternalOperatingProcedures.pdf [https://perma.cc/HA3Y-E9PS].

		schedule availability		
D.C.[211]	always unless unanimous panel invokes FRAP 34	semi-random, normalize judge permutations	computerized by case category, normalization + "first-in-first-out"	PJ or seniormost in majority assigns after case conference

211. DIST. OF COLUMBIA CIR. INTERNAL OPERATING PROCS. (U.S. CT. OF APPEALS FOR THE DIST. OF COLUMBIA CIR. 2024), https://www.cadc.uscourts.gov/sites/cadc/files/rules-Handbook 20241212.pdf [https://perma.cc/8Z9Y-NUJY].

APPENDIX C: REGULAR EXPRESSIONS APPROACH

My regular expressions approach proceeded as follows:

First, I skimmed all cases in my dataset to sort them into various buckets. I primarily sorted cases into those that were unanimous and those in which there are multiple opinions. I also noted any irregularities in form in the format of the authoring judge's name as presented in the case. For example, the vast majority of authoring judges are fully capitalized in text, but a few aberrations occurred whereby names were not capitalized. These cases were thrown into a "lowercase" bucket. This sorting was pragmatic, for the purposes of Step 2.

Second, I ran a loop on the cases in my dataset which captured all information relevant to my inquiry for each case. The start of the loop ran code to capture the text of only the majority opinion. For the sample of unanimous opinions with uppercase judge names, the code was as follows:

```
35  case_df <- str_extract(raw_data, "(?s)[:upper:]{1,}[:punct:]{1,} \\w{1,} Judge[:punct:]\\n\\s*(.*?)\\s*\\nAll Citations\\n")
36  new <- data.frame(NA)
37  new$judge <- str_extract(raw_data, "[:upper:]{1,}[:punct:]{1,} \\w{1,} Judge[:punct:]\\n")
38  case_df <- str_replace_all(case_df, "[\n]" , " ")
```

where line 35 captures all of the text between the authoring judge's name and the end of the case, which reads "All Citations"; line 37 captures the name of the authoring judge and imports it as the first column in a "new" data frame; and line 38 eliminates all instances of "\n" in the text of the opinion (which signifies where a new line started within the original PDF).[212]

Third, I captured every instance of the citations necessary for my dependent variables, using 253 regular expressions. My code varies based on the Bluebook abbreviations for the reporter in which the case cite is published. These regular expressions account for some typos by judges and their clerks when it comes to missing spaces or adding spaces between and among reporter volumes as well as capitalization differences.[213] Table B.1 reports some sample regular expressions and the corollary citations they were targeted to collect. The code created a data frame for each type of citation (case, legal authority, secondary source, or *id.*) that included the starting and

---

212. I randomly sampled fifty cases from the data and manually checked the author for each one. The regular expression captured the correct author 96% of the time. The other 4% of the time, the code did not capture a judge name at all, which flagged that case for hand coding. The code did not capture any incorrect author names in my random sample.

213. While this does not cover all typos and oddities in citations, a comparison to a random sample of ten hand-coded cases showed the code captured 99% of all citations. The code was 100% accurate on 7 out of 10 cases. In total, it captured 586 out of 590 case citations, 57 out of 59 legal authority citations, and 10 out of 10 secondary source citations.

ending location of those citations, the text of the citation, and its typology. Citations that started or ended at the same place (i.e., were duplicates of each other) were deleted.

Table C.1. Sample Citations and Corollary Regular Expression Codes

Source Type	Regular Expression	Sample Bluebook Cite
Statute	\\d{1,} U\\.S\\.C\\. \\d{1,}	17 U.S.C. 107
Constitution	U\\.S\\. Const\\. art\\. [:upper:]{1,}	U.S. Const. art. 1, § 9
Article	\\d{1,} [:alpha:]{1,}\\. L\\. Rev\\. \\d{1,}	15 Harv. L. Rev. 41
Leg. Records	[:upper:]\\.R\\. Rep\\. No\\. \\d{1,}	H.R. Rep No. 105-452
Restatements	Restatement \\([:alpha:]\\) of [:alpha:]	Restatement (Third) of Torts § 2.1
Agency Action	\\d{1,} C\\.F\\.R\\. § \\d{1,} \\d{1,} Fed\\. Reg\\. \\d{1,}	36 C.F.R. § 2.15 60 Fed. Reg. 50,379

Fourth, I sorted all citations within a given case by their starting location. This allowed me to assign typologies to the "*ids*" by asking them to take the typology of the citation they immediately proceed.

Fifth, I used regular expressions to capture the first instance of a case citation in the entirety of the PDF to find that case's citation. This regular expression works since the case citation is in the header of the first page of the PDF and thus should always be the first case citation captured. This capture wasn't strictly necessary for my analysis but was important to include in my dataset so that I could cross check anomalies in the data.

