Representatives in Name Only: Gender Gaps in Deliberation in State Legislatures

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Abstract

Despite substantial gains in women's descriptive representation in state legislatures, it remains unclear whether numeric presence corresponds to proportional participation in legislative deliberation. Drawing on systematic analysis of speaking time across forty-four committee meetings in six state legislatures during the 2023 session, I demonstrate that women's speaking time increases with their committee representation yet fails to achieve parity even when women constitute a numerical majority. This gap challenges critical mass theory and reveals the persistence of gendered participation patterns beyond the threshold of descriptive representation. Contrary to conventional expectations, I find no evidence that women engage at higher rates on "women's issue" bills, complicating assumptions about gendered policy priorities in committee work. Moreover, while theoretical accounts predict backlash effects under female leadership, men's participation does not increase under female committee chairs. Instead, legislators of both genders speak significantly more when they share the chair's gender, revealing previously unexamined affinity effects in committee deliberation. These findings expose a disconnect between numeric representation and deliberative equality, demonstrating that achieving gender parity in legislative seats constitutes a necessary but insufficient condition for equal voice in policymaking. The implications extend beyond descriptive presence to substantive representation, revealing how persistent deliberative inequalities may constrain female legislators' influence even as their numbers grow.

Even as women have achieved substantial increases in state legislative representation over the past 45 years (Center for American Women and Politics, 2025), equality of voice in legislative deliberation remains elusive. While scholars have argued that women's descriptive representation advances the substantive representation of women's policy interests (Carroll, 2001; Clayton, O'Brien and Piscopo, 2019; Kanter, 1977; Kao et al., 2024), mounting evidence suggests that numerical presence does not automatically translate into proportional participation. Women consistently speak less than their numerical share in group deliberations, achieving parity only when they constitute a supermajority of 60% or more (Karpowitz, Mendelberg and Shaker, 2012; Mendelberg, Karpowitz and Goedert, 2014). This persistent underrepresentation has profound implications: if women's voices remain muted despite their growing numbers, the core theoretical link between descriptive and substantive representation breaks down. The central concern is no longer whether women hold a proportional share of legislative seats, but whether women are able to exercise the deliberative power those seats are presumed to confer. Understanding the gap between numeric presence and deliberative equality is essential for evaluating whether recent representational gains have produced meaningful substantive influence.

Existing research on gender dynamics in legislative committees yields mixed results and faces empirical limitations. Some studies suggest that women participate at rates comparable to men once they reach roughly 40% of committee membership (Funk, Morales and Taylor-Robinson, 2017), while others find little evidence that increased female representation affects participation (Ban et al., 2022). The majority of this research focuses on Congress, where committees rarely exceed the 40% threshold, or on one or two state legislatures, limiting generalizability of the findings. Additional evidence is therefore needed on whether women achieve speaking parity in legislative committees, particularly when female representation exceeds national averages.

This study addresses these gaps by examining speaking patterns across forty-four committee meetings in six state legislatures during the 2023 session. I use publicly available

video recordings to measure speaking time and track changes in committee composition as legislators enter and exit hearings. Variation across the selected states in female representation, partisan control, and legislative professionalism enables observation of diverse committee compositions.

I find that although women's speaking time rises with their numeric representation, they never reach parity, even in gender-balanced or female-majority committees. The increase in speaking time relative to committee share is modest, and at nearly every level of female representation, women speak below parity, challenging predictions from critical mass theory. Furthermore, I find no evidence that women speak more on women's issue bills, despite their tendency to prioritize such policies, nor is there evidence of backlash effects in which men increase participation under female chairs. Instead, legislators of both genders speak more when they share the committee chair's gender, consistent with dynamics of gender-based affinity. These results suggest that increased descriptive representation alone does not ensure equal voice in legislative deliberation, with persistent inequalities continuing to restrict women's substantive impact.

Women and Legislative Representation

Historically, women are underrepresented in politics, with persistent disparities in legislative institutions (Lawless, 2015; Sanbonmatsu, 2020). Although women have reached or even surpassed parity in a few state legislatures and have made substantial gains nationally, they remain underrepresented across American legislatures overall (Center for American Women and Politics, 2025). Such underrepresentation matters because greater descriptive representation can advance women's interests by elevating previously overlooked policy priorities and strengthening women's influence in decision making (Mansbridge, 1999; Pitkin, 1967). Greater female representation also reduces women's marginalization within legislatures, enhancing their capacity to affect the policy agenda and collaborate to advance

shared priorities (Kanter, 1977; Mendelberg, Karpowitz and Goedert, 2014; Mendelberg and Karpowitz, 2016; Schwindt-Bayer and Mishler, 2005). When women are in a minority, they are also less likely to be perceived as influential and hold less authority within group discussions (Karpowitz, Mendelberg and Shaker, 2012; Karpowitz and Mendelberg, 2014; Mendelberg, Karpowitz and Oliphant, 2014). Nevertheless, research also suggests women do not always need to reach a high numerical threshold to overcome marginalization and be effective lawmakers (Bratton, 2005; Sarah and Mona, 2008).

Even when increased descriptive representation is achieved, it does not automatically translate into substantive representation, which reflects the actual promotion and implementation of women's policy preferences (Karpowitz and Mendelberg, 2014). It is therefore important to examine whether women's recent numerical gains in legislatures have produced substantive influence, as men and women often differ in policy priorities (Carroll, 2001; Huddy, Cassese and Lizotte, 2008). Female legislators are more likely to support and sponsor women's issue bills regardless of party affiliation (Bratton, 2005; Carroll, 2001; MacDonald and O'Brien, 2011; Swers, 1998, 2002; Volden, Wiseman and Wittmer, 2018; but see Osborn, 2012). They also tend to emphasize these issues during floor debates (Bäck and Debus, 2019). Women also differ from men in their positions on social welfare, race, and use of force (Huddy, Cassese and Lizotte, 2008; but see Swers, 2008). However, these differences in policy preferences are not observed across all issues or consistent among all legislators (Reingold, 2000).

Increased female representation can enable women to more effectively raise the issues that matter to them in legislative settings (Devlin and Elgie, 2008). However, numerical gains alone are insufficient; substantive representation requires that female legislators actively advocate for their constituents and convert descriptive presence into tangible policy outcomes (McGrath, Ryan and Wrighten, 2025).

In legislatures, substantive representation often takes the form of speech, a key mode of political engagement that influences policy outcomes and group decision making (Karpowitz

and Mendelberg, 2014). Because women are frequently underrepresented in legislatures and do not always speak proportionate to their numbers, their numerical gains may not automatically translate into policy influence (Lawless, 2015; Karpowitz and Mendelberg, 2014; Sanbonmatsu, 2020). Assessing whether women have a proportional voice in legislative deliberations is therefore critical for understanding the extent of their substantive representation.

Institutional context mediates how and when women's numerical presence translates into speaking participation (Karpowitz and Mendelberg, 2014). Floor speech differs from participation in smaller settings such as committees, since each operates under distinct rules and norms. Studying committees is particularly important because they are central to policymaking and often act as gatekeepers, controlling which bills advance to the floor (Berry and Fowler, 2018; Cox and McCubbins, 2007; Francis and Riddlesperger, 1982; Gaines et al., 2019). Committees also foster more robust deliberation than floor debates due to their smaller scale (Gaines et al., 2019). Moreover, because committee meetings generally impose fewer restrictions and allow any legislator to participate, they provide a particularly useful setting for analyzing legislative speech (Ban et al., 2022).

