

## Gender Diversity, Women's Leadership, and Consensus in State Supreme Courts

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**Abstract:** In this paper, we argue that the leadership of women as chief justice or the majority opinion author, as well as an increased presence of women on the panel, should increase the likelihood of unanimous decisions and the size of majority coalitions in states supreme courts. Using an original dataset of cases in three policy areas from all state supreme courts from 1990-2015, we uncover some surprising results. In some issue areas, majority coalitions are larger when a woman serves as the majority opinion author, though we see smaller coalitions when more women are on the court and a man is assigned to write the majority opinion. Taken together, our results suggest that the role of gender diversity and women's leadership in the opinion-writing process may be more complex than previously understood.

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As the number of women serving on American courts has increased, a growing literature has sought to understand the effect of gender diversity on judicial decision-making (see Boyd, Epstein, and Martin 2010; Kenney 2013 for an overview). This literature has often focused on differences in votes on the merits between women and men, with mixed results. For the most part, a judge's gender does not seem to affect their decisions in federal courts, except in certain policy areas, like employment discrimination (e.g., Boyd 2016; Boyd, Epstein, and Martin 2010; Moyer and Haire 2015; Peresie 2005; Songer, Davis, and Haire 1994). Expanding the examination to include state courts (Boyd and Nelson 2017; McCall 2008; McCall and McCall 2007) and the intersection of race and gender (T. Collins and Moyer 2007) can reveal some differences in decision-making in cases related to criminal justice (also obscenity in Songer and Crews-Meyer 2000). Still, anyone hoping to find convincing evidence of consistent gender differences in decisions across a broad range of issues would be sorely disappointed by the extant literature.

This "difference" approach to studying women judges has been criticized because the lack of clear results seemingly reduces the rationale for gender diversity in courts to those differences, when such diversity is arguably necessary for the courts to be viewed as legitimate institutions capable of administering justice to a diverse population (see Kenney 2008, 2013; Malleson 2003). On a practical level, examining only the votes on the merits of a case ignores a range of subtler ways in which gender can influence the work of a judge. Scholars have expanded on the theoretical groundwork of the difference literature by considering the behavior of judges on mixed-gender panels in the U.S. Courts of Appeals (Farhang and Wawro 2004; Moyer 2013; Moyer and Haire 2015) and on state supreme courts (Szmer, Christensen, and Kaheny 2015), how gender influences leadership styles (Boyd 2013; Norris and Tankersley 2018), and whether there are differences in when and how women and men write judicial opinions (Christensen, Szmer, and Stritch 2012; Farhang, Kastlelec, and Wawro 2015; Haire, Moyer, and Treier 2013).

We seek to continue this exploration of the subtler effects of gender and leadership in this paper by focusing on opinions produced by state supreme courts. Scholars studying gender and judging have generally been more focused on the federal courts, for which data are more readily available. We focus on state supreme courts with a new, expansive dataset because this approach provides numerous advantages to uncovering the role of gender in collegial courts more generally. Foremost among these is the variation in gender diversity and leadership across the states. While some states have a long history of appointing or electing women to the state's highest court, other states have only recently begun to do so (Allen and Wall 1993; Kenney 2013; Martin and Pyle 2002). Women also regularly serve as chief justice in state supreme courts, especially as the number of women serving on a court increases (Norris and Tankersley 2018).<sup>1</sup> This level of variation in the presence and leadership of women justices provides more analytical leverage, in addition to the variation in institutional rules and political context that are informative to studies of state courts more generally. The fact that state supreme courts do most of their work *en banc*, as compared to the rotating three-judge panels in the U.S. Courts of Appeals, is also important when we consider the consistency of any observed effects of gendered leadership and gender diversity.

With this in mind, we seek to expand the conversation about the role of women judges and justices by examining the process through which a majority coalition is formed and opinions are written. In doing so, we build on a rich literature examining norms of unanimity, consensus, and coalition-building in both state and federal courts (e.g., Brace and Hall 1990; Epstein, Segal, and Spaeth 2001; Leonard and Ross 2014). We add gender to this story, expanding on the idea that women exhibit different management and interpersonal styles in facilitating settlements among

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<sup>1</sup> As of 2014, just over 30% of state court judges were women (George and Yoon 2017). During the period studied in this paper, 1990 to 2015, all 52 state supreme courts had at least one woman serve as a justice and a woman served as chief justice in 41 of these courts.

parties or in collaborating with colleagues on opinions (e.g., Boyd 2013; Eagly and Johannesen-Schmidt 2001; Haire, Moyer, and Treier 2013; Szmer, Christensen, and Kaheny 2015). Bringing these perspectives together, we ask whether the presence and leadership of women on a state supreme court bench affects consensus among the justices. Specifically, we consider whether the likelihood of a unanimous decision or the size of the coalition on a case are influenced by the number of women serving on the court, whether a woman is serving as chief justice at the time of a decision, or whether the majority opinion is authored by a woman justice. If women are more likely to “foster collaboration, bridge building, and negotiation,” as suggested by Boyd (2013, 211), courts with more women justices and with women serving in leadership roles should be characterized by larger coalitions. We test our expectations using an original dataset composed of more than 7,000 cases in all 50 states from the years 1990-2015. Our findings highlight that it is the gender of the majority opinion author rather than that of the chief justice that can influence the size of the majority coalition in some issue areas. Moreover, increasing the number of women serving on a court decreases the size of the majority coalition when a man writes the opinion, suggesting that there are more subtle gender dynamics at play during the opinion-writing process than previously recognized.

## **Gender and Judging**

Once women began to be appointed and elected to judgeships, scholars began examining how women judges behave differently from their male colleagues. Early exploratory studies were often theoretically limited because little was done to explain why we should observe differences in judging between women and men. Regardless of the approach, empirical evidence of substantial gender differences has always been mixed, as decision-making seems to differ mostly in gender-based employment discrimination cases (e.g., Boyd 2016; Boyd, Epstein, and Martin 2010; Moyer

and Haire 2015; Peresie 2005; Songer, Davis, and Haire 1994). Such a result could be a sign that men are more likely to defer to women justices on cases that have more “feminine” characteristics (see e.g., Ridgeway 2001; Ridgeway and Smith-Lovin 1999). This analytical approach, to emphasize the differences between women and men on the bench, has been criticized as reductionist because the lack of results can make it seem as if gender diversity is important only if women and men reach different decisions, when there are many other reasons to favor a diverse judiciary (Kenney 2008, 2013; Malleson 2003; Moyer 2013).