Finally, I created a case-level dataset using the following code:

```
#creating the case-level dataset
new$case_ct <- nrow(final[final$type == 'cases', ])
new$leg_ct <- nrow(final[final$type == 'legal authority', ])
new$ss_ct <- nrow(final[final$type == 'secondary sources', ])
new$brief_ct <- nrow(final[final$type == 'brief', ])
new$record_ct <- nrow(final[final$type == 'record', ])
new$length <- str_count(case_df, '\\w+')
new$year <- str_extract(raw_data, "\\(20\\d{2}\\)")
```

where lines 1134–39 count how many instances of each citation type exist; line 1140 counts the total number of words in the majority opinion for my length dependent variable; and line 1141 captures the year the case was published for use in calculating some of my controls. The case-level data also includes the citation for the case (captured as described in Step 5) and the name of the case PDF imported.

APPENDIX D: SIMPLE DESCRIPTIVE STATISTICS

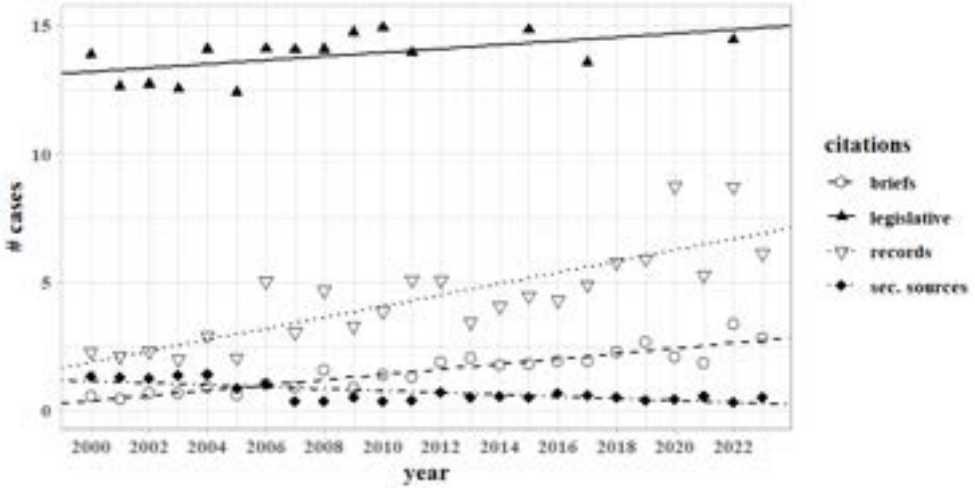
Table D.1. Descriptive Statistics for Key Variables (approximations)

variable	min	median	mean	max	#NA
					independent variable
gender [1 = *woman*]	-	-	0.24	-	-
					control variables
chief judge status of majority author [1 = *chief judge*]	-	-	0.08	-	-
seniority status of majority author [1 = *senior judge*]	-	-	0.22	-	-
ideology of majority author [1 = *appointed by Democrat*]	-	-	0.40	-	-
ideology of majority author [on Judicial Common Space score]	-0.59	0.19	0.10	0.72	276
ideology of majority author [on DIME score]	-1.66	0.26	0.11	1.68	764
ideology of majority author [on Clerk-Based Ideology score]	-1.48	-0.30	-0.07	3.33	3394

appellate experience of majority author (in years)	0	14	14.76	48	-
total judicial experience of majority author (in years)	0	17	17.87	53	-
year (case published)	2000	2010	2011	2023	-
dependent variables					
opinion length (words)	465	5719	6953	60300	-
total citations	0	63	79.74	699	2
case citations	0	46	59.03	532	5
legal authority citations	0	9	14.33	211	205
record citations	0	0	4.20	455	5945
brief citations	0	0	1.45	191	6660
secondary sources	0	0	0.73	65	7318

APPENDIX E: ADDITIONAL TIME TREND

Figure E.1. Plot of Average Citations over Time by Type



APPENDIX F: DESCRIPTIVE STATISTICS BY ISSUE AREA

Table F.1. Descriptive Statistics for Key Variables by Issue Area (approximations)

issue area	mean length	mean total citations	mean case citations	mean leg. auth. citations
gendered issue areas				
abortion	8285	102.74	84.71	11.45
sexual harassment	5755	64.31	48.26	6.68
gender discrimination	5320	56.57	44.53	7.24
marginalized issue areas				
disability advocacy	6401	73.52	52.70	16.43
affirmative action	8514	104.78	85.58	13.07
race discrimination	5093	54.09	41.27	7.97
neutral issue areas				
criminal appeals	7076	79.13	58.76	15.31
capital punishment	10074	113.72	91.92	13.24
campaign finances	9261	123.43	97.60	17.98
Commerce Clause	9281	122.40	91.27	24.25
Contract Clause	6634	76.58	58.90	12.69
corporate veil	6724	71.15	54.30	10.72
environmental protection	7588	100.98	52.36	38.17
takings	6356	81.78	58.50	13.48

APPENDIX G: REGRESSION MODEL

Each of my models is specified as follows:

$$Y = \beta_0 + \beta_1(gender) + \lambda_i X_i + \varepsilon$$

where Y represents the various outcome variables and X_i is a vector of controls.

