**Online Appendices**

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# **Determinants of Sharing Staff**

It is important to consider the presence of homophily in determining shared staffer assignment. When estimating the influence of social networks it is important to account for pre-existing homophily because results may otherwise be biased (Rogowski and Sinclair 2012). Staffer assignments are done by a centralized human resource department but two legislators with a pre-existing relationship may request that they be given a shared staffer. Indeed, shared staffers are only assigned to co-partisans in Arizona, Indiana, and New Mexico. Staffers may also vote similarly due to pre-existing shared characteristics, such as legislators in multimember districts who represent the same geographical constituency (Kirkland 2012). I cannot attribute congruent behavior as being caused solely by the shared staffer in the presence of shared legislator characteristics that would lead to congruent voting. Unfortunately, I cannot observe all pre-existing relationships to address this concern. I can however test some of the determinants of who shares staffers. If staffer assignment is driven by homophily then I should find that legislators with shared characteristics are more likely to share staffers. In this section I test the association of shared partisanship, district, ethnicity, and gender on being assigned a shared personal staffer. Other shared characteristics may be relevant, but this is the available data.

In **Table 1** below I test these determinants for the Arizona, Indiana, and New Mexico House of Representatives using a modified form of the data set. I estimate the association of these characteristics on shared personal staff assignment as a linear probability model (LPM) (Angrist and Pischke 2008; Wooldridge 2015): . The dataset has been collapsed by dyad pair for this LPM as the outcome (sharing a personal staffer) is the same across bill.

For all three legislatures I can test the association of shared political party. In all three legislatures I find that members of the same political party are more likely to share staffers (p-value < 0.001). This serves as a useful sanity test as personal staffers are only shared between co-partisans.

In Arizona and New Mexico, I can test the association of both legislators being women. I look at woman-woman dyad pairs, as opposed to pairs with shared gender (woman-woman and man-man pairs), because homophily should be strongest among traditionally underrepresented groups among legislators. Whites and men respectively have low levels of group consciousness compared to people of color and women (Croll 2007). Furthermore, women legislators are known for collaborating amongst themselves in legislative bodies (Craig et al. 2015; Holman and Mahoney 2018) which may translate to a higher likelihood of sharing a staffer. I fail to find evidence that women-women dyad pairs are more likely to share staffers in Arizona (p-value = 0.799) or New Mexico (p-value = 0.771).

In New Mexico I can uniquely test the association between legislators’ ethnicity with staffer assignment, because it is one of a few legislatures where Hispanics compose a substantial share of members. Forty percent of New Mexico legislators in the 2018-2020 session were Hispanic (Fraga, Juenke, and Shah 2019). Like the test for homophily among women, I test the influence of Hispanic-Hispanic dyad pairs, as opposed to shared ethnicity (Hispanic-Hispanic and white-white pairs), because homophily should be strongest among traditionally underrepresented groups. Hispanic legislators are more likely to collaborate with other Hispanic legislators (Craig et al. 2015) and this may translate to an increased likelihood of sharing personal staff. I find that co-Hispanic legislators are 4.11 percentage points more likely to share personal staff (p-value = 0.012).

In Arizona I can test the association of multimember districts with staffer assignment. Legislators who share a multimember district have been argued to be more likely to coordinate with one another, and if this is true this should translate to a higher likelihood of sharing personal staff (Kirkland 2012). I find that legislators from the same district are 13.05 percentage points more likely to share staffers (p-value < 0.001) than otherwise. This supports Kirkland (2012)’s hypothesis that multimember districts promoting coordination. I cannot test the association of multimember districts with staffer assignments in Indiana or New Mexico because neither have multimember districts.

In **Table 1 column 4** I pool the data for the three legislatures and account for state legislature fixed effects. Across all specifications I find that co-partisans are more likely to be assigned a shared staffer, which must be true because staffers are only assigned to co-partisans. This serves as a sanity test for our results.

Since I find evidence that legislators’ shared characteristics are associated with an increased likelihood of sharing personal staff, my analysis regarding vote congruency should be biased in favor of finding a positive effect for shared personal staff on vote congruence. If I do not find evidence that shared personal staff are positively associated with an increase in congruent voting, my confidence in the null or negative results is increased.

**Table 1 – Determinants of Sharing Personal Staff, LPM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | DV: Share Personal Staff | | | |
|  |  |  |  |  |
| Shared Party | 0.015\*\*\* | 0.038\*\*\* | 0.109\*\*\* | 0.047\*\*\* |
|  | (0.004) | (0.004) | (0.011) | (0.003) |
| Both Women | 0.001 |  | 0.004 |  |
|  | (0.006) |  | (0.015) |  |
| Shared Multimember District | 0.131\*\*\* |  |  |  |
|  | (0.015) |  |  |  |
| Both Hispanics |  |  | 0.041\*\* |  |
|  |  |  | (0.016) |  |
| Constant | -0.001 | -0.000 | -0.004 | -0.001 |
|  | (0.003) | (0.003) | (0.008) | (0.002) |
|  |  |  |  |  |
| Observations | 2,250 | 5,660 | 1,770 | 9,680 |
| R-squared | 0.040 | 0.019 | 0.063 | 0.034 |
| Time | 2015-2018 | 2015-2018 | 2017-2018 | Pooled |
| Legislature | Arizona House | Indiana House | New Mexico House | Pooled |
| Standard errors in parentheses. State legislature fixed effects accounted for in Column 4. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 | | | | |

# **Falsification Tests**

Another way to address endogenous network formation concerns is to conduct a falsification test. Sharing staffers in the future should not be associated with behavior in the present. If future shared ties (t+1) are associated with present behavior it is because of pre-existing ties between legislators. If I account for future shared staff and my results remain unchanged, I can be more confident in my findings. This falsification tests assume that legislators’ relationships amongst themselves are time invariant in the short term.