Another theoretical approach has been to hypothesize that women bring a “different voice” to the bench, which provides a stronger theoretical explanation for the consistent findings regarding discrimination cases (Gilligan 1982; Martin 1990; Boyd, Epstein, and Martin 2010). Following this approach, women and men may view discrimination cases from different perspectives because women are more likely to have experienced discrimination in their careers. Along these lines, Moyer and Haire (2015) find generational differences among women judges, though it is important to note that women judges have not always embraced the different voice idea in describing their own experiences (Kenney 2013, 5; Martin 1993).

Among others, Kenney (2013, 16) has urged scholars to consider gender as a “social process” rather than a categorical variable of difference or a “euphemism for women.” With a more nuanced understanding of gender, scholars have begun to find subtler ways that women’s leadership and gender diversity more generally may influence the judicial process and outcomes. With regard to leadership, women tend to foster more collaborative, cooperative environments than men in the same leadership role (Boyd 2013; Haire and Moyer 2015, 50; Kathlene 1994; Rosenthal 1998). These procedural values have been shown to result in greater consensus or moderation in outcomes at both the trial and appellate level (Boyd 2013; Haire and Moyer 2015, 53). There is evidence that judges and justices are aware of these differences in leadership, as peer votes are more likely to result

in a woman chief justice in ideologically diverse courts where consensus might be harder to reach (Norris and Tankersley 2018).

Understanding how gender diversity can affect judicial behavior requires that we look beyond individual behavior to see how all judges behave in diverse environments. Studies of federal appellate courts have illustrated the effects that gender diversity on a panel can have on outcomes and opinion-writing (Boyd, Epstein, and Martin 2010; Farhang and Wawro 2004; Haire and Moyer 2015, 97; Haire, Moyer, and Treier 2013; Moyer 2013; Peresie 2005). Beyond the panels, gender diversity may require more than the presence of a single woman judge. Scholars have demonstrated that all judges' behavior can shift when a "critical mass" of women join the bench, a finding that has been consistent across courts in the United States and Canada (P. M. Collins, Manning, and Carp 2010; Johnson, Songer, and Jilani 2011; Moyer 2013; Songer, Radieva, and Reid 2016), though it has not been the subject of much attention with regard to state supreme courts (but see McCall and McCall 2007; Songer and Crews-Meyer 2000).<sup>2</sup>

### **Gender Diversity, Leadership, and Coalition Formation**

Building on the literature regarding the gender diversity and women's leadership in courts, we should expect to see effects in the formation of majority coalitions in state supreme courts. Understanding how coalitions form, and why justices decide to dissent from the majority, has been the focus of judicial scholars for decades. Indeed, some of the foundational work on state supreme court decision-making focuses on consensus and the decision of individual justices to dissent (e.g.,

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<sup>2</sup> Though it is outside the scope of this paper, we should note that scholars have studied diversity with regard to race and ethnicity in the courts, often with similar results (e.g., Bonneau and Rice 2009; Haire and Moyer 2015; Kastellec 2013). We cannot yet focus on the intersection of race and gender in this analysis, given the relatively small number of women of color who serve as state supreme court justices, though it will be worthwhile to do so in the future. The same can be said for extending this analysis to include sexual orientation and gender identity.

Brace and Hall 1990, 1993; M. G. Hall and Brace 1989; Jaros and Canon 1971). Consistent throughout these studies are the effects of reelection concerns on individual justice behavior and the influence of the opinion assignment power, when a chief justice possesses it. Courts with contestable elections, as well as those with a non-random opinion assignment, were generally shown in these early studies to have higher rates of dissent than their counterparts in different institutional contexts.

These conclusions continue to hold in more recent work on related questions of coalition-building at the state level. Elections, in particular, seem to reactivate and reinforce existing divisions among state supreme court justices during the opinion-writing stage, as cases in states with contestable elections tend to have more separate opinions written and smaller coalitions than appointed courts (Leonard and Ross 2014). The chief justice can also play a role in promoting consensus and discouraging dissent, as unanimous decisions are more frequent when chief justices are afforded more power and resources (M. E. K. Hall and Windett 2016).

Taken together, these literatures suggest that gender diversity and the leadership styles of women and men on state supreme courts may mitigate or exacerbate the effects observed in these studies. In leadership roles, women are thought to be more likely to work together and seek input from a broader range of voices in making decisions. Such predispositions have been shown to influence behavior and outcomes in federal district courts and courts of appeals (Boyd 2013; Haire, Moyer, and Treier 2013), so the effects should be present in state supreme courts as well. Indeed, skills that foster collaboration and consensus should be even more important in state supreme courts, where justices nearly always hear cases *en banc* with the same set of colleagues, than in appeals courts with rotating panels of judges.

We argue that gender diversity and women's leadership can have a subtle, but vital influence on the opinion-writing process by altering the decision-making environment. Whether or not their

experiences lead them to vote differently from men and whether or not their presence alters the decisions of their male colleagues, women justices can affect the process itself by shifting the dynamic between justices toward greater cooperation. This is not to say that women justices are more likely to agree with each other or to avoid disagreement in general; we argue only that the interpersonal skills thought to be more common in women leaders, like allowing more voices to be heard when decisions are made, should lead to a more collegial environment as coalitions are formed and opinions are written, less characterized by the partisan and ideological divisions that we have grown to expect in recent years. Of course, it is also possible that our expectations and the limited findings in the literature are based more on stereotypes of how women are believed to act than any true behavioral differences in reality. One needs to look no further than Wisconsin, where a majority of justices have been women for the last decade. Despite this fact, the supreme court has been deeply divided in recent years, often on personal terms, and shows no signs that it will shed its acrimonious reputation in the near future.<sup>3</sup>

There are three ways that we expect to see effects of gender diversity and women's leadership, resulting in three pairs of hypotheses. First, the number of women serving on a court should matter to the opinion-writing process. If women are more likely to seek cooperation and consensus in decision-making, the rate of unanimous decisions and the size of the majority coalition should increase as more women serve on a court. This is expected because women should be more likely than their male counterparts to find areas of agreement with the majority.