APPENDIX H: ROBUSTNESS CHECKS

Robustness checks were run on non-logged variables to ensure that statistical significance in my primary models was not a function of rescaling the distribution of these variables through logging. All expected models are significant using non-logged outcome variables, and substantive values are larger though relatively comparable to the effect sizes found in logged models.

Table H.1. Robustness Check for Non-Logged Key Dependent Variables without Controls

	length	total citations
gender	694.293***	10.969***
	(124.139)	(1.577)
constant	6,786.185***	77.112***
	(60.776)	(0.772)
Observations	8,849	8,849
R^2	0.004	0.005
Adjusted R^2	0.003	0.005
Residual SE	4,985.122	63.339
F Statistic	31.280***	48.367***
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table H.2. Robustness Check for Non-Logged Citations by Type without Controls

	citation type				
	cases	authority	record	brief	sec. sources
gender	6.084***	2.372***	2.128***	0.549***	−0.163**
	(1.168)	(0.421)	(0.381)	(0.133)	(0.075)
constant	57.573***	13.766***	3.687***	1.322***	0.764***
	(0.572)	(0.206)	(0.186)	(0.065)	(0.037)
Observations	8,849	8,849	8,849	8,849	8,849
R^2	0.003	0.004	0.004	0.002	0.001
Adjusted R^2	0.003	0.003	0.003	0.002	0.0004
Residual SE	46.903	16.898	15.285	5.344	3.032
F Statistic	27.130***	31.779***	31.254***	17.021***	4.678**
Note:					*p<0.1; **p<0.05; ***p<0.01

Table H.3. Robustness Check for Non-Logged Key Dependent Variables with Controls

	length	total citations
gender	267.358**	4.512***
	(127.543)	(1.608)
chief status	−6.441	2.348
	(199.430)	(2.514)
appellate experience	−14.641***	−0.324***
	(5.311)	(0.067)
party	1,158.518***	14.541***
	(110.743)	(1.396)
time trend	59.099***	1.355***
	(7.638)	(0.096)
constant	6,010.924***	63.000***
	(128.723)	(1.623)
Observations	8,849	8,849
R^2	0.023	0.040
Adjusted R^2	0.022	0.040
Residual SE	4,937.231	62.233
F Statistic	41.671***	74.261***
Note:		*p<0.1; **p<0.05; ***p<0.01

Table H.4. Robustness Check for Non-Logged Citations by Type with Controls

	citation type				
	cases	authority	record	brief	sec. sources
gender	2.010*	1.263***	1.250***	0.184	−0.196**
	(1.195)	(0.434)	(0.392)	(0.136)	(0.078)
chief status	0.417	0.685	0.527	0.730***	−0.012
	(1.868)	(0.679)	(0.613)	(0.213)	(0.122)
appellate experience	−0.271***	−0.054***	0.010	−0.005	−0.004
	(0.050)	(0.018)	(0.016)	(0.006)	(0.003)
party	8.089***	2.991***	2.366***	0.849***	0.255***
	(1.037)	(0.377)	(0.340)	(0.118)	(0.068)
time trend	0.961***	0.127***	0.206***	0.101***	−0.038***
	(0.072)	(0.026)	(0.023)	(0.008)	(0.005)
constant	49.048***	12.224***	0.573	0.018	1.137***
	(1.206)	(0.438)	(0.396)	(0.138)	(0.079)
Observations	8,849	8,849	8,849	8,849	8,849
R^2	0.031	0.014	0.018	0.025	0.011
Adjusted R^2	0.031	0.014	0.017	0.025	0.010
Residual SE	46.242	16.810	15.179	5.282	3.017
F Statistic	57.387***	25.626***	31.939***	46.084***	18.843***
Note:					*p<0.1; **p<0.05; ***p<0.01

APPENDIX I: SUPPLEMENTAL REGRESSIONS FOR SECTION IV.B

Table I.1. OLS Models Regressing Gender on Key Dependent Variables with Controls

	length	total citations
gender	0.042***	0.055***
	(0.016)	(0.018)
chief status	−0.011	0.012
	(0.025)	(0.028)
appellate experience	−0.003***	−0.006***
	(0.001)	(0.001)
party	0.176***	0.179***
	(0.014)	(0.016)
time trend	0.009***	0.018***
	(0.001)	(0.001)
constant	8.522***	3.930***
	(0.016)	(0.018)
Observations	8,849	8,847
R^2	0.037	0.056
Adjusted R^2	0.037	0.055
Residual SE	0.610	0.703
F Statistic	68.050***	104.006***
Note:		*p<0.1; **p<0.05; ***p<0.01

