The Gender Composition of Submissions to JEEA 2019-2020

Imran Rasul, Managing Editor JEEA[1]

Report Prepared for the EEA Executive Committee, March 2021

Introduction

This report presents a preliminary analysis of the gender composition of submissions to JEEA in 2019 and 2020. The comparison is designed to shed light on whether and how the pandemic has impacted submitted work at JEEA, and in doing so, suggest policies that the EEA and JEEA can take to ameliorate any adverse consequences on authors.

To be clear, the focus is on changes between 2019 and 2020, and not on issues related to the level of submissions by female authors, that pre-date the pandemic.

Data and Coding Gender

The sample data is extracted from Editorial Express, and contains details of papers, and some elements of the editorial process. The paper details include the date of submission, authors, submitting author, paper title and JEL code. Data on the editorial process for each paper relates to the handling editor, first decision (desk rejection, reject, revise and resubmit, accept/conditional acceptance) and time to first decision (in days).

We consider all first submissions from January 1st 2019 through to December 31st 2020. We do not consider resubmitted papers.

Editorial Express does not ask submitting authors for their gender or that of co-authors. We use the *genderize* webtool (https://genderize.io/) to code author genders. This algorithm assigns gender using data on first names and the frequency of these names using data from a variety of countries. The count of how many data entries, and for which countries, are used to establish these assignments is reported here: https://genderize.io/our-data. For each name, the algorithm assigns a probability of the individual being of a given gender (that is essentially the ratio of male to females with that first name).

The default setting is to assign a given gender to a forename if the probability of the forename belonging to someone of that gender is greater than .5. Our basic results use this threshold to classify the gender of each co-author on a paper, and thus to classify each submitted paper as one co-authored by men only, co-authored by women only, or mixed gender submissions. Below we document the robustness of the

results on the gender composition of submissions, to assigning gender to author forenames using higher probability thresholds (.66, .9, .95 and .99). the results are generally robust to these higher thresholds (except for the highest threshold of .99, when the share of papers whose gender composition is unknown rises dramatically).

Aggregate Submission Numbers

Panel A of Table 1 shows submission numbers by year (2019/2020). For each year we also consider the period March 1st to December 31st.[2] In 2019, 1107 papers were submitted. 58% were all-men submissions, 9% were all-women submissions, and 30% were mixed gender submissions. Aggregate submission numbers rose 10% in 2020. However, the gender composition of submitted papers remains relatively unchanged between 2019 and 2020 (either considering the entire year or the period from March 1st only). We just observe a slight increase in the share of mixed gender papers as the share of all-men papers slightly falls.

While Panel A shows the gender composition of submissions, Panel B aggregates across authors on papers to document the total number of authors on submitted papers, by gender. In 2019 75% of all author were men, 23% were women and 2% have an unknown gender based on the *genderize* webtool. These percentages do not change significantly in 2020 (despite a 14% rise in author numbers).

Panel C confirms that the gender of submitting authors closely reflects the gender composition of authors overall (so women are not more/less likely to be the submitting author) and this does not change in 2020.

Submissions by Month

Figure 1 shows time series evidence on the gender composition of submitted papers by month of submission, in 2019 and 2020. Panel A shows that from the start of the pandemic in March 2020, there was an increase in first submissions relative to the same month in 2019, that was sustained until September 2020. Although monthly submissions fell in the last quarter of 2020 relative to 2019, this still left submissions 10% higher in 2020 over 2019 (Table 1, Panel A). This pattern reflects the impression co-editors also had at the time.