H<sub>1a</sub>: As the proportion of participating justices who are women increases, the likelihood that the case is decided unanimously increases.

H<sub>1b</sub>: As the proportion of participating justices who are women increases, the size of the majority coalition increases.

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<sup>3</sup> See, for example, Davey, Monica. "Wisconsin Judge Said to Have Attacked Colleague" *New York Times* 25 June 2011 <https://www.nytimes.com/2011/06/26/us/26judge.html>

Second, we should see a different, more collaborative decision-making environment when a woman leads the court as chief justice. The chief justice can set the tone of discussion among his or her colleagues, and in some states has the power to assign the majority opinion. Beyond the court, the chief justice is typically seen as the symbolic leader and administrator of the state court system, acting as a liaison to other political actors in lobbying for more resources for the courts (Langer et al. 2003; Norris and Tankersley 2018). For this reason, chief justices are thought to have a greater interest in reaching consensus and minimizing internal divisions than their colleagues. Women chief justices should be more willing or capable of using their position to achieve this goal, based on the literature on women's leadership.<sup>4</sup>

H<sub>2a</sub>: When the chief justice is a woman, the likelihood that the case is decided unanimously increases.

H<sub>2b</sub>: When the chief justice is a woman, the size of the majority coalition increases.

Finally, women justices should have the most influence over the opinion-writing environment when they are selected to write the majority opinion. In writing the opinion, a justice has the greatest influence over the content of the opinion and the extent to which it will reflect his or her colleagues' views. Based on the literature, women opinion authors should engage in this process differently than men, resulting in a more open and cooperative environment (Haire and Moyer 2015, 53). Such conciliatory behavior should minimize other justices' desire to vote against the majority.

H<sub>3a</sub>: When the majority opinion author is a woman, the likelihood that the cases is decided unanimously increases.

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<sup>4</sup> We argue that the chief justice's influence is persistent, in that they can create a more agreeable or divisive atmosphere among their colleagues. It is also possible that this influence is more conditional, in that the chief justice will only be associated with greater consensus when he or she is in the majority for a specific case. We account for this possibility in our modelling with an interaction for the gender of the chief justices and whether they were part of the majority coalition.

H<sub>3b</sub>: When the majority opinion author is a woman, the size of the majority coalition increases.

While these hypotheses are general, we expect the associated effects to differ across issue areas. In much of the literature on gender and decision-making, we see a more substantial effect of gender in issue areas that are gender-related, such as employment discrimination, than in areas that are not traditionally associated with gender (see e.g., Boyd, Epstein, and Martin 2010; Kenney 2013 for an overview). Areas where women have different lived experiences than men, like employment discrimination, are where we should see the strongest effects of gender. Accordingly, one of the three issue areas we draw cases from for this study is employment discrimination. We also examine cases regarding environmental law and searches and seizures, to see whether our hypothesized effects are generalizable across issue areas.

## Data and Methods

To test our hypotheses, we employ an original dataset that includes more than 7,000 decisions made by all 52 state supreme courts over the 26-year period from 1990-2015.<sup>5</sup> During this period, the number of women serving in states supreme courts increased substantially, as illustrated in the maps in Figure 1. Women also served as chief justice in 41 of the 52 courts, which are displayed in Figure 2. Included in our analysis are all cases decided with a signed opinion during this period in one of three issue areas: employment discrimination, environmental law, and search and seizure, a total of 6,854 cases.<sup>6</sup> The cases were identified using Westlaw's KeyCite system and then

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<sup>5</sup> Two states, Oklahoma and Texas, have separate courts to hear civil and criminal appeals, resulting in 52 state courts of last resort nationwide.

<sup>6</sup> Note that a number of these cases were excluded from the models due to missing data for one or more of the independent variables. Cases where a temporary or assigned judge wrote the majority opinion were also excluded because these are fundamentally different than opinions written by a regular member of the court who must repeatedly engage with their colleagues in the opinion-writing process.

“scraped” using OutWit Hub software. The votes of each justice were then coded by hand to determine whether each case was unanimous and how many justices were in the majority coalition. These data were combined with additional demographic data we collected about each justice in order to measure gender diversity among participating justices and identify the gender of all chief justices and majority opinion authors.

### **[Figures 1 and 2: Descriptive maps]**

To test our hypotheses, we use two dependent variables. The first is a dichotomous indicator of whether a decision was unanimous, meaning there were no dissenting votes or opinions dissenting in full or in part from the majority opinion.<sup>7</sup> The second dependent variable is the proportion of participating justices in the majority coalition in non-unanimous cases. A justice is coded as being in the majority if they write or join the majority opinion, write or join a concurring opinion, or vote to concur without opinion. This coding excludes justices who join or write an opinion that dissents in full or in part from the majority opinion and justices who vote to dissent without opinion.<sup>8</sup> To test across these measures of cooperation, we employ a logistic regression and a fractional logit model, respectively. Fractional logit models are more appropriate for proportional dependent variables than OLS regressions because the dependent variable cannot go below 0 or above 1 (see e.g., P. M. Collins, Corley, and Hamner 2015). As our observations are nested within states, all models include bootstrap cluster standard errors by state (Harden 2011).

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<sup>7</sup>To be clear, a unanimous decision means that all justices concurred in the judgment. It is possible that some of the decisions we code as unanimous have majority opinions containing reasoning that is not unanimously supported. We have not distinguished between different types of concurrences in this analysis, though that is surely an area worth exploring in the future.

<sup>8</sup>We base our coding on the way the separate opinions are reported in Westlaw. If an opinion is reported as dissenting, even in part, we consider that to be an expression of disagreement with the majority opinion, even if the justice ultimately concurs in the result.

### *Independent Variables*

Our main independent variables of interest are three measures of gender diversity and women's leadership: the proportion of participating justices who are women, whether the chief justice is a woman, and whether the majority opinion author is a woman.<sup>9</sup> Among the other independent variables included in our models are indicators of institutional rules, ideological diversity, and case factors. We also consider the possibility that the chief justice's influence is conditional on their position in a case by including an interaction between chief justice gender and whether he or she is in the majority coalition.