More broadly, research on small group deliberation shows that women contribute less than their proportional share unless the group consists of a supermajority of women (Karpowitz, Mendelberg and Shaker, 2012; Karpowitz and Mendelberg, 2014; Mendelberg, Karpowitz and Goedert, 2014). Similar patterns appear in local politics, with women comprising nearly half of participants but contributing just over a quarter of verbal contributions (Bryan, 2010). This prior work on simulated deliberation and local politics raises the question of how these patterns manifest in legislative committees, where deliberation directly shapes policy outcomes. Research, primarily at the national level, examines gender inequality in committee deliberations and yields mixed findings. Women appear to participate at rates comparable to men in committees, particularly when committees are composed of at least 40% women (Funk, Morales and Taylor-Robinson, 2017). However, other studies find limited

evidence that increased female representation significantly affects participation in committee hearings (Ban et al., 2022).

Theory

Backlash theory provides one explanation for these patterns, positing that historically dominant groups may react negatively when their power is challenged by minority groups (Mansbridge and Shames, 2008). Consistent with this theory, increases in the proportion of women in legislatures have been associated with greater verbal aggression and controlling behavior by male legislators during committee hearings (Kathlene, 1994). Female legislators may also face declining cooperation as their descriptive representation grows (Kanthak and Krause, 2010; Rosenthal, 2000). Similarly, as women's numbers increase, they are interrupted more frequently, particularly when discussing women's issues (Miller and Sutherland, 2023). However, other research suggests that higher proportions of female legislators can reduce interruptions and encourage greater engagement from their male colleagues, demonstrating that these effects are not consistent across the literature (Ban et al., 2022).

In contrast to backlash theory, women in leadership positions may encourage greater female participation by fostering gender-based affinity. In non-legislative collaborative groups, female leadership substantially increases women's influence, even in male-majority settings (Karpowitz and Mendelberg, 2014; Karpowitz et al., 2024). Similarly, in legislative contexts, female leadership substantially increases the participation rate of their female peers (Blumenau, 2021).

Together, these mixed results highlight the complexity of gender dynamics in legislative committees and the inconclusive nature of existing evidence on gendered deliberation. Prior research is constrained by important limitations, as most studies focus on the national level and rarely observe committees with more than 40% female membership—a threshold associated with critical mass effects, beyond which women's participation tends to increase (Kanter, 1977; Kanthak and Krause, 2010). State legislatures, by contrast, exhibit greater

variation in female representation, allowing for observation of a broader distribution of committee gender compositions. However, existing state-level studies examine only one or two state legislatures, limiting generalizability. I extend this scholarship by examining whether women's committee participation responds to variation in female representation across a broader range of state legislative committee settings, including meetings with higher levels of female representation than typically observed in Congress:

H1: Women will participate more as the proportion of women in the committee increases.

This hypothesis is grounded in empirical evidence showing that higher levels of female representation reduce marginalization and enhance women's participation (Karpowitz, Mendelberg and Shaker, 2012; Mendelberg, Karpowitz and Goedert, 2014). Some research on legislative committees suggests that women speak more frequently when they approach critical masses, such as 40% of the group, further supporting the expectation that participation rises with greater female representation (Funk, Morales and Taylor-Robinson, 2017).

Building on the expectation that women's participation increases with greater female representation, I also consider how other committee dynamics shape gendered deliberation. Specifically, I examine if the issue under discussion and the presence of female leadership influence women's speaking behavior.

H2: Women will participate more when the topic being discussed concerns women's issues, regardless of the gender composition in the legislative committee.

This hypothesis is informed by evidence that female legislators are more likely to support and sponsor women's issue legislation (Bratton, 2005; Swers, 1998, 2002; Volden, Wiseman and Wittmer, 2018). Presumably, women sponsor these bills because these issues align with their priorities. Accordingly, I expect that women will speak more frequently during committee discussions on women's issues.

H3: Male legislators will participate more when the committee chair is a woman, regardless of the committee's overall gender composition.

This hypothesis reflects two competing mechanisms. Backlash theory predicts that men may respond to women in leadership by increasing participation and asserting control, particularly when women challenge historically dominant roles (Mansbridge and Shames, 2008). In contrast, gender affinity effects suggest that female chairs could encourage greater female participation by creating an environment where women feel more comfortable engaging in deliberation (Blumenau, 2021). Given the historical male dominance of these institutions and leadership positions, I expect backlash effects will be stronger, with male legislators increasing their participation to reassert control when women occupy leadership positions.

Data and Methods

To assess the relationship between female committee representation and participation, I conducted a quantitative observational study of legislative committee meetings across six state legislatures during the 2023 general legislative session. I selected 2023 because it is the most recently completed legislative session across all fifty states. That year also exhibited historically high variation in committee gender compositions, as only recently have any states achieved gender parity or had majority-women chambers (Center for American Women and Politics, 2025).

The selected states—Nevada, California, Minnesota, Texas, North Dakota, and Tennessee—were chosen to maximize variation in committee gender composition, partisan control, and legislative professionalism. In terms of female representation, they rank 1st, 11th, 17th, 33rd, 41st, and 47th, respectively (Center for American Women and Politics, 2025)[1]. The sample also maintains a partisan balance, with three states controlled by Democrats (Nevada, California, and Minnesota) and three by Republicans (Texas, North Dakota, and Tennessee). The states also span a range of legislative professionalism, varying

[1]The original aim was to select states representing every 10th ranking; to increase variation in partisan control and legislative professionalism, the final selection deviated slightly from this scheme.

from highly professionalized (California, ranked 1st) to largely citizen legislatures (North Dakota, ranked 48th) (Squire, 2024).

In each state, I randomly selected four committee meetings from each chamber for the 2023 session[2]. This resulted in a total of forty-four committee meetings for analysis[3]. This sampling procedure mirrors prior studies, balancing breadth and feasibility while still allowing for robust analysis (Kathlene, 1994). The sample captures variation across committee types and gender composition, with detailed distributions presented in Figures A1-A4 in the Supplementary Materials.

The dependent variable, female legislators' speaking time in committee meetings, was measured using publicly available video recordings from each state's legislative website. While speaking time cannot capture all aspects of legislative influence, it provides an important measure of participation through vocal presence.[4] For each recording, I created an observation for each speaking event, recording the speaker's identity and precise start and end timestamps. Start and end times were then used to calculate durations in seconds, and these utterance-level observations were subsequently aggregated for analysis. In recordings where side conversations were audible, I included only utterances delivered with the speaker's microphone on and clearly directed to the committee.

I account for the number of women present on a committee at the time of each bill's debate, since this is expected to directly influence a woman's likelihood of speaking (Karpowitz, Mendelberg and Shaker, 2012; Karpowitz and Mendelberg, 2014; Mendelberg, Karpowitz and Goedert, 2014). These data were obtained from legislative roll calls at the start of meetings and updated when votes occurred or attendance changed on video. Incorporating these counts allows for a more precise analysis of how participation responds to the contemporaneous gender composition of the committee.

I identified legislators' gender by matching names in the speaking records to the Center

[2]I excluded subcommittees and joint meetings from my analyses to focus on standard committee deliberation where member participation is most comparable.

[3]Due to archival limitations in Tennessee, only House meetings were available.

[4]For an alternative measure, the number of speaking turns, see Supplementary Materials, Table A4.

for American Women and Politics data, manually resolving ambiguous cases (2025). I also control for whether the speaker was the bill sponsor or committee chair, since legislators in these roles are expected to speak more[5]. Sponsorship and chair information were recorded during coding and linked to each individual speaking event.

Bills were also classified based on whether they pertain to women's issues. Because women are more likely to support such legislation, they may also be more likely to speak on these bills regardless of the number of men in a committee meeting (Swers, 1998, 2002). Although scholars debate the precise definition of "women's issues", I follow Swers' classification, including healthcare, K-12 education, abortion, minors, abuse, and anti-discrimination legislation (Swers, 1998, 2002).

I control for legislative professionalism, which may impact legislators' investment in committees as well as their interaction and conflict resolution styles (McGrath, Ryan and Wrighten, 2025; Rosenthal, 2000). I measure professionalism using logged legislative operating expenditures per member, a continuous measure that avoids benchmarking against the U.S. House and offers more precise data for the study period (Brown and Mitchell, 2025)[6]. I also control for party affiliation, which—in conjunction with the state legislature's majority party—may influence speaking time. I obtained party affiliation information from each state's legislative website. Additionally, I account for years of legislative experience, since more senior members may behave differently than newcomers when deciding whether to speak.