Table I.2. OLS Models Regressing Gender on Citations, by Type with Controls

	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
gender	0.039**	0.042	0.150***	0.077	−0.067
	(0.019)	(0.026)	(0.057)	(0.049)	(0.059)
chief status	−0.003	0.029	0.060	0.188**	−0.043
	(0.029)	(0.041)	(0.090)	(0.082)	(0.088)
appellate experience	−0.006***	−0.005***	−0.001	−0.004*	−0.002
	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)
party	0.140***	0.186***	0.268***	0.223***	0.030
	(0.016)	(0.023)	(0.050)	(0.043)	(0.050)
time trend	0.018***	0.010***	0.032***	0.032***	−0.027***
	(0.001)	(0.002)	(0.004)	(0.003)	(0.003)
constant	3.648***	2.085***	1.085***	0.712***	1.174***
	(0.019)	(0.026)	(0.062)	(0.055)	(0.060)
Observations	8,844	8,644	2,904	2,189	1,531
R^2	0.044	0.017	0.044	0.067	0.045
Adjusted R^2	0.044	0.017	0.042	0.065	0.041
Residual SE	0.726	0.998	1.318	0.973	0.947
F Statistic	81.691***	30.586***	26.372***	31.193***	14.247***
Note:					*p<0.1; **p<0.05; ***p<0.01

APPENDIX J: SUPPLEMENTAL REGRESSIONS FOR SECTION IV.C

Table J.1. OLS Models Regressing Author Gender on Case Citations by Issue Area Subgroup

	cases (logged) gendered issues	cases (logged) marginalized issues	cases (logged) neutral issues
gender	0.179***	0.008	0.127***
	(0.043)	(0.047)	(0.022)
constant	3.658***	3.659***	3.845***
	(0.022)	(0.023)	(0.011)
Observations	1,436	1,256	6,152
R^2	0.012	0.00002	0.005
Adjusted R^2	0.011	-0.001	0.005
Residual SE	0.726	0.705	0.743
F Statistic	17.407***	0.026	31.826***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.2. OLS Models Regressing Author Gender on Legal Authority Citations by Issue Area Subgroup

	authority (logged) gendered issues	authority (logged) marginalized issues	authority (logged) neutral issues
gender	0.165***	0.047	0.154***
	(0.055)	(0.064)	(0.030)
constant	1.588***	1.989***	2.340***
	(0.029)	(0.032)	(0.014)
Observations	1,383	1,229	6,032
R^2	0.007	0.0004	0.004
Adjusted R^2	0.006	-0.0004	0.004
Residual SE	0.907	0.965	0.978
F Statistic	9.117***	0.536	26.560***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.3. OLS Models Regressing Author Gender on Record Citations by Issue Area Subgroup

	record (logged) gendered issues	record (logged) marginalized issues	record (logged) neutral issues
gender	0.407***	0.298*	0.173**
	(0.134)	(0.158)	(0.069)
constant	1.759***	1.450***	1.503***
	(0.073)	(0.074)	(0.034)
Observations	524	395	1,985
R^2	0.017	0.009	0.003
Adjusted R^2	0.016	0.006	0.003
Residual SE	1.404	1.293	1.327
F Statistic	9.269***	3.576*	6.292**
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.4. OLS Models Regressing Author Gender on Brief Citations by Issue Area Subgroup

	briefs (logged) gendered issues	briefs (logged) marginalized issues	briefs (logged) neutral issues
gender	0.123	0.086	0.193***
	(0.121)	(0.126)	(0.060)
constant	1.078***	1.034***	1.182***
	(0.068)	(0.061)	(0.029)
Observations	315	293	1,581
R^2	0.003	0.002	0.007
Adjusted R^2	0.0001	-0.002	0.006
Residual SE	1.002	0.918	1.017
F Statistic	1.026	0.467	10.412***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.5. OLS Models Regressing Author Gender on Secondary Source Citations by Issue Area Subgroup

	sec. sources (logged) gendered issues	sec. sources (logged) marginalized issues	sec. sources (logged) neutral issues
gender	−0.008	−0.025	−0.099
	(0.109)	(0.139)	(0.072)
constant	0.653***	0.537***	0.963***
	(0.062)	(0.059)	(0.034)
Observations	220	163	1,148
R^2	0.00002	0.0002	0.002
Adjusted R^2	-0.005	-0.006	0.001
Residual SE	0.759	0.680	1.021
F Statistic	0.005	0.032	1.926
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.6. OLS Models Regressing Author Gender on Citations, by Type Controlling for Issue Area Subgroup

	citation type				
	cases (logged)	authority (logged)	record (logged)	briefs (logged)	sec. sources (logged)
gender	0.119***	0.140***	0.235***	0.167***	−0.077
	(0.018)	(0.024)	(0.057)	(0.049)	(0.058)
marginalized cases	−0.042	0.371***	−0.347***	−0.050	−0.129
	(0.028)	(0.038)	(0.089)	(0.081)	(0.099)
neutral cases	0.172***	0.748***	−0.323***	0.124**	0.282***
	(0.022)	(0.029)	(0.066)	(0.062)	(0.071)
constant	3.675***	1.595***	1.810***	1.064***	0.675***
	(0.020)	(0.027)	(0.061)	(0.059)	(0.067)
Observations	8,844	8,644	2,904	2,189	1,531
R^2	0.019	0.081	0.015	0.009	0.025
Adjusted R^2	0.018	0.081	0.014	0.008	0.023
Residual SE	0.735	0.965	1.337	1.002	0.956
F Statistic	55.953***	254.180***	15.017***	6.948***	13.187***
Note:					*p<0.1; **p<0.05; ***p<0.01

Issue-area-fixed effects were implemented to ensure the expectations were met in all issue areas and there were no heterogeneous effects. Gender retains signage and significance in all expected models, with substantive values slightly decreased from the primary models. Note that abortion is the baseline for the fixed effects.