In line with previous work, we consider certain institutional rules that have been shown to influence the opinion-writing process and could affect how the coalitions are formed on state supreme courts (e.g., Choi, Gulati, and Posner 2010; Leonard and Ross 2014). First, we include indicators for the methods of judicial selection, as we know that unanimity is less common on courts where justices obtain their seats through partisan or nonpartisan elections.<sup>10</sup> Second, we code the procedure used to assign the majority opinion as either random/rotational or discretionary, which we see in states where the chief or most senior justice assigns the opinion (M. G. Hall 1990; Hughes, Wilhelm, and Vining 2015). We expect fewer unanimous decisions and smaller coalitions on those courts where the opinion is assigned by another justice (not randomly) as the assignment process can exacerbate existing divisions among justices. Third, we account for the institutional capacity of

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<sup>9</sup> We use the proportion of women justices who are participating rather than the count because state supreme courts vary in their size. These courts have between five and nine justices.

<sup>10</sup> An argument could be made to consider the method of judicial retention instead, but we choose to follow these studies in using the method of initial selection. We believe this is the most appropriate approach for this analysis because we are interested in court-level effects. Even when justices are only subject to contestable elections for their initial term, it is possible that divisions among sitting justices can be "reactivated and reinforced" by elections more generally (Leonard and Ross 2014).

the court, as justices with more resources and fewer cases will have more time to spend on each opinion and majority opinion authors may have greater capacity to accommodate their colleagues' views in their drafts. Squire's (2008) measure of court professionalism takes account of the salaries and staff provided to state supreme court justices, as well as the level of discretion the court has over its docket. Thus, we use Squire's index as a measure of institutional capacity, in addition to a dichotomous indicator of whether a state has an intermediate appellate court, which is traditionally used in the literature.

We also expect that certain case-level factors will make consensus easier or more difficult to reach. Most straightforward, we include the number of justices participating in a case because unanimity should be harder to reach when there are more justices participating. Relatedly, we account for the ideological diversity of these participating justices, since increased ideological diversity can make it more challenging for the majority opinion author to reach consensus across the court. We measure ideology using the Brace, Langer, and Hall (2000) PAJID scores and calculate the standard deviation of the ideology scores of the justices participating in the case to indicate the diversity of the panel. This measure serves as an indicator of how challenging it will be to garner unanimity or larger coalitions on the court, irrespective of who is writing the majority opinion. In contrast, consensus should be less challenging to reach when the court is affirming the lower court's decision in full, as the majority opinion author may be able to adopt the lower court's reasoning and language without engendering opposition from their colleagues. A case where the court is reversing or remanding part of lower court's decision requires more original discussion and may open up more avenues for disagreement.<sup>11</sup>

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<sup>11</sup> Our coding of this variable is based on the way the state supreme court's disposition is reported in Westlaw. Lower court decisions are coded as affirmed if they are reported as "affirmed," "affirmed as modified," "affirmed with instructions," or "affirmed and remanded." This means that decisions that are reported as "affirmed in part" and dismissed, remanded, reversed, or vacated in part, are not included in the "affirmed" category. It is worth noting that our results did not change even when

Scholars have demonstrated that judges are responsive to certain factors associated with more important cases, so we include indicators of three such factors (Brace and Boyea 2008; Canes-Wrone, Clark, and Kelly 2014; Langer 2002). First is the number of amicus briefs filed in a case, which can be a signal to justices that external actors are invested in a case. Consensus may be harder to obtain when the court is listening to more voices through these briefs and justices are concerned with how their decision will be viewed by external actors. Second, we include an indicator for constitutional cases based on the headnotes associated with a case in Westlaw, with the expectation that cases involving constitutional issues will require more discussion and potentially disagreement than cases that do not address a constitutional issue. Finally, we look to the participation of the state’s attorney general or solicitor general, denoting the importance of the case to the executive branch. In these cases, we might expect to see greater consensus among justices, as there may be an incentive for the court to speak with a singular voice.

**[Table 1: Descriptive statistics]**

Some descriptive statistics are presented in Table 1 to illustrate how common the factors identified above are in the three issue areas we are examining here. These issue areas, employment discrimination, environmental law, and search and seizure, were selected because they vary in a number of ways that result in a stronger test of our theoretical expectations. Gender-based employment discrimination is the area studied most frequently in the literature and where gender effects have most often been observed. We collected all employment discrimination cases to broaden our data and provide a more conservative test of our theory. Environmental law is not

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we included all of these “affirmed in part” opinions in the “affirmed” category. We choose to report the results here using the more restrictive coding because it is a better reflection of the theoretical explanation for this variable.

typically a “gendered” area of law, but it is salient to a number of actors external to the court, both within state government and in the public. The last issue area, search and seizure, was selected to account for the large share of criminal justice issues state supreme court justices must deal with; we know from the literature that criminal cases like these can be especially salient to justices, particularly in states where they are elected and must be wary of a “soft on crime” label (Canes-Wrone, Clark, and Kelly 2014; Huber and Gordon 2004). Criminal justice is also not traditionally considered a gendered area of law (though see Smooth 2011).

The descriptive statistics presented in Table 1 suggest that these issues will provide a strong test of our theory because they vary in the case-level indicators of importance, but are mostly consistent in the outcomes and institutional variables. Indeed, the most notable differences are that amicus briefs are filed less frequently in search and seizure cases and the attorney general or solicitor general are least likely to participate in employment discrimination cases. Constitutional issues are also somewhat more common in environmental cases than in the other issue areas studied here. It is also worth noting the inescapable point that most cases decided by state supreme courts across the issue areas are unanimous, and that majority coalitions tend to be large, as we would expect in institutions based on majoritarian decision-making. These details about our dependent variables are important to keep in mind as we consider the results of our models.

## **Results**

We first consider the likelihood of a unanimous decision, with Table 2 displaying the results of a series of logistic regressions, using bootstrap clustered standard errors by state. We report coefficients in the tables.<sup>12</sup> One of the clearest results is that none of the gender variables affect the likelihood of the decision being unanimous, a result that holds across all issue areas. Considering the

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<sup>12</sup> Marginal effects for significant variables are presented in Table A1 in the Appendix

literature, it is especially notable that we find no effects of gender in the employment discrimination cases. This result suggests that previous findings related to gender-based discrimination may be narrowly limited to that subset of cases.