Across the forty-four committees, I initially coded 10,703 speaking turns. I excluded non-legislator contributions (e.g., from witnesses, public commenters, or appointees) to focus on member participation. I also removed speaking turns of one second or less to remove roll-call votes and very brief acknowledgments that do not constitute deliberative contributions[7]. After these exclusions, 5,030 observations remain. Because the hypotheses

[5]This includes legislators presenting bills they did not sponsor or presenting sponsored amendments, though these cases are less than 1% of observations.

[6]Results using the Squire measure are statistically and substantively similar. See Table A9 for comparison.

[7]This threshold is imperfect. See Supplementary Materials Table A6 for an analysis using a zero-second

focus on gendered participation, it is necessary to compare contributions in a deliberative context. Accordingly, I aggregate utterance-level observations to the bill-hearing level by summing speaking seconds by legislator for each bill hearing. This aggregation produced 1,023 bill-legislator observations for the primary analyses, preserving variation in issue type and bill-level controls. I also excluded all instances where committees were composed entirely of one gender, as these extreme cases do not allow for meaningful comparison of gendered participation. This left 989 observations for the primary analyses.

Results

To evaluate H1, which predicts that women participate more as their proportion on the committee increases, I begin with a bill-level descriptive analysis comparing each committee's gender composition to women's share of speaking time. Participation is expressed as a ratio to standardize across committees of varying sizes. Speaking parity is defined as zero when women's share of speaking time equals their share on the committee. Values below zero indicate that men spoke more, while values above zero indicate greater female participation. Figure 1 presents the results of this initial analysis.

The scatterplot shows a modest upward trend: as committees become more female, women's speaking time approaches parity. However, even in gender-balanced or female-majority committees, women rarely exceed full parity, indicating that numerical representation alone may be insufficient to guarantee proportional participation. This finding contrasts with prior research suggesting that women reach or exceed speaking parity once they constitute a critical mass of 40-60% of a group (Funk, Morales and Taylor-Robinson, 2017; Karpowitz and Mendelberg, 2014), suggesting that legislative contexts may present unique constraints to equal participation.

To test this relationship more rigorously while accounting for potential confounds, I estimate OLS regression at the bill level. The models control for speaker gender, committee

cutoff to retain brief verbal response while still excluding clear roll-call responses.

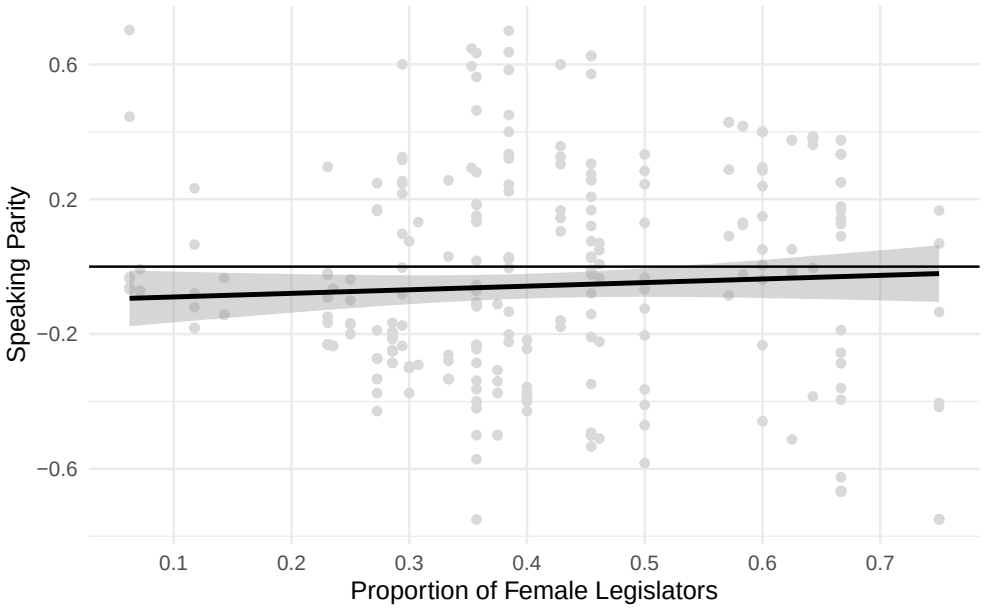

Figure 1: Speaking Parity by Committee Gender Composition

chair status, bill sponsorship, party affiliation, legislative experience, committee gender composition, whether the speaker shares the chair's gender, whether the bill addresses women's issues, and legislative professionalism. Figure 2 presents coefficient estimates with 95% confidence intervals, and Table A2 in the Supplementary Materials provides complete regression output.

As expected, committee chairs and bill sponsors speak significantly more than rank-and-file members, with chairs speaking approximately 38% more (95% CI: [34.3%, 41.7%]) and sponsors 35.5% more (95% CI: [31.4%, 39.6%]). These findings align with theoretical and institutional expectations, as it is reasonable that committee chairs and bill sponsors speak more given their responsibilities in managing meetings and presenting legislation, both of which necessitate additional speaking time. Legislative professionalism is positively associated with speaking time, with a one unit increase in logged legislative operating expenditures corresponding to a 3.1% increase in speaking time (95% CI: [1.8%, 4.4%]). This finding is consistent with the expectation that more professionalized legislatures foster greater substantive engagement (McGrath, Ryan and Wrighten, 2025). Republican

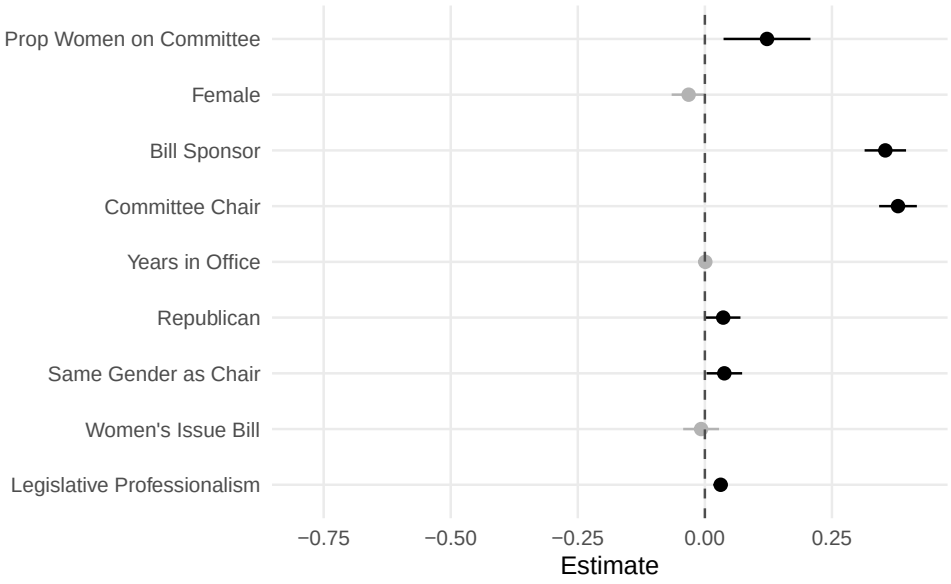

Figure 2: Determinants of Legislative Speaking Time
Bars represent 95% confidence intervals. Black lines indicate statistical significance at $p < 0.05$.
Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

legislators speak 3.6% more than their Democratic counterparts (95% CI: [0.2%, 7%]), though the mechanism driving this partisan difference remains unclear.