Table J.7. OLS Models Regressing Author Gender on Key Variables, Controlling for Issue Area

	length (logged)	total citations (logged)	case citations (logged)
gender	0.110***	0.138***	0.116***
	(0.015)	(0.017)	(0.018)
ada	−0.203***	−0.302***	−0.454***
	(0.051)	(0.059)	(0.061)
affirmative action	0.053	0.038	0.030
	(0.071)	(0.081)	(0.084)
campaign finance	0.140**	0.218***	0.169**
	(0.065)	(0.074)	(0.076)
capital punishment	0.159***	0.080	0.080
	(0.049)	(0.056)	(0.058)
commerce clause	0.159**	0.251***	0.158*
	(0.079)	(0.090)	(0.093)
contract clause	−0.194***	−0.269***	−0.347***
	(0.062)	(0.071)	(0.073)
corporate veil	−0.189***	−0.386***	−0.465***
	(0.050)	(0.058)	(0.059)
criminal appeals	−0.160***	−0.261***	−0.370***
	(0.044)	(0.050)	(0.052)
epa	−0.064	−0.009	−0.554***
	(0.050)	(0.058)	(0.060)
gender discrimination	−0.387***	−0.586***	−0.624***
	(0.051)	(0.059)	(0.060)
race discrimination	−0.430***	−0.630***	−0.685***
	(0.048)	(0.055)	(0.057)
sexual harassment	−0.324***	−0.484***	−0.550***
	(0.048)	(0.055)	(0.056)
takings	−0.232***	−0.213***	−0.356***
	(0.050)	(0.058)	(0.059)
constant	8.798***	4.365***	4.172***
	(0.043)	(0.049)	(0.051)
Observations	8,849	8,847	8,844
R^2	0.064	0.088	0.084
Adjusted R^2	0.062	0.087	0.082
Residual SE	0.602	0.692	0.711
F Statistic	43.032***	60.933***	57.597***
Note:			*p<0.1; **p<0.05; ***p<0.01

Table J.8. OLS Models Regressing Author Gender on Citations by Type, Controlling for Issue Area

	citation type			
	authority (logged)	record (logged)	briefs (logged)	sec. sources (logged)
gender	0.123***	0.255***	0.151***	−0.085
	(0.023)	(0.057)	(0.049)	(0.053)
ada	0.492***	0.036	−0.212	−0.379**
	(0.080)	(0.177)	(0.152)	(0.159)
affirmative action	0.015	0.115	−0.128	−0.113
	(0.110)	(0.232)	(0.206)	(0.229)
campaign finance	0.466***	0.309	0.066	0.094
	(0.102)	(0.223)	(0.177)	(0.171)
capital punishment	0.147*	0.210	0.049	−0.012
	(0.076)	(0.164)	(0.138)	(0.144)
commerce clause	0.904***	−0.334	0.073	0.445**
	(0.122)	(0.284)	(0.224)	(0.184)
contract clause	0.071	−0.304	−0.192	0.230
	(0.096)	(0.207)	(0.181)	(0.159)
corporate veil	0.035	−0.035	0.033	0.043
	(0.078)	(0.170)	(0.145)	(0.131)
criminal appeals	0.403***	0.335**	−0.128	−0.387***
	(0.068)	(0.149)	(0.121)	(0.124)
epa	1.327***	0.176	0.249*	0.847***
	(0.078)	(0.172)	(0.135)	(0.132)
gender discrimination	−0.356***	0.286	−0.333**	−0.309*
	(0.080)	(0.182)	(0.157)	(0.165)
race discrimination	−0.273***	0.345**	−0.221	−0.289*
	(0.075)	(0.172)	(0.140)	(0.153)
sexual harassment	−0.426***	0.807***	−0.131	−0.200
	(0.074)	(0.161)	(0.141)	(0.143)
takings	0.166**	0.207	−0.061	0.353***
	(0.078)	(0.167)	(0.138)	(0.132)
constant	1.944***	1.267***	1.226***	0.851***
	(0.067)	(0.144)	(0.117)	(0.116)
Observations	8,644	2,904	2,189	1,531
R^2	0.170	0.038	0.024	0.169
Adjusted R^2	0.169	0.034	0.017	0.162
Residual SE	0.918	1.323	0.997	0.885
F Statistic	126.294***	8.193***	3.775***	22.078***
Note:				*p<0.1; **p<0.05; ***p<0.01