The other results from Table 2 coincide with past research, in that contestable elections decrease the likelihood of a unanimous decision. Holding all other variables at their means, the likelihood of a unanimous outcome is 10% lower in states where justices are selected through contestable partisan or nonpartisan elections, as compared to states where justices are initially appointed to their positions. Similarly, as the number of justices increases on the court, we find that the likelihood of a unanimous decision decreases. In all cases, increasing the number of justices participating in the case by 1 leads to a 5% drop in the likelihood of a unanimous decision. Across all models, the likelihood of a unanimous decision increases when the lower court's decision is affirmed in full. We would expect this to be the case because there may be fewer points of disagreement for justices when the court is able to adopt the reasoning and perhaps even the language of the lower court's opinion.

### **[Table 2: Gender and unanimity]**

Nearly 30% of the cases in our data were not decided unanimously, so it is worth considering the size of the majority coalition in these cases as a second measure of consensus. The results of a second set of models are presented in Table 3, with the percentage of participating justices in the majority coalition as the dependent variable. These fractional logit models include data from all non-unanimous cases and are again separated by issue area to ensure that the results are consistent.<sup>13</sup>

### **[Table 3: Non-unanimous coalition size]**

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<sup>13</sup> We also ran these models with unanimous decisions included and the results did not change. Only the non-unanimous decisions are used in the models presented in Table 3 because we believe it is a more appropriate approach to test our theoretical expectations.

Unlike the unanimity models, we see clear effects of some of the gender variables on the size of the majority coalition. The majority coalition tends to be larger when a woman is the majority opinion author, a result that holds in the model that includes all cases and two of the issue-specific models. The effect is strongest in employment discrimination cases, where having a woman write the majority opinion increases the percentage of justices joining the coalition by about 5%. Once again, the gender of the chief justice has no effect in these models, suggesting that women chief justices are not associated with creating more agreeable decision-making environments than their male counterparts. In these models, we also consider whether the chief justice's influence is conditional on being part of the majority coalition. The results indicate that this is the case, as one would expect, but the interaction again highlights that this effect is irrespective of the gender of the chief justice.<sup>14</sup>

One of the more surprising results is that the proportion of participating justices who are women has a statistically significant effect on the size of the majority coalition in two of the models, but not in the expected direction: as more women participate in the case, the size of the majority coalition decreases. The effects are, again, the strongest in the employment discrimination model. For these cases, the results show that moving from a court with no women to a court of all women would decrease the size of the coalition by 21%, or about two justices on a seven-justice court.

**[Figure 3: Gender of majority opinion author and the predicted size of the coalition]**

We explore this counterintuitive result further by running separate models by the gender of the majority opinion author. Figure 3 illustrates the most notable difference between these models,

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<sup>14</sup> For example, in considering all cases, when the chief justice is in the majority, the size of the coalition increases by 8%. This would translate to almost adding another justice to the majority on a nine-person court.

the full results of which are available in the appendix. Essentially, the gender diversity of participating justices only exerts a statistically significant effect on the size of the majority coalition when a male justice writes the majority opinion. In Figure 3, comparing the predicted size of the coalition given the percent of women in the majority coalition, we see that, when the majority opinion author is a man, the coalition size decreases significantly as the number of women participating in the case increases. Moving across the observed range of values for this variable, from the lowest to the highest proportion of women justices, we see a decrease of about 7% in the size of the majority coalition for male opinion authors. The smaller decrease shown when a woman is the majority opinion author is not statistically significant.

This result provides some support for the general expectation regarding the gender of the majority opinion author, that women majority opinion authors engender larger coalitions, though the effect we find is subtler and more conditional than we originally hypothesized. Moreover, it suggests that women justices may have a harder time being heard by their male colleagues serving as the opinion authors.

## **Discussion and Conclusion**

The results presented here paint an interesting picture of the effect of gender diversity and women's leadership in state supreme courts, even as they provided limited support for many of our proposed hypotheses. Having a woman chief justice has no effect on the unanimity of the decision or the size of the resulting coalition. We had theorized that a woman leading the court may lead to more consensus amongst the justices, in a way similar to what Boyd (2016) finds with female trial court judges and what Norris and Tankersley (2018) hypothesize about the selection of women chief justices in state supreme courts. Chief justices have some influence in building consensus when they are in the majority coalition for a case, but that influence does not appear to be conditional on the

gender of the chief justice. Of course, there may be other ways that women's leadership as chief justice can affect the judiciary from an administrative perspective, which is worth exploring in future research. It is also possible that expectations of women political leaders, including chief justices, are exaggerated based on stereotypes or perceived gendered differences, rather than reality.

Women majority opinion authors do seem to have an enhanced ability (or willingness) to build consensus, as compared to male majority opinion authors. This is true in the employment discrimination cases that have so frequently been examined by other scholars, as well as in search and seizure cases. The first of these findings follows the literature, suggesting that women's lived experiences may affect their opinion-writing and their decisions to join a majority coalition in cases involving gender, or that men are deferring to women in cases that have more "feminine" characteristics (Ridgeway 2001; Ridgeway and Smith-Lovin 1999). That the effect is also present in criminal justice, an area that is less likely to be considered a "women's issue" than employment discrimination, lends credence to our theory about gender differences and consensus in the opinion-writing process.

Notably, our findings regarding the proportion of participating justices who are women went against our stated hypotheses and revealed subtler effects of gender than we anticipated. We separately examined women and men assigned to write the majority opinion and found that coalitions were predicted to be smaller when more women participated in a case, but only when men wrote the opinion. The implications of this finding are startling when we consider the internal dynamics at play during the opinion-writing process. Perhaps women justices do not feel that their opinions are being incorporated by their male counterparts and are more likely to dissent from them as a result. It is also possible that this result is due to the cases in which men and women are assigned to write the majority opinion, with men assigned to write opinions that are more divisive at the initial discussion stage. Additional research is certainly needed to explore this result further by

examining the gender of separate opinion authors in these circumstances and the types of cases women and men are assigned to write.

Although our focus in this paper was on the variables related to gender diversity and women's leadership, there are a few points worth mentioning related to the other independent variables in the models. First, the results regarding the effects of institutional rules on unanimity, particularly the method of judicial selection, comport with findings in the literature (Brace and Hall 1990; Jaros and Canon 1971; Leonard and Ross 2014). The same cannot be said for the size of the majority coalition, however; none of the institutional variables exert a statistically significant effect on the size of the majority coalition, suggesting that conclusions in the literature about unanimous decisions may not apply more broadly to non-unanimous cases.