Turning to the key test of H1, committee gender composition has a statistically significant effect on women's participation after accounting for controls. A 10% increase in the proportion of women on the committee is associated with a 1.2% increase in women's total share of speaking time (95% CI: [0.4%, 2.1%]). While this effect is statistically significant and in the hypothesized direction, its substantive magnitude is modest, suggesting that numerical gains encourage female participation but do not produce large shifts on their own. Nevertheless, it provides evidence that increasing female representation enhances women's participation. I therefore reject the null hypothesis for H1.

Regarding H2, I find no statistically significant effect of women's issue bills on women's participation. The coefficient is substantively small and statistically indistinguishable from zero. This null finding suggests that, although female legislators sponsor or support

women's issues at higher rates (Swers, 1998, 2002; Volden, Wiseman and Wittmer, 2018), policy affinity does not necessarily translate into greater speaking time in committee hearings. Several explanations are plausible. Female legislators may engage in strategic behavior, avoiding stereotypical "women's issues" to prevent reinforcing gendered stereotypes of triggering backlash. The measurement of women's issue also relies on Swers' 1990s classification, which has been the subject of scholarly debate and may not capture the full range of contemporary issues salient to women. Additionally, women's issue bills may be more contested, provoking greater male participation that offsets increases in female speaking time. Finally, because women's issue bills constitute only 25% of the sample, the analysis may be underpowered to detect an effect. Consequently, I cannot reject the null hypothesis for H2.

Legislators sharing the committee chair's gender speak 3.8% more than legislators of the opposite gender (95% CI: [0.3%, 7.3%]). This pattern is consistent with gender-based affinity, whereby shared gender between the chair and members encourages greater participation (Blumenau, 2021; Karpowitz and Mendelberg, 2014). To evaluate the alternative expectation suggested by backlash theory, I next replace the same-gender-as-chair variable with a binary indicator for whether the committee chair is male or female, holding all other controls constant. Figure 3 (Table A3 in the Supplementary Materials) presents the results.

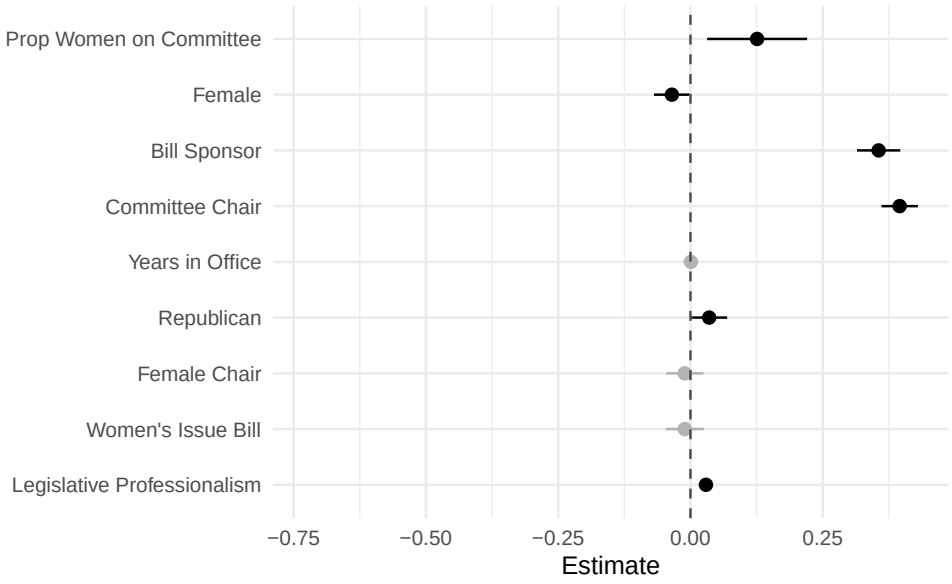

Figure 3: Determinants of Legislative Speaking Time, Controlling for Chair Gender
Bars represent 95% confidence intervals. Black lines indicate statistical significance at $p < 0.05$.
Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

The coefficient on female chair is small and statistically insignificant, providing no evidence of a backlash effect in state legislative committees. This null finding does not rule out more subtle compensatory behaviors, such as interruptions or tone, which are not captured by aggregate speaking time. Nevertheless, in this dimension of participation, men do not appear to compensate for female leadership by monopolizing discussion. Combined with the earlier finding that legislators speak more when they share the chair's gender, the evidence instead supports gender-based affinity rather than backlash. Accordingly, I cannot reject the null hypothesis for H3.

Having tested all three hypotheses, only H1 receives empirical support. A key remaining question is whether women ever achieve speaking parity as their representation increases. The descriptive analysis in Figure 1 suggests they do not. To examine this more formally, I use the regression model to generate predicted speaking proportions, holding all other variables at their means or reference categories. Figure 4 plots these predictions.

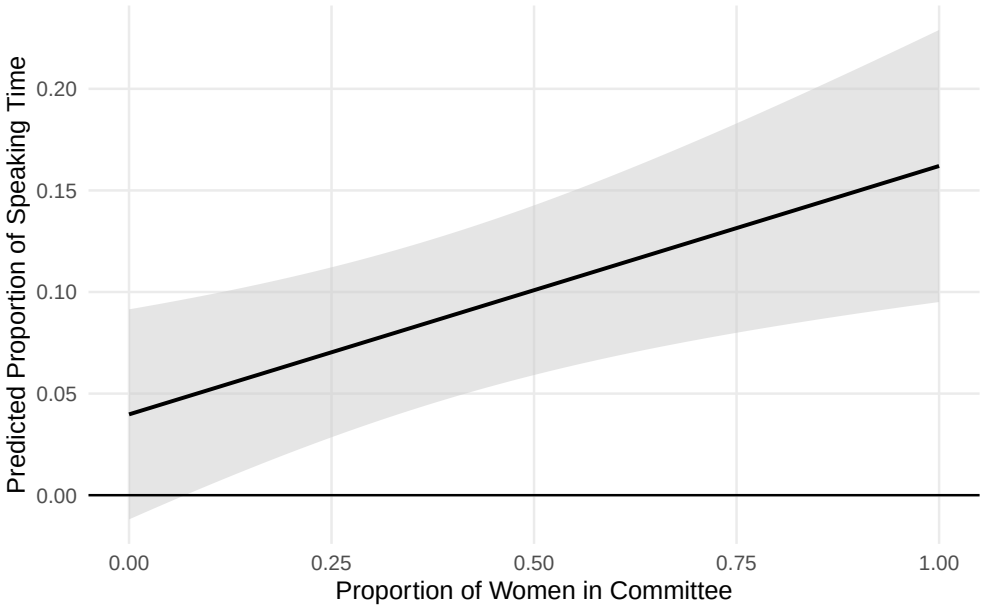

Figure 4: Predicted Speaking Parity by Committee Gender Composition
Shaded area represents 95% confidence intervals.
Base categories: male legislator, not a bill sponsor, not a committee chair, Democrat, opposite gender from chair, not a women's issue bill

Women speak well below parity across nearly the full range of committee gender compositions. Even in committees where women comprise 40-60% of members—levels where prior research suggests women may reach parity (Kanter, 1977; Karpowitz and Mendelberg, 2014)—their predicted speaking share remains substantially below numeric representation. This persistent gap suggests that overall low participation among women depresses their aggregate speaking share, even in relatively gender-balanced committees.

Conclusion

I find that women's share of speaking time increases as the proportion of women on a committee grows, extending prior evidence that women are more likely to speak up as their representation rises (Funk, Morales and Taylor-Robinson, 2017; Karpowitz and Mendelberg, 2014). However, the effect is modest, with a 10% increase in women's committee representation corresponding to only a 1.22% increase in their speaking share. Notably,

women fail to achieve speaking parity in gender-balanced or female-majority committees. Across nearly the entire observed distribution of committee compositions, women speak substantially less than their numeric presence would predict.

Women have made historic gains in descriptive representation in state legislatures (Center for American Women and Politics, 2025), but these numeric increases have not translated into proportional contributions in committee deliberations. Similar patterns are observed in other political contexts: despite rising numbers, women continue to face constraints in voice and authority (Lovenduski, 2005). Institutional context, party culture, and entrenched gender norms limit women's participation even as their representation grows (Lovenduski, 2005). The persistence of this gap poses a challenge for balanced representation and raises fundamental questions about the conditions under which descriptive representation produces substantive equality.