APPENDIX K: IDEOLOGY SPECIFICATION CORRELATIONS

Table K.1. Correlation Checks for Judicial Ideology Specifications

	appointing president's party		
JCS score	−1.102***		
	(0.005)		
DIME score		0.410***	
		(0.003)	
CBI score			0.256***
			(0.005)
constant	0.506***	0.037***	0.076***
	(0.002)	(0.003)	(0.005)
Observations	8,573	8,085	5,414
R^2	0.825	0.632	0.322
Adjusted R^2	0.825	0.632	0.321
Residual SE	0.205	0.245	0.331
F Statistic	40,408.400***	13,855.330***	2,564.719***
Note:			*p<0.1; **p<0.05; ***p<0.01

APPENDIX L: SUPPLEMENTAL REGRESSIONS FOR SECTION IV.D

Table L.1. OLS Regression for Citations by Type on Subset of Liberal-Authored Opinions

	citation type (liberal judges)				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
gender	0.016	0.085**	0.186**	0.249***	−0.155*
	(0.026)	(0.036)	(0.083)	(0.066)	(0.079)
constant	3.910***	2.295***	1.698***	1.238***	0.922***
	(0.016)	(0.022)	(0.049)	(0.040)	(0.046)
Observations	3,508	3,446	1,283	1,027	691
R^2	0.0001	0.002	0.004	0.014	0.006
Adjusted R^2	-0.0002	0.001	0.003	0.013	0.004
Residual SE	0.737	1.012	1.411	1.018	0.988
F Statistic	0.379	5.656**	5.006**	14.034***	3.846*
Note:					*p<0.1; **p<0.05; ***p<0.01

Table L.2. OLS Regression for Citations by Type on Subset of Conservative-Authored Opinions

	citation type (conservative judges)				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
gender	0.155***	0.058	0.211**	−0.127	−0.002
	(0.028)	(0.039)	(0.083)	(0.079)	(0.094)
constant	3.725***	2.100***	1.434***	1.094***	0.847***
	(0.011)	(0.015)	(0.036)	(0.032)	(0.036)
Observations	5,060	4,930	1,544	1,110	805
R^2	0.006	0.0005	0.004	0.002	0.00000
Adjusted R^2	0.006	0.0003	0.004	0.001	-0.001
Residual SE	0.738	0.991	1.268	0.969	0.945
F Statistic	30.155***	2.260	6.425**	2.580	0.001
Note:					*p<0.1; **p<0.05; ***p<0.01

APPENDIX M: SUPPLEMENTAL REGRESSIONS FOR SECTION IV.E

Table M.1. OLS Regression for Citations by Type with Circuit-Fixed Effects

	citation type:		
	record (logged)	briefs (logged)	secondary sources (logged)
gender	0.272***	0.130***	−0.085
	(0.056)	(0.049)	(0.059)
10th Cir	0.497***	0.782***	−0.013
	(0.119)	(0.100)	(0.146)
11th Cir.	−0.161	0.115	0.250
	(0.136)	(0.142)	(0.164)
1st Cir.	−0.396***	−0.061	−0.064
	(0.146)	(0.175)	(0.145)
2d Cir.	0.722***	0.321***	0.195
	(0.114)	(0.106)	(0.147)
3d Cir.	−0.054	0.533***	0.283*
	(0.133)	(0.108)	(0.152)
4th Cir.	1.035***	0.203*	−0.002
	(0.108)	(0.112)	(0.167)
5th Cir.	−0.228*	−0.023	−0.084
	(0.117)	(0.183)	(0.153)
6th Cir.	0.613***	0.436***	0.096
	(0.110)	(0.104)	(0.146)
7th Cir.	−0.031	0.122	−0.084
	(0.111)	(0.116)	(0.140)
9th Cir.	−0.494***	−0.329**	0.230
	(0.128)	(0.160)	(0.141)
D.C. Cir.	0.766***	0.604***	0.450***
	(0.116)	(0.106)	(0.154)
Fed. Cir.	0.768***	0.607***	0.506***
	(0.149)	(0.134)	(0.166)
constant	1.215***	0.766***	0.763***
	(0.082)	(0.085)	(0.120)
Observations	2,768	2,994	1,468
R^2	0.139	0.080	0.037
Adjusted R^2	0.135	0.074	0.028
Residual SE	1.250	0.969	0.954
F Statistic	34.194***	13.847***	4.270***
Note:			*p<0.1; **p<0.05; ***p<0.01

APPENDIX N: SUPPLEMENTAL FIGURES FOR SECTION IV.F

Figure N.1. Average Opinion Length (in Words) for Man-Authored Opinions by Number of Women on Panel