Second, the traditional measures of case importance had little relation to the likelihood of a unanimous decision or the size of the majority coalition. The only case factor that was statistically significant across most of the models tested was whether the decision was affirming the lower court in full. In these cases, consensus seems easier for justices to reach. This finding suggests that these are less divisive opinions to write, perhaps because the lower court has done some of the heavy lifting for the state supreme court, allowing justices to conserve their limited resources for dissents to more complicated opinions. Finally, it is worth noting that ideological diversity did not have an effect on the likelihood of a unanimous decision or the size of the majority coalition. Such a result is counterintuitive, though it is in line with previous studies of consensus in state supreme courts (e.g., Leonard and Ross 2014).

None of these results should be taken to minimize the importance of gender diversity in the judiciary. As other scholars have noted (e.g., Kenney 2008, 2013; Malleson 2003), there are reasons to value diversity in the judiciary, regardless of any differences in behavior or outcomes. Most important is that broad, open participation in political institutions is an essential component of a

representative, democratic system (Malleson 2003). Moreover, by increasing diversity with regard to gender and race, the courts become more representative of the population they serve in other ways (Martin and Pyle 2002). As more women have been elected and appointed to seats on state supreme courts, scholars and political observers alike have sought simple explanations of the effect of this diversification of the bench. The findings presented here provide further evidence that understanding gender and judging is anything but simple.

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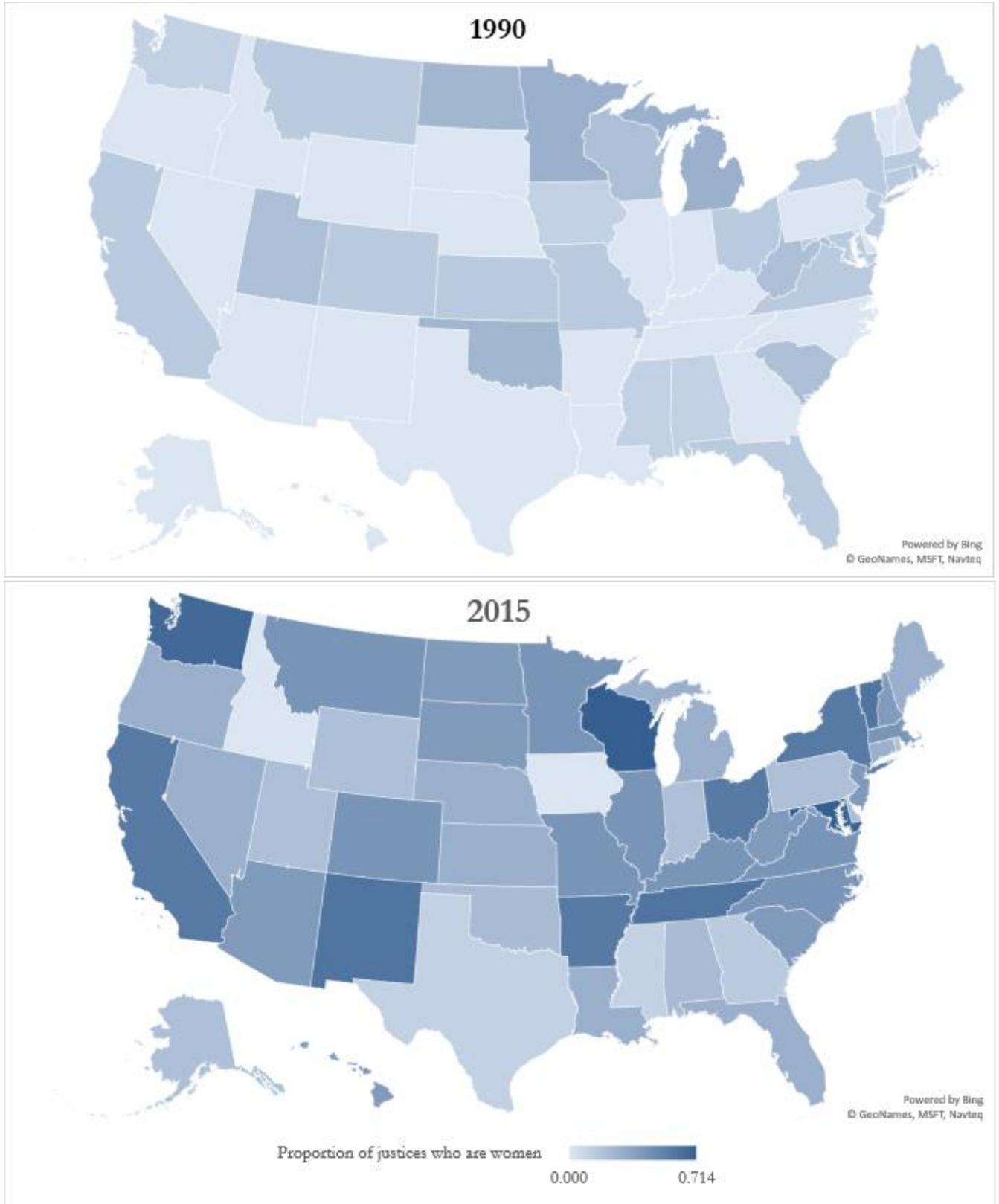
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Figure 1: Proportion of women on states supreme courts



Note: No women served on the criminal appeals court in Oklahoma or Texas in 1990. In 2015, the proportion of women serving on the Oklahoma Court of Criminal Appeals was .400 and on the Texas Court of Criminal Appeals the proportion was .444.



**Table 1: Descriptive Statistics**

	<b>All cases</b>	<b>Employment discrimination</b>	<b>Environmental law</b>	<b>Search and seizure</b>
Number of cases <sup>15</sup>	6,854	847	1,157	4,850
Unanimous decisions	72.16%	69.89%	78.81%	70.95%
Average percent of justices in the majority coalition	91.95%	91.07%	93.88%	91.64%
Average percent of justices in non-unanimous majority coalitions	71.07%	70.34%	70.98%	71.21%
Average percent of participating justices who are women	24.95%	25.92%	25.18%	24.72%
Chief justice is a woman	25.62%	25.95%	29.53%	24.69%
Majority opinion author is a woman	24.23%	27.43%	27.08%	22.99%
Discretionary opinion assignment	35.00%	31.40%	34.14%	35.84%
Cases with at least one amicus brief filed	14.62%	32.23%	30.94%	7.65%
Attorney general or solicitor general participation	56.68%	21.49%	54.02%	63.46%
Constitutional issue	17.01%	15.23%	24.11%	15.63%

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<sup>15</sup> Note that a number of these cases were excluded from the models presented in the other tables due to missing data for one or more of the independent variables. Cases where a temporary or assigned judge wrote the majority opinion were also excluded because these are fundamentally different than opinions written by a regular member of the court who must repeatedly engage with their colleagues in the opinion-writing process.