Further, I find no evidence that women speak significantly more on women's issue bills. Although prior research shows that female legislators support and sponsor more policies related to women's issues (Bratton, 2005; Swers, 1998, 2002; Volden, Wiseman and Wittmer, 2018), this policy alignment does not appear to translate into greater vocal participation during committee hearings on these topics. Similarly, I find no evidence for the hypothesis that men increase their participation when women chair committee meetings. Instead, the significant positive effect of sharing the chair's gender points to gender-based affinity, whereby legislators speak more when they share the chair's gender (Blumenau, 2021). These results point to a modest role for leadership. Female committee chairs slightly increase participation among other women, suggesting that diversifying committee leadership may contribute to enhancing women's engagement, even if the overall effect is limited.

There are several important limitations to consider. First, the sample includes only forty-four committee meetings, limiting both statistical power and generalizability. Although the sample spans six states with substantial variation in gender composition, partisan control, and legislative professionalism, including additional committee meetings or states would

further strengthen the robustness of the analysis. In addition, as shown in Figure A3, the distribution of bill types in the sample is not uniform, and committees with heavier women's issue workloads may be represented at rates that differ from their prevalence in the broader universe of hearings. Because women are disproportionately represented on committees that hear a higher share of women's issue bills (Payson, Fouirnaies and Hall, 2023), future research should aim for more balanced representation across committee types. Furthermore, committee room attendance fluctuates during hearings. While I tracked attendance periodically, more systematic real-time monitoring could reveal if participation responds to momentary changes in committee gender composition.

Moreover, this study measures speaking time, which is an imperfect proxy for deliberative participation. Treating all speech as equivalent overlooks variation in substance and influence: brief statements may carry more weight than lengthy ones and some legislators may communicate more efficiently than others. Further research should therefore examine not only how much legislators speak, but also what they say.

Additionally, future research should more carefully define and measure who counts as present in committee rooms. During meetings, committee members, other legislators presenting bills, bill witnesses, citizens offering testimony, and legislative staff may all be present. Different groups likely influence participation dynamics in different ways, with some affecting legislators' speaking behavior more than others. Examining multiple dimensions of who is in the room would clarify the conditions under which gender composition shapes participation.

Finally, although the proportion of women on a committee is significantly correlated with women's share of speaking time, the mechanisms driving this relationship remain unclear. Future research should examine whether increases in speaking time reflect longer individual turns, greater likelihood of participation, fewer interruptions, or differential allocation of time by the chair. Collecting additional detailed data on interruptions and chair behavior would help disentangle these dynamics and clarify how committee composition shapes

gendered participation. In addition, while this project has primarily focused on substantive representation in the form of speech, future research should also examine the outcomes of this speech. In particular, studies could trace how gendered deliberation patterns affect downstream outcomes such as bill passage rates and amendment content. Such analyses would clarify whether participation gaps translate into meaningful differences in policy outcomes.

References

Bäck, Hanna and Marc Debus. 2019. "When do women speak? A comparative analysis of the role of gender in legislative debates." *Political Studies* 67(3):576–596.

Ban, Pamela, Justin Grimmer, Jaclyn Kaslovsky, Emily West et al. 2022. "How does the rising number of women in the US Congress change deliberation? Evidence from House Committee Hearings." *Quarterly Journal of Political Science* 17(3):355–387.

Berry, Christopher R and Anthony Fowler. 2018. "Congressional committees, legislative influence, and the hegemony of chairs." *Journal of Public Economics* 158:1–11.

Blumenau, Jack. 2021. "The effects of female leadership on women's voice in political debate." *British Journal of Political Science* 51(2):750–771.

Bratton, Kathleen A. 2005. "Critical mass theory revisited: The behavior and success of token women in state legislatures." *Politics & Gender* 1(1):97–125.

Brown, Adam R and Ellie M Mitchell. 2025. "Comparing three measures of legislative professionalism." *State Politics & Policy Quarterly* 25(1):119–131.

Bryan, Frank M. 2010. *Real democracy: The New England town meeting and how it works*. University of Chicago Press.

Carroll, Susan J. 2001. *The impact of women in public office*. Indiana University Press.

Center for American Women and Politics. 2025. "Women in State Legislatures 2024." https://cawp.rutgers.edu/facts/levels-office/state-legislature/women-state-legislatures-2024. Accessed February 21, 2025.

Clayton, Amanda, Diana Z O'Brien and Jennifer M Piscopo. 2019. "All male panels? Representation and democratic legitimacy." *American Journal of Political Science* 63(1):113–129.

Cox, Gary W and Mathew D McCubbins. 2007. *Legislative leviathan: Party government in the House*. Cambridge University Press.

Devlin, Claire and Robert Elgie. 2008. "The effect of increased women's representation in parliament: The case of Rwanda." *Parliamentary Affairs* 61(2):237–254.

Francis, Wayne L and James W Riddlesperger. 1982. "US state legislative committees: Structure, procedural efficiency, and party control." *Legislative Studies Quarterly* pp. 453–471.

Funk, Kendall D, Laura Morales and Michelle M Taylor-Robinson. 2017. "The impact of committee composition and agendas on women's participation: Evidence from a legislature with near numerical equality." *Politics & Gender* 13(2):253–275.

Gaines, Brian J, Mark Goodwin, Stephen Holden Bates and Gisela Sin. 2019. "The study of legislative committees.".

Huddy, Leonie, Erin Cassese and Mary-Kate Lizotte. 2008. "Gender, public opinion, and political reasoning." *Political women and American democracy* pp. 31–49.

Kanter, Rosabeth Moss. 1977. "Some effects of proportions on group life: Skewed sex ratios and responses to token women." *American journal of Sociology* 82(5):965–990.

Kanthak, Kristin and George A Krause. 2010. "Valuing diversity in political organizations: Gender and token minorities in the US House of Representatives." *American Journal of Political Science* 54(4):839–854.

Kao, Kristen, Ellen Lust, Marwa Shalaby and Chagai M Weiss. 2024. "Female representation and legitimacy: Evidence from a harmonized experiment in Jordan, Morocco, and Tunisia." *American Political Science Review* 118(1):495–503.

Karpowitz, Christopher F, Stephen D O'Connell, Jessica Preece and Olga Stoddard. 2024.

"Strength in numbers? gender composition, leadership, and women's influence in teams." *Journal of Political Economy* 132(9):3077–3114.

Karpowitz, Christopher F and Tali Mendelberg. 2014. *The silent sex: Gender, deliberation, and institutions*. Princeton University Press.

Karpowitz, Christopher F, Tali Mendelberg and Lee Shaker. 2012. "Gender inequality in deliberative participation." *American Political Science Review* 106(3):533–547.

Kathlene, Lyn. 1994. "Power and influence in state legislative policymaking: The interaction of gender and position in committee hearing debates." *American Political Science Review* 88(3):560–576.

Lawless, Jennifer L. 2015. "Female candidates and legislators." *Annual Review of Political Science* 18(1):349–366.

Lovenduski, Joni. 2005. *Feminizing politics*. Polity.

MacDonald, Jason A and Erin E O'Brien. 2011. "Quasi-experimental design, constituency, and advancing women's interests: Reexamining the influence of gender on substantive representation." *Political Research Quarterly* 64(2):472–486.

Mansbridge, Jane. 1999. "Should blacks represent blacks and women represent women? A contingent" yes"." *The Journal of politics* 61(3):628–657.

Mansbridge, Jane and Shauna L Shames. 2008. "Toward a theory of backlash: Dynamic resistance and the central role of power." *Politics & Gender* 4(4):623–634.

