Online Appendix for the Manuscript:

“Citations to the Publications of Male and Female Political Scientists Revisited”

*The Data for Our Analyses*

The first data set, as explained in our manuscript, is the one used for the analyses in Masuoka, Grofman, and Feld (2007a). The data are for tenure track faculty in PhD granting departments in the United States in 2002. It includes citation data from the journal archive in the Social Science Citation Index from 1950 into 2002. We downloaded the data from the Bernie Grofman Dataverse on the Harvard Dataverse site on October 31, 2022. This data set also includes corrections reported in Masuoka, Grofman, and Feld (2007b).

We added a variable for gender to the original data set using the same procedures as Kim and Grofman (2019), as explained in their Online Appendix, but with particular attention to coding correctly individuals with names that did not readily indicate gender.

We also found two scholars who were listed twice in the original data set, and we eliminated one of these duplicate entries for both individuals. The original data set from Masuoka, Grofman, and Feld had 3721 cases, and our data set with the two preceding deletions as well as a few others with data missing that would be necessary for our analyses leaves us with a working data set of 3,717 cases.

The second data set is the one used by Kim and Grofman (2019a), and was provided to us by Professor Kim. This data set, for faculty at PhD granting departments in the United States in 2017, includes 4,089 faculty. It counts citations from Google Scholar, that provides counts from a much wider variety of research products than does the Social Science Citation Index. As Kim and Grofman also note, they could not collect data on the year in which 320 of these individuals earned their PhD nor, for many of that 320, at which institution they earned their doctorate. Thus about 8 percent of the original cases are not suitable for our analyses because of missing data.

Kim and Grofman collected their citation data from Google Scholar profiles for those scholars who had one. For the remaining cases Kim and Grofman themselves counted citations in Google Scholar, a task made less challenging when one is working with individuals in his or her own discipline.

We attempted to discover data on the PhD institution, year of PhD, and citation counts for the cases missing one or more of those data points. But, like Kim and Grofman, we found such data difficult to acquire. Further, unless we could acquire all three of these missing data values for a given case in the data set, it would not be included in our analyses. We did, however, add about a dozen cases to the set we analyzed. Yet future scholars working with these data (that would be archived in the Harvard Dataverse if our paper is accepted for publication), might mount different analyses that could employ the somewhat larger sample we were able to create if one needed only one or two of the originally missing values to include a case in empirical analyses.

Both of these data sets include emeritus faculty when they were listed on departmental websites. Kim and Grofman, further, distinguish “professionally active” emeritus faculty who they identify by how such individuals are listed on departmental rosters. We include emeritus faculty in all our analyses under the assumptions they are active researchers (as much as can be judged for any faculty in the full datasets) and because excluding them would introduce an unjustified age-bias.

*The Research Design for Our Analyses*

Most if not all of the prior research we know on the determinants of faculty productivity or citations presents multivariate models with numerous predictors that one might presume to affect all the cases equally. Our design, in contrast, is inspired by the regrettably often ignored paper by Christopher Achen (2002, esp. 440-444) in which he argues that we too often only present large-scale multivariate models for entire sets of cases without investigating whether those findings equally characterize substantively important sub-sets of those cases. Thus our analyses are explicitly designed, as Achen suggests, to determine how patterns of citations over time characterize importantly different sub-sets of scholars.

However, we also present here conventional multivariate regression models for total citations, using the key predictor variables we investigate, for both data sets. Because both measures of total citations include some zeros and have long, right-side tails, our dependent variables are in both cases the logged total citations measure plus one.

*The regression for the 2002 data set is:*

Log(Total citations + 1) = 99.5\* + .288\* (Male Gender) -.048\* (Year PhD earned)

(4.15). (.069) (.002)

+ 1.161\* (Top Rank Department)

(.079)

Adj. R2 = 0.19, \* p < 0.05

*The regression for the 2017 data set is:*

Log(Total citations +1) = 47.9 + .086\* (Male Gender) - .023\* (Year PhD Earned)

(1.55) (.028) (.001)

+ .493\* (Top Rank Department)

(.035)

Adj. R2 = 0.24, \* p < 0.05

*Tables for the Tests of Hypotheses About the Effects of Women’s Representation in Research Fields on Gender Gaps in Citations There*

Our full manuscript derives two hypotheses on this topic from prior research: *hypothesis 4* that the gender gap in citations earned by women in sub-fields where women are especially numerous will be lower than the gaps in fields where they are less numerous, and *hypothesis 5* that greater female presence in a field will not eliminate gender bias in career citations. The word limit for *PS* manuscripts, however, does not allow space for us to present these tables there but only the summaries of what they indicate about these two hypotheses. So Table 1 here presents those full results for our 2002 data set, and Table 2 here presents the ones for the 2017 data. As noted in the main text, in neither data set is there support for hypothesis 4, likely because the percentages of women are low in every sub-field. Thus hypothesis 5 is also moot. There are, however, a few sub-fields in both data sets where women’s citations rival or exceed those of men. And the latter findings could stimulate further research on why that is the case.

Table 1. Gender Representation and Gender Bias in Social Science Citation Index Citations

by Research Field For Political Scientists in PhD Granting Departments in 2002(a)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Research Field | N of Male  Faculty | N of Female  Faculty | Percentage of Faculty Who Are Female | Average N of Citations for Women | Average N of Citations for Men | Female Average Citations as a Percentage of Male Average Citations |
| Political Theory | 564 | 169 | 23% | 115 | 191 | 60% |
| Comparative Politics | 1,063 | 304 | 22% | 99 | 225 | 44% |
| American  Politics | 983 | 279 | 22% | 102 | 248 | 41% |
| PA/Policy/  Public Law | 940 | 268 | 22% | 156 | 192 | 81% |
| International  Relations | 824 | 193 | 18% | 68 | 190 | 36% |
| Methods | 410 | 84 | 17% | 79 | 275 | 29% |

(a)In all the male-female mean pairs the male mean is statistically significantly larger than the female mean.