In the Arizona and New Mexico House of Representatives future ties are defined as sharing staffers in the next session. In Indiana future ties are defined as sharing staffers in the next year. Unlike Arizona and New Mexico, Indiana’s House of Representatives re-assigns staffers yearly. In **Table 2** I estimate the following LPM: .

I do not find evidence that shared staffers increase vote congruency in either the Arizona or Indiana House of Representatives in **Table 2**. I find mixed evidence regarding the association of shared staffers with congruent roll-call voting in the New Mexico House of Representatives. In **Table 2** I find evidence that shared staffers are associated with lower voting congruency, but in **Table 2** I find that shared staffers are associated with a higher level of voting congruency. In Arizona (p-value = 0.013) and New Mexico (p-value < 0.001), I find evidence that future shared staffers are associated with vote congruency in the present period. Legislator dyads that will share staff in the future are less likely to vote congruently in the present period. In **Table 2 column 4**, I pool the data across legislatures, accounting for state legislature fixed effects. In **column 4** I find that shared staffers in the future are associated with a decrease in congruent voting in the present (p-value < 0.001).

**Table 2 – Falsification Test, LPM**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | DV: Congruent Roll-Call Voting | | | |
|  |  |  |  |  |
| Shared Staff, t | 0.005 | -0.025 | 0.011\* | 0.001 |
|  | (0.022) | (0.042) | (0.006) | (0.020) |
| Shared Staff, t+1 | -0.062\*\* | -0.003 | -0.032\*\*\* | -0.055\*\*\* |
|  | (0.025) | (0.046) | (0.006) | (0.020) |
| Shared Party | 0.225\*\*\* | 0.071\*\*\* | 0.066\*\*\* | 0.180\*\*\* |
|  | (0.005) | (0.008) | (0.007) | (0.004) |
| Constant | 0.612\*\*\* | 0.769\*\*\* | 0.776\*\*\* | 0.658\*\*\* |
|  | (0.003) | (0.005) | (0.005) | (0.002) |
|  |  |  |  |  |
| Observations | 928,203 | 210,549 | 173,745 | 1,312,497 |
| R-squared | 0.063 | 0.008 | 0.007 | 0.050 |
| Time | 2015-2018 | 2015-2018 | 2017-2018 | Pooled |
| Legislature | Arizona House | Indiana House | New Mexico House | Pooled |
| Standard errors are in parentheses and are clustered by dyad pair. State legislature fixed effects accounted for in Column 4. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 | | | | |

As noted in the main manuscript, ordinary standard errors may not be appropriate for this analysis even if clustered at the dyad pair level. As an alternative I report p-values for the Shared Staffer (present period) coefficient using randomization inference in **Table 3**. Like the earlier randomization inference exercise the coefficient values were permutated one thousand times. Using randomization inference p-values I find that sharing staff in the Indiana House of Representatives decreases the association between shared personal staffers and congruent rollcall voting by approximately 2.1 percentage points (p-value < 0.001). In the New Mexico House of Representatives sharing staff is positively associated with roll-call vote congruency (p-value = 0.010). I do not find evidence that shared staffers are associated with roll-call congruency in the Arizona House of Representatives (p-value = 0.276), nor when I pool data (p-value = 0.709).

**Table 3 – Falsification Test, LPM with Randomization Inference P-Values**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
|  | DV: Congruent Roll-Call Voting | | | |
| Shared Staff β | 0.005 | -0.025 | 0.011 | 0.001 |
| P-Value | 0.276 | 0.000 | 0.010 | 0.709 |
| Legislature | Arizona | Indiana | New Mexico | Pooled |

# **Probit**

The main analyses were conducted using linear probability models or OLS. As a robustness check the main analyses are re-run as probits here. Results remain substantially the same. Marginal effects calculated and graphed using Stata’s MARGINS and MARGINSPLOT commands respectively.

**Table 4 – Association of Shared Staff with Congruent Roll-Call Voting, Probit**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | DV: Congruent Roll-Call Voting | | | |
|  |  |  |  |  |
| Shared Staff | -0.032 | -0.067 | -0.172\*\*\* | -0.236\*\*\* |
|  | (0.076) | (0.099) | (0.057) | (0.047) |
| Shared Party | 0.690\*\*\* | 0.315\*\*\* | 0.278\*\*\* | 0.542\*\*\* |
|  | (0.013) | (0.027) | (0.016) | (0.010) |
| Shared Multimember District | 0.018 |  |  |  |
|  | (0.070) |  |  |  |
| Both Women | -0.067\*\*\* |  | 0.106\*\*\* |  |
|  | (0.015) |  | (0.015) |  |
| Both Hispanics |  |  | -0.182\*\*\* |  |
|  |  |  | (0.035) |  |
| Constant | 0.296\*\*\* | 0.673\*\*\* | 0.720\*\*\* | 0.353\*\*\* |
|  | (0.005) | (0.016) | (0.011) | (0.006) |
|  |  |  |  |  |
| Observations | 1,853,591 | 290,087 | 935,488 | 3,079,166 |
| Time | 2015-2018 | 2015-2018 | 2017-2018 | Pooled |
| Legislature | Arizona House | Indiana House | New Mexico House | Pooled |
| Standard errors are in parentheses and are clustered by dyad pair. State legislature fixed effects accounted for in Column 4. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 | | | | |

**Figure 1 – Margins plot of Table 4 Column 4**

A graph showing a red line

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