McGrath, Robert J, Josh Ryan and Jatia Wrighten. 2025. "High Hurdles: Legislative Professionalism and the Effectiveness of Women State Legislators." *The Journal of Politics* .

Mendelberg, Tali and Christopher F Karpowitz. 2016. "Women's authority in political decision-making groups." *The Leadership Quarterly* 27(3):487–503.

Mendelberg, Tali, Christopher F Karpowitz and J Baxter Oliphant. 2014. "Gender inequality in deliberation: Unpacking the black box of interaction." *Perspectives on Politics* 12(1):18–44.

Mendelberg, Tali, Christopher F Karpowitz and Nicholas Goedert. 2014. "Does descriptive representation facilitate women's distinctive voice? How gender composition and decision rules affect deliberation." *American journal of political science* 58(2):291–306.

Miller, Michael G and Joseph L Sutherland. 2023. "The effect of gender on interruptions at congressional hearings." *American Political Science Review* 117(1):103–121.

Osborn, Tracy L. 2012. *How women represent women: Political parties, gender and representation in the state legislatures*. Oxford University Press.

Payson, Julia, Alexander Fouirnaies and Andrew B Hall. 2023. "Decomposing the source of the gender gap in legislative committee service: evidence from US states." *Political Science Research and Methods* 11(1):191–197.

Pitkin, Hanna Fenichel. 1967. "The concept of representation.".

Reingold, Beth. 2000. *Representing women: Sex, gender, and legislative behavior in Arizona and California*. Univ of North Carolina Press.

Rosenthal, Cindy Simon. 2000. "Gender styles in state legislative committees: Raising their voices in resolving conflict." *Women & Politics* 21(2):21–45.

Sanbonmatsu, Kira. 2020. "Women's Underrepresentation in the US Congress." *Daedalus* 149(1):40–55.

Sarah, Childs and Lena Krook Mona. 2008. "Critical mass theory and women's political representation." *Political studies* 56(3):725–736.

Schwindt-Bayer, Leslie A and William Mishler. 2005. "An integrated model of women's representation." *The Journal of politics* 67(2):407–428.

Squire, Peverill. 2024. "A Squire index update: Stability and change in legislative professionalization, 1979–2021." *State Politics & Policy Quarterly* 24(1):110–119.

Swers, Michele L. 1998. "Are women more likely to vote for women's issue bills than their male colleagues?" *Legislative Studies Quarterly* pp. 435–448.

Swers, Michele L. 2002. *The difference women make: The policy impact of women in Congress*. University of Chicago Press.

Swers, Michele L. 2008. "Policy Leadership Beyond'Women's Issues.'." *Legislative women: Getting elected, getting ahead* pp. 117–134.

Volden, Craig, Alan E Wiseman and Dana E Wittmer. 2018. "Women's issues and their fates in the US congress." *Political Science Research and Methods* 6(4):679–696.

Supplementary Materials

Table of Contents

Descriptive Statistics

Observations by State Table A1 reports the number of bill-level observations by state. California contributes the largest share of observations, followed by North Dakota. Distribution is uneven across states, likely reflecting underlying differences in committee meeting length, as committees were randomly selected and varied substantially in duration. This unevenness represents a limitation of the dataset.

State	Count	Proportion
CA	248	0.25
MN	177	0.18
ND	209	0.21
NV	129	0.13
TN	117	0.12
TX	109	0.11

Table A1: Number of Bill-Legislator Observations, by State

Committee Statistics Committee meetings in the sample occurred between January 5th, 2023 and June 13th, 2023. Figure A1 depicts the distribution of committee types at the committee level while Figure A2 displays the distribution of committees types at the bill level. Figure A3 shows the distribution of committee types at the bill-legislator level. Some committee types are overrepresented relative to others, which may introduce some bias into the analysis—I recognize this as a limitation of the sampling process.