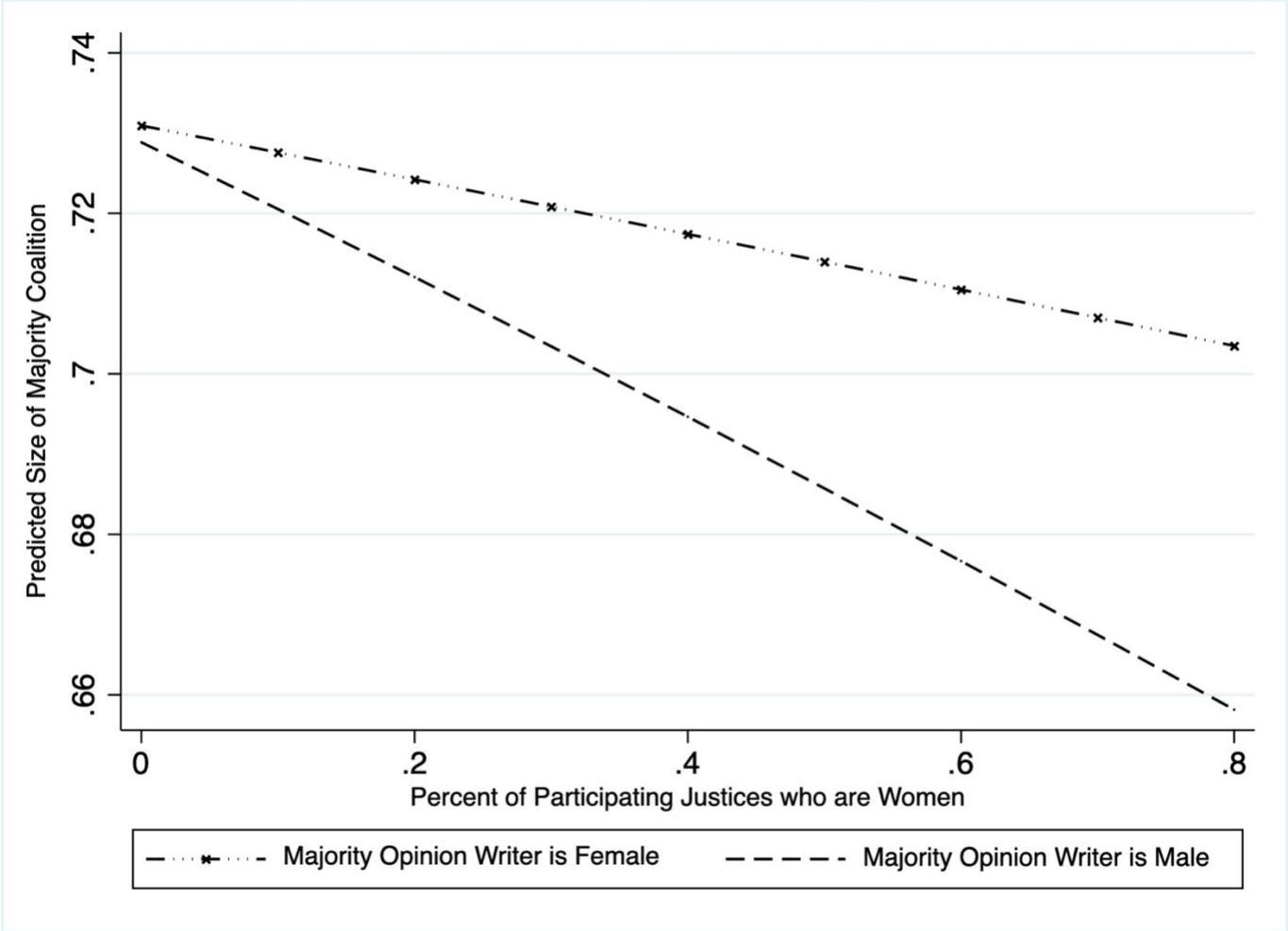
**Table 2: Logistic regression: Likelihood of a unanimous decision across issue areas**

	All cases	Employment discrimination	Environmental law	Search and seizure
<b>Justices participating</b>				
Proportion of participating justices who are women	-0.095 (0.499)	-0.783 (0.924)	-0.471 (0.832)	0.172 (0.532)
Chief justice is a woman	-0.079 (0.144)	0.372 (0.308)	-0.243 (0.241)	-0.184 (0.144)
Majority opinion author is a woman	0.019 (0.081)	0.198 (0.211)	0.111 (0.226)	-0.04 (0.087)
Number of justices participating	-0.258** (0.064)	-0.261* (0.115)	-0.296* (0.087)	-0.238* (0.077)
Ideological diversity of participating justices	-0.002 (0.012)	-0.016 (0.019)	-0.013 (0.018)	0.007 (0.013)
<b>Institutional rules and capacity</b>				
Justices selected through contestable elections	-0.536* (0.257)	-1.084* (0.352)	-0.948* (0.341)	-0.301 (0.291)
Chief or most senior justice assigns the majority opinion	-0.107 (0.27)	-0.416 (0.486)	-0.15 (0.378)	0.001 (0.286)
State has an intermediate appellate court	0.076 (0.252)	0.153 (0.362)	-0.131 (0.51)	0.077 (0.295)
Court professionalism (workload and clerks)	-1.432* (0.647)	-1.332 (1.191)	-0.058 (0.911)	-1.838* (0.724)
<b>Case factors</b>				
Lower court decision affirmed	0.416** (0.103)	0.508* (0.196)	0.28 (0.16)	0.466** (0.109)
Number of amicus briefs filed	-0.05 (0.031)	-0.098 (0.075)	-0.113* (0.056)	0.027 (0.069)
Attorney or Solicitor general participation	-0.067 (0.14)	-0.293 (0.218)	0.047 (0.173)	-0.056 (0.203)
Constitutional issue considered	-0.088 (0.085)	-0.213 (0.35)	-0.513* (0.209)	0.007 (0.112)
Constant	3.511** (0.605)	3.894** (1.045)	4.083** (0.878)	3.226** (0.674)
* p < 0.05; ** p < 0.001 For all models, p > $\chi^2 = 0.000$	n= 6,028 PCC = 71.95%	n= 746 PCC = 71.58%	n= 955 PCC = 78.43%	n= 4,327 PCC = 71.25%