Panels B to D show the time series evidence split by paper types: all-men, all-women and mixed gender papers (note the differently scaled y-axes in these panels). In the first month of the pandemic, March 2020, we did see a sharp change in the gender composition of submissions at JEEA: relative to February 2020, the share of all-men papers rose in March 2020 and April 2020 (from 50% to 63%); the share of all-women papers fell substantially over the same period, comprising 14% of submissions in February 2020, 10% in March 2020, and only 5% in April 2020. The share of mixed gender papers fell slightly in April 2020 relative to Match 2020. These short run drops were reported at the time [Rasul 2020], such changes were also reported at some other

---

[2] We drop those papers submitted to JEEA as Keynote papers (five), and one paper was withdrawn. We also drop 12 papers for which the gender of no authors can be identified.

journals including the EJ [Bar Isaac 2020, Rasul 2020] but with other journals – such as the REStat - reporting no short run differences [Fisman 2020].

Over the pandemic period as a whole, we observe little longer term change in the gender composition of submissions. As noted earlier (Table 1, Panel C) the total number of women authors in 2020 was higher than in 2019 (640 versus 554), corresponding to a 16% rise (greater than then 10% rise in submission numbers).

Robustness

Table 2 shows how the basic estimates of the gender composition of papers in 2019 and 2020 changes with alternative thresholds by which to assign gender to forenames. The default threshold of 50% generates results between years that are actually quite similar to thresholds up to 95%. However, when a 99% threshold is imposed, the majority of papers are of unknown gender composition.

Editorial Decisions

We next begin examining outcomes for papers – that reflect a combination of the quality of submissions, editor and referee behaviour. To help give better context to these results, Panels A and B show how the number of authors and sole authorship vary by the gender composition of submissions. We see that all-men papers have slightly more co-authors, and are far less likely to be single authored relative to all-women submissions. These patterns exist in 2019 and do not change much in 2020 (although the share of all-women submissions that are single authored rose from 61.2% in 2019 to 66.7% in 2020

The remaining Panels of Table 3 show the distribution of editorial decisions by year of first submissions. In 2019, all women papers are more likely to be desk rejected, and this pattern remains in 2020 (115% versus 116%). On the whole, we see little evidence of a change in the composition of decisions by the gender of authors between 2019 and 2020: the difference-in-difference estimates are all small, and on some margins – such as the likelihood of receiving a revise and resubmit, this rises for all-women papers relative to all-men papers.

A similar pattern of results follows in Table 4 on decision lags for each type of editorial decision. Although there are differences in 2019 between all-men and all-women papers, these do not change between 2019 and 2020. Indeed, if anything, decision times for all-women papers tend to fall faster in 2020 than for all-men papers (both for papers that are rejected and those that are asked for revisions).

Comparisons to Other Economics Journals

While still informative, we would caveat the preliminary nature of our analysis. The coding of author gender in our analysis is imperfect, and more time could be spent systematically cleaning the data from Editorial Express. It is therefore useful to try and compare our findings to other analysis using data from leading journals in economics.

The first comparison we consider is with Card et al. [2019] who report decision outcomes for a larger and recent sample of papers submitted to four journals: the

QJE, JEEA, REStat and REStud. They use a more sophisticated algorithm to code the gender of authors, and also have further information on the seniority of authors. They thus distinguish between all-men, all-women, and mixed papers where the latter group is further split depending on whether there is a senior women co-author.

Figure 2 shows that although there are levels differences in likelihood of decisions at first submissions between JEEA and this larger sample of submissions (for example, JEEA has higher rates of desk rejection and lower rates of revision than this larger sample), the relative rankings by author gender composition is relatively similar for each decision type. For example, all-women authored papers tend to be desk rejected at a higher rate than all-men authored papers. This is true for the wider sample of journals, and JEEA in 2019 and 2020. The same rankings across studies appear for rates of rejection and rates of revise and resubmits.

The REStud is the only other leading economics journal we know of that has conducted and made public similar analysis of the gender composition of submissions over the pandemic [Fuchs-Schündeln 2021]. This uses the same algorithm as Card et al. [2019] to assign gender to authors. Figure 3 reproduces the same statistics on the gender composition of papers for JEEA as published for the REStud (using the same time period of first submissions).