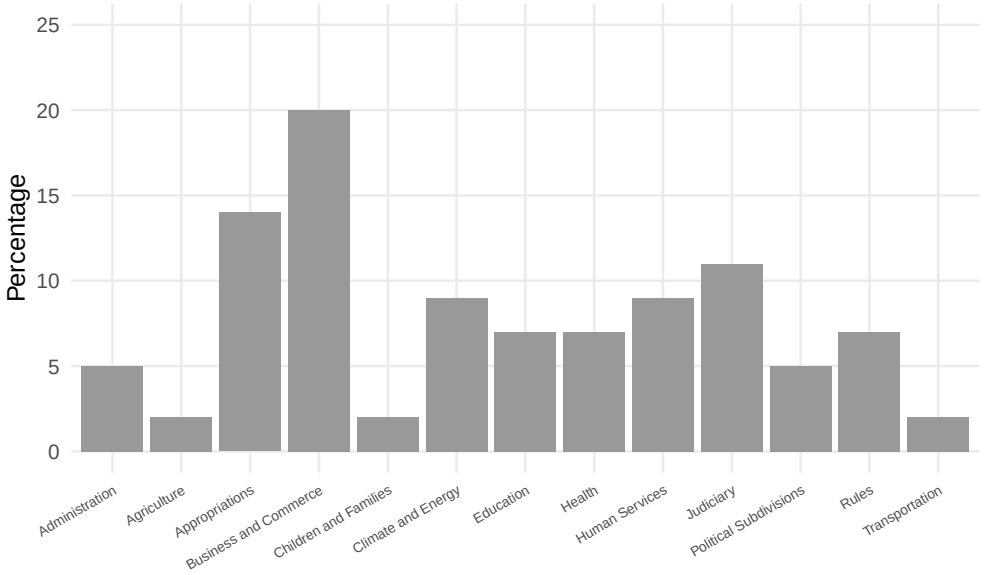

Figure A1: Committee Type Frequency, by Committee

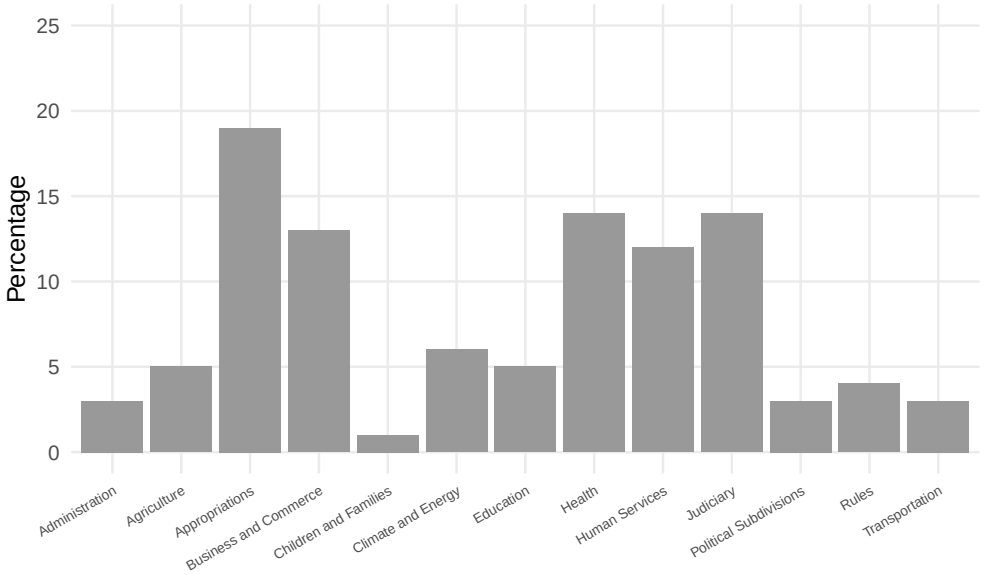

Figure A2: Committee Type Frequency, by Bill

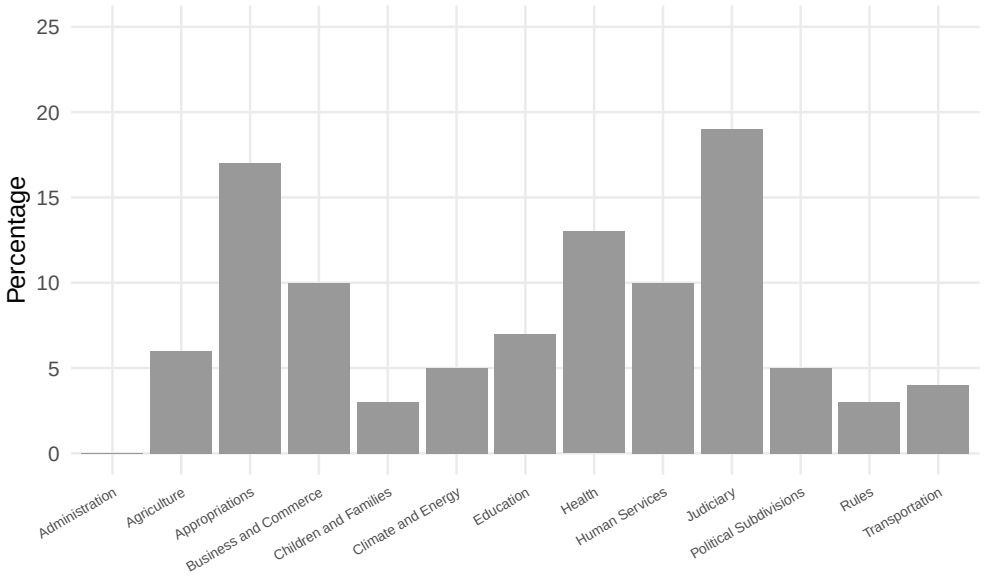

Figure A3: Committee Type Frequency, by Bill-Legislator Level

Bill-Level Statistics Across the 44 sampled committee meetings, legislators discussed 318 bills. On average, each bill received 11 minutes and 56 seconds of discussion time, though the median duration was 4 minutes and 56 seconds. Figure A4 depicts the distribution of the proportion of women in a committee at the bill-level, which is the primary level of analysis. While the representation of women on committees in this sample is somewhat higher than Congress, it still falls short of parity in many of the committee meetings.

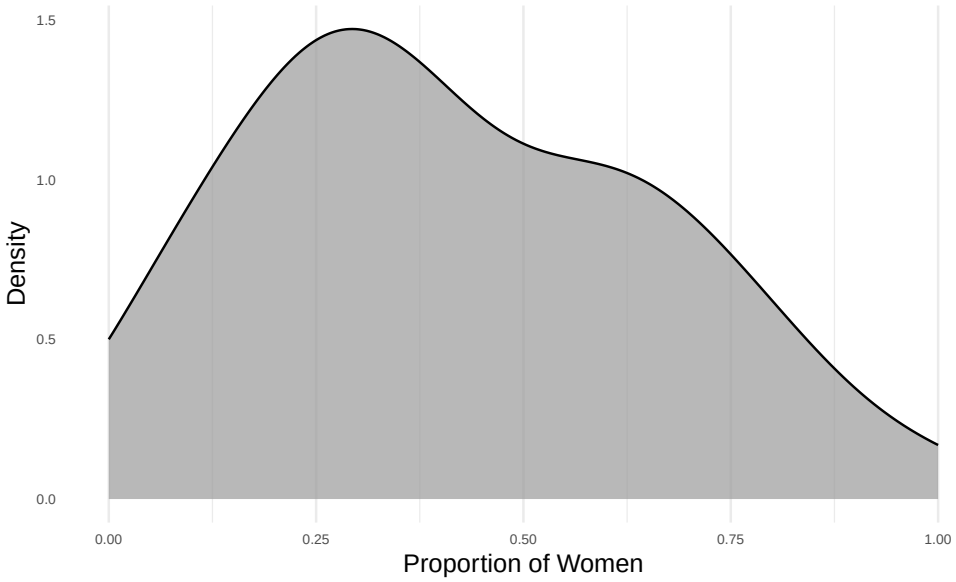

Figure A4: Distribution of the Proportion of Women in a Committee, by Bill

Member-Level Statistics The dataset includes 338 unique legislators. Of these, 131 (38%) are women and 218 (62%) are men. Partisan representation is relatively balanced, with 169 Democrats (48%) and 180 Republicans (52%). As expected given chamber size differences, more legislators in the dataset serve in the House (234, 67%) than in the Senate (115, 33%). State representation is uneven, though not severely skewed: 71 (20%) legislators are from California, 73 (21%) from Minnesota, 67 (19%) from North Dakota, 51 (15%) from Nevada, 49 (14%) from Tennessee, and 38 (11%) from Texas. On average, legislators have 7.78 years of legislative experience. 60 (17%) legislators appear in more than one committee meeting.

Data Processing Procedures Each committee meeting was coded by a single human coder. That coder recorded the start and end time for each speaking event and captured other relevant data such as the speaker's name and the bill under discussion. Because this project was conducted as a single-author capstone, multiple-coder reliability checks were not possible. I recognize that this is a limitation to the data.

Additional Analysis

Regression Tables from Main Analysis Tables A2 and A3 present the regression models corresponding to the coefficient plots shown in the main text.

Table A2: Determinants of Speaking Time

Intercept	-0.537^{***}
	(0.130)
Female	-0.032^{*}
	(0.017)
Committee Chair	0.380^{***}
	(0.019)
Bill Sponsor	0.355^{***}
	(0.021)
Republican	0.036^{**}
	(0.017)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.122^{***}
	(0.044)
Same Gender as Chair	0.038^{**}
	(0.018)
Women's Issue Bill	-0.007
	(0.018)
Legislative Professionalism	0.031^{***}
	(0.007)
N	989
R^2	0.454
Adjusted R^2	0.449
Residual Std. Error	0.230 (df = 979)
F Statistic	90.409^{***} (df = 9; 979)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Table A3: Determinants of Speaking Time, Controlling for Chair's Gender

Intercept	-0.478^{***}
	(0.129)
Female	-0.035^{**}
	(0.017)
Committee Chair	0.395^{***}
	(0.018)
Bill Sponsor	0.356^{***}
	(0.021)
Republican	0.035^{**}
	(0.017)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.126^{***}
	(0.048)
Female Chair	-0.011
	(0.018)
Women's Issue Bill	-0.011
	(0.018)
Legislative Professionalism	0.029^{***}
	(0.007)
N	989
R^2	0.452
Adjusted R^2	0.446
Residual Std. Error	0.231 (df = 979)
F Statistic	89.553^{***} (df = 9; 979)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, Male chair, not a women's issue bill

Regressions with Alternative Restrictions To assess the robustness of the findings, I estimate several models using alternative restrictions. Table A4 replaces the dependent variable, legislative speaking time, with the number of speaking turns, providing an alternative measure of participation. Using this measure, I continue to find that a higher proportion of women on a committee increases participation, although I also observe that women's issue bills receive significantly fewer speaking turns and that shared gender with the chair decreases turn taking. However, these effects are substantively small. Table A5 excludes committee chairs and bill sponsors to examine interactions among rank-and-file

legislators, who speak far less frequently than chairs and sponsors. The results are similar to those presented in the main paper. Table A6 relaxes the cutoff for discussion by including any nonzero speaking events to retain brief but possibly substantive responses while still removing roll-call votes. Estimates for the effect of the proportion of women and women's issue bills on speaking time remain consistent with the original paper. However, sharing the same gender as the committee chair is not statistically significant in this version.