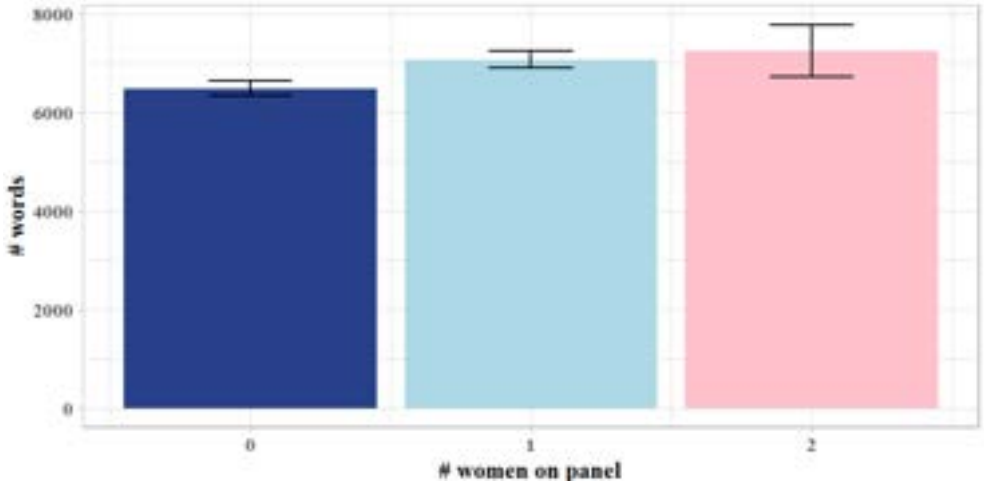


Figure N.2. Average Opinion Length (in Words) for Woman-Authored Opinions by Number of Women on Panel

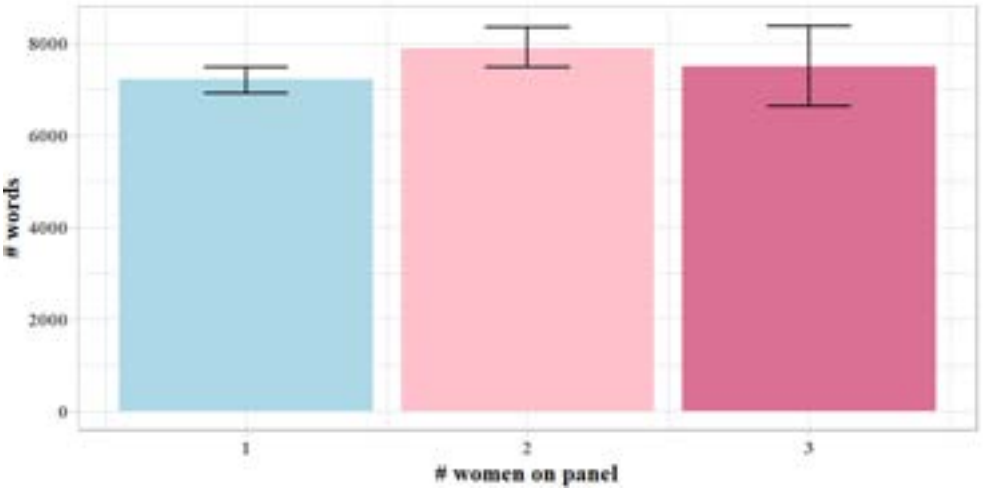


Figure N.3. Average Total Citations for Man-Authored Opinions by Number of Women on Panel

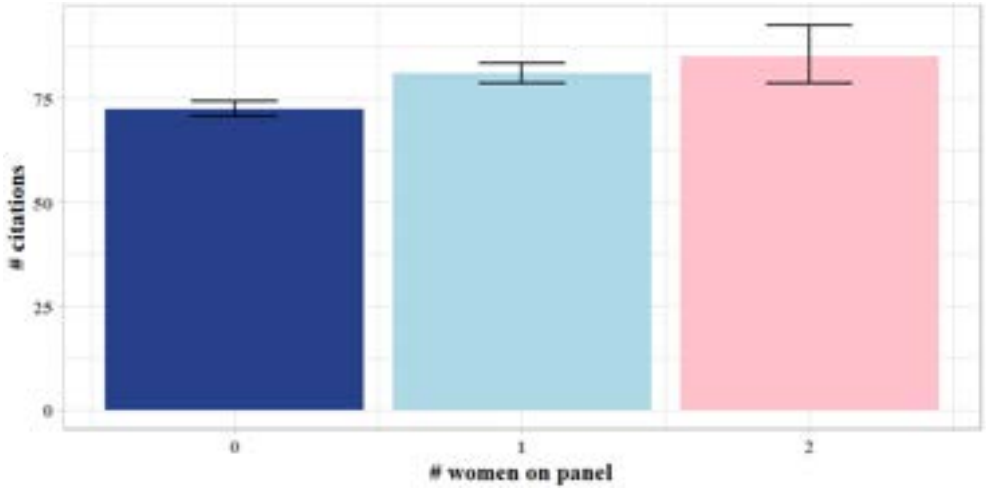
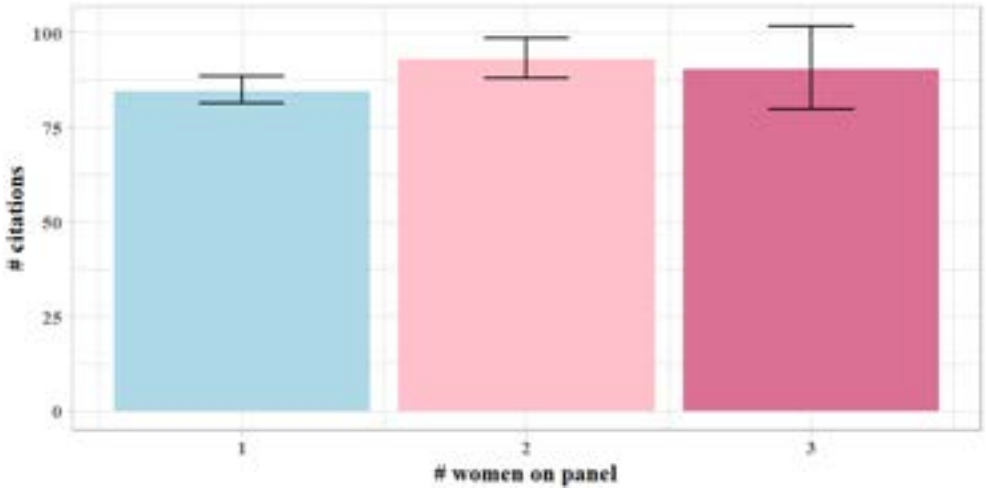