Source: Masuoka, Grofman, and Feld (2007a).

Table 2. Gender Representation and Gender Bias in Google Scholar Citations

By Research Field For Political Scientists in PhD Granting Departments in 2017

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Research Field | N of Male  Faculty | N of Female  Faculty | Percentage of Faculty Who Are Female | Average N of Citations for Women | Average N of Citations for Men | Female Average Citations as a Percentage of Male Average Citations |
| Comparative | 840 | 375 | 31% | 1,841 | 3,308 | 56% |
| Political Theory | 312 | 134 | 31% | 2,090(a) | 1,562 | 134% |
| PA/Policy/ Public Law | 360 | 147 | 29% | 1,094 | 2,021 | 54% |
| International  Relations | 786 | 270 | 26% | 1,579 | 2,771 | 57% |
| American | 939 | 309 | 25% | 1,298 | 2,965 | 44% |
| Methods | 367 | 116 | 24% | 1,539 | 3,879 | 40% |

(a)In this comparison for Political Theory male-female means there is a significant difference between the two and with the female mean being the larger one.

Source: Kim and Grofman (2019a).

*Evidence for and Against the Effect of a “Leaking Pipeline” for Women in Our Data*

There has long been concern that a “leaking pipeline” exists for women in the academy generally and in political science in particular (American Political Science Association 2005, 3-6). That is, it is feared that more women than men abandon academic careers either while still in graduate school or after some time in a professorial position. The most common presumed cause of such a disparity is that more women than men find academic professional life personally or professionally challenging or literally hostile and thus leave academic work. We discuss this problem in our full manuscript and present evidence from Kim and Grofman (2019b) in Table 3 in the paper that suggests such a selection effect biased against women is not a notable problem in the first data set we analyze. But we elaborate that discussion here and provide additional evidence for the latter conclusion.

If this problem was more commonly experienced by women than men in our data sets, the older cohorts of women could be either a hearty few who endured challenging climates and still prospered in their careers, or they could have held positions in departments that did not have difficult climates. Yet if many other women left the profession because of climate problems or other more attractive careers, then the older cohorts of women in our data who demonstrate long-term success in earning research citations could themselves be the product of a selection effect, and thus they would not be representative of the pool of women generally who began their careers in PhD departments in political science.

The results we present in Table 3 in the manuscript suggest that such a selection effect does not notably diminish the representativeness of our data by gender. Further, the latter data are similar to those reported by Hill (2021) who tracked the careers of faculty newly appointed to tenure track positions in PhD granting departments in political science in 1988 and 1999. While his sample is smaller, he was able to examine more intensively which individuals left PhD department appointments at different stages of a conventional career as well as the likely reasons they did so. He also found that a substantially higher percentage of men than women left the profession early in their careers without earning tenure – a finding that is duplicated in the data from Kim and Grofman (2019) reported in Table 3 of our full manuscript. Further, later career departures were rare in Hill’s data and about equivalent in percentages for men and women.

Comparable if less complete evidence is presented in Box-Steffensmeier, Cunha, Varbanov, Hoh, Knisley, and Holmes’s (2015) investigation of the time from hire to time of departure of faculty in 19 major American universities in seven social science fields (including political science) from 1990 to 2009. The latter study found “no significant difference between genders in faculty retention,” although it did not include data on the reasons for leaving a position or on where job leavers went.

*Our Compliance with the APSA’s Statement of Principles and Guidance for Human Subjects Research and With our University’s Human Subjects Research Rules*

Scholars submitting papers to *PS* must answer the following “screening question” when they submit papers*, “*To ensure that research published in the *PS* is consistent with these [APSA] principles, *when submitting their research* for publication in *PS*, all authors will be expected to explicitly affirm the ways in which their research practices conform to these standards. In particular, submitting authors will be asked:

* if the research draws on research directly engaging human participants, including human subjects, expert interviewees, and those exposed to experimental interventions, should answer "yes" to the screening question.

We answered *no* to this question, because our research does not employ human subjects as they are anticipated in the APSA Standards.  Further, the data we analyze on individual scholars is publically available – some on the professional websites or webpages of these individuals and some on the Web of Science and Google Scholar websites. Indeed, many scholars in these two data sets display their personal citation scores or rankings from these data on their personal, publically available, webpages. Thus, to cite another concern of the APSA Standards, we cannot envision our use of these data leading to “harm” or “trauma” from how we do so. The preceding conclusion is buttressed by the fact that, unlike in the *PS* papers from Masuoka, Grofman, and Feld (2007a) and Kim and Grofman (2017), we do not identify in our paper any individuals by name.

Further, the Institutional Review Board at our university does not define the research in our article as “Human subject research” which would require approval, because our data are not acquired “through intervention or interaction with individuals” *and* because our research does not collect ‘private information.’” Private information is that which the subject can “expect that no observation or recording is taking place” *and* that is information “the individual can reasonably expect will not be made public.”

Of course, both data sets we analyze include individual scholars’ names, departmental affiliations, and related data. Yet the first data set we use for faculty in 2002 is archived at the Harvard Dataverse, and thus is already available to any scholar who wishes to download it.. The second data set for faculty in 2017 was provided to us by Professor Kim as was explicitly promised in the original *PS* article for any scholar who requested a copy of the data. Both data sets include the personal information listed above.

If our paper is accepted for publication, and because we have added new data into both datasets, we would archive both of them with the Harvard Dataverse. And we would follow instructions from the journal editors about all aspects of that archiving procedure.

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