Table A4: Determinants of Number of Turns

Intercept	0.064^{*}
	(0.039)
Female	0.004
	(0.006)
Bill Sponsor	0.124^{***}
	(0.007)
Republican	0.008
	(0.005)
Years in Office	0.001^{***}
	(0.0004)
Prop Women on Committee	0.055^{***}
	(0.014)
Same Gender as Chair	-0.012^{**}
	(0.005)
Women's Issue Bill	-0.025^{***}
	(0.005)
Legislative Professionalism	-0.00004
	(0.002)
N	1,246
R^2	0.233
Adjusted R^2	0.228
Residual Std. Error	0.083 (df = 1237)
F Statistic	46.961^{***} (df = 8; 1237)

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Base categories: male legislator, Democrat, opposite gender from chair, not a women's issue bill

Table A5: Determinants of Speaking Time, Excluding Committee Chairs and Bill Sponsors

Intercept	-0.173^{**}
	(0.079)
Female	-0.013
	(0.010)
Republican	0.004
	(0.011)
Years in Office	0.002^{***}
	(0.001)
Prop Women on Committee	0.086^{***}
	(0.027)
Same Gender as Chair	-0.006
	(0.010)
Women's Issue Bill	0.005
	(0.010)
Legislative Professionalism	0.013^{***}
	(0.004)
N	495
R^2	0.055
Adjusted R^2	0.042
Residual Std. Error	0.100 (df = 487)
F Statistic	4.080^{***} (df = 7; 487)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Table A6: Determinants of Speaking Time with Less Discussion Restrictions

Intercept	−0.023
	(0.075)
Female	−0.024**
	(0.011)
Committee Chair	0.424***
	(0.012)
Bill Sponsor	0.395***
	(0.015)
Republican	0.013
	(0.011)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.083***
	(0.027)
Same Gender as Chair	0.015
	(0.011)
Women's Issue Bill	0.007
	(0.011)
Legislative Professionalism	0.002
	(0.004)
N	1,596
R^2	0.556
Adjusted R^2	0.554
Residual Std. Error	0.182 (df = 1586)
F Statistic	220.746*** (df = 9; 1586)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Expanded Models with Additional Controls I also estimate models that incorporate additional variables. Table A7 includes a control for the overall gender composition of the legislative chamber, reflecting the possibility that chamber-level socialization and norms may influence individual speaking behavior. When this measure is included, the effect previously attributed to the committee's gender composition appears to be absorbed by the chamber context, suggesting that broader institutional environments may play an important role. Table A8 incorporates an intersectional measure combining gender and race. Because race

data had to be compiled from multiple sources and are limited in precision, I did not include this measure in the main paper. However, this exploratory analysis suggests that legislators who are both women and people of colors speak for less time, while other patterns remain similar.

Table A7: Determinants of Speaking Time Controlling for Overall Chamber Gender Composition

Intercept	-0.539^{***}
	(0.129)
Female	-0.032^{*}
	(0.017)
Committee Chair	0.382^{***}
	(0.019)
Bill Sponsor	0.362^{***}
	(0.021)
Republican	0.053^{***}
	(0.018)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.028
	(0.052)
Legislature's Gender Composition	0.234^{***}
	(0.073)
Same Gender as Chair	0.034^{*}
	(0.018)
Women's Issue Bill	-0.009
	(0.018)
Legislative Professionalism	0.028^{***}
	(0.007)
N	989
R^2	0.460
Adjusted R^2	0.454
Residual Std. Error	0.229 (df = 978)
F Statistic	83.174^{***} (df = 10; 978)

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Table A8: Determinants of Speaking Time Including Intersectionality Measures

Intercept	-0.489^{***}
	(0.127)
Female	0.005
	(0.019)
Not White	0.161^{***}
	(0.025)
Committee Chair	0.382^{***}
	(0.019)
Bill Sponsor	0.358^{***}
	(0.020)
Republican	0.069^{***}
	(0.018)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.135^{***}
	(0.043)
Same Gender as Chair	0.033^{*}
	(0.018)
Women's Issue Bill	-0.010
	(0.018)
Legislative Professionalism	0.025^{***}
	(0.007)
Female*Not White	-0.152^{***}
	(0.035)
N	989
R^2	0.477
Adjusted R^2	0.471
Residual Std. Error	0.225 (df = 977)
F Statistic	80.987^{***} (df = 11; 977)

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Base categories: male legislator, not white, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Regressions Using Differing Measures of Legislative Professionalism In the main paper, I rely on logged legislative operating expenditures as the measure of legislative professionalism (Brown and Mitchell, 2025). Table A9 demonstrates that substituting the Squire measure yields broadly similar results, though not identical.

Table A9: Determinants of Speaking Time Using Differing Measures of Legislative Professionalism

	Logged Operating Expenditures	Squire
Intercept	-0.537^{***}	-0.228^{***}
	(0.130)	(0.058)
Female	-0.032^{*}	-0.030^{*}
	(0.017)	(0.017)
Committee Chair	0.380^{***}	0.379^{***}
	(0.019)	(0.019)
Bill Sponsor	0.355^{***}	0.356^{***}
	(0.021)	(0.021)
Republican	0.036^{**}	0.047^{***}
	(0.017)	(0.018)
Years in Office	0.001	0.001
	(0.001)	(0.001)
Prop Women on Committee	0.122^{***}	0.081^{*}
	(0.044)	(0.044)
Same Gender as Chair	0.038^{**}	0.035^{**}
	(0.018)	(0.018)
Women's Issue Bill	-0.007	-0.008
	(0.018)	(0.018)
Leg Prof Logged Operating Expenditures	0.031^{***}	
	(0.007)	
Leg Prof Squire		0.038^{***}
		(0.007)
N	989	989
R^2	0.454	0.459
Adjusted R^2	0.449	0.454
Residual Std. Error (df = 979)	0.230	0.229
F Statistic (df = 9; 979)	90.409^{***}	92.159^{***}

$^{*}p < .1$; $^{**}p < .05$; $^{***}p < .01$

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Chamber-Specific Regression Results To examine whether results are chamber-specific, Table A10 presents regressions estimated separately for the House and Senate. My results appear to be driven largely by Senate committees. However, these reduced sample sizes limit statistical power, so results should be interpreted cautiously.

Table A10: Determinants of Speaking Time, Results Split by Chamber

	House	Senate
Intercept	−0.158	−1.153***
	(0.163)	(0.211)
Female	0.004	−0.104***
	(0.020)	(0.031)
Committee Chair	0.365***	0.374***
	(0.024)	(0.033)
Bill Sponsor	0.374***	0.351***
	(0.024)	(0.038)
Republican	0.037*	0.035
	(0.021)	(0.030)
Years in Office	0.002	−0.001
	(0.002)	(0.002)
Prop Women on Committee	0.109*	0.166**
	(0.057)	(0.071)
Same Gender as Chair	0.032	0.085**
	(0.021)	(0.033)
Women's Issue Bill	0.015	−0.064*
	(0.020)	(0.038)
Legislative Professionalism	0.009	0.066***
	(0.008)	(0.011)
N	630	359
R^2	0.462	0.497
Adjusted R^2	0.454	0.484
Residual Std. Error	0.216 (df = 620)	0.242 (df = 349)
F Statistic	59.222*** (df = 9; 620)	38.301*** (df = 9; 349)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill

Regression with State Fixed Effects Table A11 presents a model with state fixed effects rather than state-level controls. Several coefficients lose statistical significance under this specification, possibly due to reduced variation in the gender makeup of committees within-state. These results suggest that state-level contexts influence the patterns observed and that certain states may be driving some of my findings.

Table A11: Determinants of Speaking Time Using State Fixed Effects

Female	-0.037^{**}
	(0.017)
Committee Chair	0.372^{***}
	(0.019)
Bill Sponsor	0.353^{***}
	(0.021)
Republican	0.032^{*}
	(0.019)
Years in Office	0.001
	(0.001)
Prop Women on Committee	0.033
	(0.052)
Same Gender as Chair	0.029
	(0.018)
Women's Issue Bill	-0.011
	(0.018)
N	989
R^2	0.469
Adjusted R^2	0.461
Residual Std. Error	0.227 (df = 975)

*p < .1; **p < .05; ***p < .01

Base categories: male legislator, not bill sponsor, not committee chair, Democrat, opposite gender from chair, not a women's issue bill