Figure N.4. Average Total Citations for Woman-Authored Opinions by Number of Women on Panel



APPENDIX O: SUPPLEMENTAL REGRESSIONS FOR SECTION IV.F

Table O.1. OLS Regression for Key Dependent Variables with Interaction for Author Gender and Panel Composition

	length (logged)	total citations (logged)
gender	0.059	0.072*
	(0.038)	(0.044)
women on panel	0.077***	0.093***
	(0.013)	(0.015)
gender*women on panel	−0.014	−0.012
	(0.027)	(0.031)
constant	8.580***	4.038***
	(0.010)	(0.012)
Observations	8,595	8,593
R^2	0.011	0.012
Adjusted R^2	0.011	0.012
Residual SE	0.618	0.720
F Statistic	31.419***	36.115***
Note:		*p<0.1; **p<0.05; ***p<0.01

Table O.2. OLS Regression for Citations by Type with Interaction for Author Gender and Panel Composition

	citation type				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
gender	0.039	0.113*	−0.026	0.043	−0.006
	(0.045)	(0.062)	(0.137)	(0.119)	(0.148)
women on panel	0.089***	0.082***	0.092*	0.111***	−0.038
	(0.015)	(0.021)	(0.048)	(0.042)	(0.047)
gender*women on panel	−0.005	−0.051	0.143	0.008	−0.024
	(0.032)	(0.044)	(0.098)	(0.084)	(0.108)
constant	3.740***	2.126***	1.481***	1.084***	0.891***
	(0.012)	(0.016)	(0.038)	(0.033)	(0.038)
Observations	8,590	8,390	2,815	2,165	1,484
R^2	0.009	0.004	0.011	0.009	0.002
Adjusted R^2	0.009	0.004	0.010	0.008	-0.0003
Residual SE	0.739	1.005	1.340	0.995	0.967
F Statistic	26.746***	12.264***	10.470***	6.715***	0.834
Note:					*p<0.1; **p<0.05; ***p<0.01

Table O.3. OLS Regression for Citations by Type, on Subset of Woman-Authored Opinions

	citation type (woman-authored)				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
women on panel	0.084***	0.032	0.234**	0.119	−0.062
	(0.028)	(0.041)	(0.093)	(0.078)	(0.089)
constant	3.778***	2.239***	1.456***	1.127***	0.885***
	(0.042)	(0.062)	(0.142)	(0.122)	(0.131)
Observations	2,055	2,013	721	539	353
R^2	0.005	0.0003	0.009	0.004	0.001
Adjusted R^2	0.004	-0.0002	0.007	0.002	-0.001
Residual SE	0.716	1.047	1.452	1.065	0.885
F Statistic	9.396***	0.604	6.409**	2.348	0.486
Note:					*p<0.1; **p<0.05; ***p<0.01

Table O.4. OLS Regression for Citations by Type, on Subset of Man-Authored Opinions

	citation type (man-authored)				
	cases (logged)	authority (logged)	record (logged)	brief (logged)	sec. sources (logged)
women on panel	0.089***	0.082***	0.092**	0.111***	−0.038
	(0.015)	(0.021)	(0.046)	(0.041)	(0.048)
constant	3.740***	2.126***	1.481***	1.084***	0.891***
	(0.012)	(0.016)	(0.037)	(0.032)	(0.039)
Observations	6,535	6,377	2,094	1,566	1,131
R^2	0.005	0.002	0.002	0.005	0.001
Adjusted R^2	0.005	0.002	0.001	0.004	-0.0003
Residual SE	0.745	0.992	1.299	0.969	0.991
F Statistic	33.335***	15.560***	3.894**	7.390***	0.608
Note:					*p<0.1; **p<0.05; ***p<0.01