**Table 3: Fractional Logit: Majority coalition size for non-unanimous cases**

	All cases	Employment discrimination	Environmental law	Search and seizure
<b>Justices participating</b>				
Proportion of participating justices who are women	-0.289* (0.123)	-1.023* (0.34)	-0.327 (0.393)	-0.167 (0.135)
Chief justice is a woman	0.021 (0.071)	-0.002 (0.284)	-0.043 (0.149)	0.018 (0.067)
Chief justice is in the majority	0.379** (0.039)	0.399** (0.09)	0.450** (0.137)	0.364** (0.046)
CJ woman* CJ majority	-0.006 (0.068)	0.012 (0.309)	0.057 (0.175)	0.006 (0.064)
Majority opinion author is a woman	0.100* (0.034)	0.249* (0.082)	0.023 (0.137)	0.083* (0.033)
Number of justices participating	0.015 (0.025)	-0.006 (0.04)	0.015 (0.038)	0.019 (0.029)
Ideological diversity of participating justices	0.004 (0.003)	0.006 (0.006)	0.001 (0.009)	0.003 (0.004)
<b>Institutional rules and capacity</b>				
Justices selected through contestable elections	0.079 (0.048)	0.018 (0.109)	0.212 (0.123)	0.06 (0.056)
Chief or most senior justice assigns the majority opinion	-0.051 (0.051)	-0.066 (0.122)	0.192 (0.143)	-0.089 (0.069)
State has an intermediate appellate court	0.062 (0.053)	0.138 (0.128)	-0.229 (0.208)	0.085 (0.072)
Court professionalism (workload and clerks)	0.07 (0.113)	0.156 (0.268)	-0.178 (0.407)	0.139 (0.169)
<b>Case factors</b>				
Lower court decision affirmed	0.083** (0.023)	0.088 (0.078)	-0.023 (0.071)	0.093* (0.027)
Number of amicus briefs filed	-0.01 (0.012)	0.005 (0.019)	0.002 (0.021)	-0.069 (0.043)
Attorney or Solicitor general participation	0.02 (0.045)	0.086 (0.063)	0.001 (0.098)	0.021 (0.073)
Constitutional issue considered	-0.016 (0.036)	0.071 (0.105)	0.049 (0.095)	-0.036 (0.04)
Constant	0.376 (0.175)	0.497 (0.278)	0.651 (0.366)	0.31 (0.196)
* p < 0.05; ** p < 0.001 For all models, p > $\chi^2 = 0.000$	n=1742	n=241	n=220	n=1281

Figure 3: Fractional Logit: Gender of majority opinion author and the predicted size of the coalition



Appendix:

**Table A1: Fractional Logit: Effects on size of majority coalition by gender of majority opinion author<sup>^</sup>**

	Majority opinion author is a woman	Majority opinion author is a man
<b>Justices participating</b>		
Proportion of participating justices who are women	-0.075 (0.288)	-0.305* (0.126)
Chief justice is a woman	0.061 (0.116)	-0.011 (0.071)
Chief justice is in the majority	0.275** (0.065)	0.414** (0.048)
CJ woman* CJ majority	-0.014 (0.146)	0.018 (0.068)
Number of justices participating	0.031 (0.036)	0.008 (0.024)
Ideological diversity of participating justices	0.004 (0.005)	0.003 (0.003)
<b>Institutional rules and capacity</b>		
Justices selected through contestable elections	-0.025 (0.094)	0.114* (0.047)
Chief or most senior justice assigns the majority opinion	0.007 (0.092)	-0.075 (0.056)
State has an intermediate appellate court	-0.048 (0.077)	0.085 (0.066)
Court professionalism (workload and clerks)	0.35 (0.233)	0.01 (0.151)
<b>Case factors</b>		
Lower court decision affirmed	0.016 (0.048)	0.098** (0.027)
Number of amicus briefs filed	0.002 (0.014)	-0.023 (0.016)
Attorney or Solicitor general participation	0.028 (0.071)	0.009 (0.054)
Constitutional issue considered	-0.053 (0.063)	-0.002 (0.04)
Employment law	0.128 (0.124)	-0.044 (0.062)
Search and seizure	0.125 (0.098)	-0.017 (0.063)
Constant	0.232 (0.281)	0.433* (0.186)
* p < 0.05; ** p < 0.001 For all models, p > $\chi^2 = 0.000$	n=439	n=1303

<sup>^</sup>Models used to create Figure 3

**Table A2: Marginal effects for likelihood of a unanimous decision from Table 2**

	<b>All cases</b>	<b>Employment discrimination</b>	<b>Environmental law</b>	<b>Search and seizure</b>
Number of justices participating <sup>+</sup>	-0.051** (0.012)	-0.050* (0.021)	-0.049* (0.015)	-0.048* (0.015)
Justices selected through contestable elections	-0.104* (0.047)	-0.212* (0.067)	-0.159* (0.060)	n.s.
Court professionalism (workload and clerks) <sup>^</sup>	-0.210* (0.094)	n.s.	n.s.	-0.278* (0.096)
Lower court decision affirmed	0.080** (0.018)	0.095* (0.038)	n.s.	0.092** (0.022)
Number of amicus briefs filed <sup>^</sup>	n.s.	n.s.	-0.473* (0.205)	n.s.
Constitutional issue considered	n.s.	n.s.	-0.085* (0.037)	n.s.
<p>Marginal effects calculated holding all variables at their mean. Effects derived from models presented in Table 2.            *p &lt; 0.05; ** p &lt; 0.00            n.s. = not significant            + Increasing the number of justices by 1            ^Across the range of the variable</p>				