We again note level differences: JEEA receives a higher share of all-women submissions and slightly higher share of mixed gender submissions. The relative change in shares in the time periods shown are quite similar across journals, with there being not much change in the period March 11 to April 26 across years.

Other Margins

There are other margins that could be explored with the current data from Editorial Express. For example, the *genderize* webtool also provides an estimated age of authors, that could be used to examine heterogeneous effects for authors at different ages (say approximating to those with young children versus those with no or older children).[3] The webtool also provides an assigned nationality to authors, although from a brief examination this turns out to be difficult to use because so many co-author teams are based across countries. Due to concerns over small cell sizes, we have not utilized the JEL code information on submissions to examine potential differences by field.

Discussion

In our analysis we do not consider resubmitted papers – for which there might be pandemic related issues over the time it takes authors to return papers. This is measured in the Fuchs-Schündeln [2021] analysis for the REStud, and shows more pronounced short run changes in rates of resubmitted papers by the gender composition of authors.

---

[3] Barber et al. [2021] use survey evidence from AFA members to document those women with young children has especially pronounced falls in research productivity during the pandemic.

For first submissions though, the analysis is perhaps contrary to expectations given the short run impacts documented, as well as suggestive evidence from finance [Barber et al. 2021], some other disciplines in the sciences [Cui et al. 2020, McCormick, 2020, Pinho-Gomes et al. 2020, Viglione 2020, Ribarovska et al. 2021]. [4] However not all other disciplines report large changes in the gender composition of submissions [Jordan and Carlezon 2020], and it is reassuring that our findings are in line with those from the REStud [Fuchs-Schündeln [2021].

The data used for this report focuses on submissions received up to the end of 2020, and might thus reflect the submission of papers that were close to or part way through being produced during the pandemic. However, there remain a separate set of concerns over the ability of economists to start new projects during the pandemic, and that this impacts might have hit women harder than men, say because of the division of time within households that took place during lockdowns etc. Such differential gender impacts might then take longer to show up, perhaps in submission received in 2021 and thereafter. Such gender gaps have been documented among academics, especially for women with young children [Deryugina et al. 2021].

The co-editors at JEEA will continue to monitor the situation and consider policy changes should they be required to address imbalances. To reiterate, this report has been about changes over time rather than levels. We will continue to work to assess whether and how JEEA is doing enough to attract submissions from all economists.

References

Barber.B.M, W.Jiang, A.Morse, M.Puri, H.Tookes and I.M.Werner [2021] What Explains Differences in Finance Research Productivity During the Pandemic?, mimeo UC Davis.

Bar-Isaac [2020, April) Twtter post
https://twitter.com/profeski/status/1252573349471027200

Card.D, S.DellaVigna, P.Funk and N.Iriberri [2019] "Are Referees and Editors in Economics Gender Neutral?" *Quarterly Journal of Economics* 135: 269-327.

Cui.R, H.Ding and F.Zhu [2020] Gender inequality in research productivity during the COVID-19 pandemic, mimeo.
Fisman.R [2020, April] Twitter post
https://twitter.com/RFisman/status/1252311833743994881

Deryugina.T, O.Shurchkov and J.E.Stearns (2021) COVID-19 Disruptions Disproportionately Affect Female Academics Tatyana NBER Working Paper 28360.

Fuchs-Schündeln.N [2021] Gender Structure of Paper Submissions at the Review of Economic Studies During COVID-19: First Evidence, mimeo, Frankfurt University.

---

[4] An analysis of the gender composition of authors in the NBER and CEPR Working paper series is available here: https://sites.google.com/view/projectcaper/home This shows that based on data from the first months of the pandemic (until October 2020), although the relative number of women doing non-pandemic related research has remained stable, few women are working on research related to the pandemic. This might translate into longer term changes in the gender composition of submissions.

Jordan.C.J and W.A.Carlezon Jr. [2020] "Effects of the COVID-19 Pandemic on gender Representation Among Corresponding Authors of Neuropsychopharmacology (NPP) Manuscripts: Submissions During January-June, 2020," *Neuropsychopharmacology*.

McCormick.C.M [2020] "Disparities in the Toll of the COVID-19 Pandemic on Publishing: Evidence from Submissions to Hormones and Behavior," *Hormones and Behavior* 124: 104814.

Pinho-Gomes.A.C, S.Peters, K.Thompson, C.Hockham, K.Ripullone, M.Woodward and C.Carcel [2020] "Where are the Women? Gender Inequalities in COVID-19 Research Authorship", *BMJ*.

Rasul.I [2020, April] Twitter post
https://twitter.com/ImranRasul3/status/1253570537026191361.

Ribarovska.A.K, M.R.Hutchinson, Q.J.Pittman, C.Pariante and S.J.Spencer [2021] "Gender Inequality in Publishing During the COVID-19 Pandemic,", *Brain Behavior and Immunity Behavior* 91: 1-3.

Viglione.G [2020] "Are Women Publishing Less During the Pandemic? Here's What the Data Say," *Nature* 581 (7809), 365–366.

Table 1: Gender Composition of Paper Submissions

	All Submissions	All men	All women	Mixed
A. Number (%) of submissions				
Jan 1 - Dec 31 2019	1107	642 (58%)	103 (9.3%)	327 (30%)
Jan 1 - Dec 31 2020	1219 (up 10%)	670 (55%)	111 (9.1%)	393 (33%)
Mar 1 - Dec 31 2019	922	526 (57%)	87 (9.4%)	281 (30%)
Mar 1 - Dec 31 2020	1008 (up 9%)	557 (55%)	87 (8.6%)	327 (32%)

	Total #Authors	Total #Men Authors	Total #Women Authors	Total #Unknown Gender Authors
B. Number (%) of authors				
Jan 1 - Dec 31 2019	2443	1833 (75%)	554 (23%)	56 (2%)
Jan 1 - Dec 31 2020	2779 (up 14%)	2064 (74%)	640 (23%)	75 (3%)

	Man	Woman	Unknown
C. Gender of submitting author (%)			
Jan 1 - Dec 31 2019	76%	22%	2%
Jan 1 - Dec 31 2020	76%	23%	2%

Table 2: Gender Composition of Submissions, Robustness

	All men	All women	Mixed	Unknown
Number (%) of submissions				
Jan 1 - Dec 31 2019	642 (58%)	103 (9.3%)	327 (30%)	35 (3%)
Jan 1 - Dec 31 2020	670 (55%)	111 (9.1%)	393 (33%)	45 (4%)
66% threshold for identifying gender of author				
Jan 1 - Dec 31 2019	612 (55%)	93 (8.4%)	304 (27%)	98 (9%)
Jan 1 - Dec 31 2020	630 (52%)	100 (8.2%)	363 (30%)	126 (10%)
90% threshold for identifying gender of author				
Jan 1 - Dec 31 2019	529 (48%)	83 (7.5%)	265 (24%)	230 (21%)
Jan 1 - Dec 31 2020	545 (45%)	83 (6.8%)	310 (25%)	281 (23%)
95% threshold for identifying gender of author				
Jan 1 - Dec 31 2019	481 (43%)	70 (6.3%)	255 (23%)	301 (27%)
Jan 1 - Dec 31 2020	481 (40%)	71 (5.8%)	289 (24%)	378 (31%)
99% threshold for identifying gender of author				
Jan 1 - Dec 31 2019	313 (28%)	9 (1%)	100 (9%)	685 (62%)
Jan 1 - Dec 31 2020	302 (25%)	1 (1%)	97 (8%)	809 (66%)

Table 3: Author Numbers and First Decisions

	All Submissions	All men	All women	Mixed	All W/All M	Mixed/All M	DD All W - All M	DD Mixed - All M
A. Jan 1 - Dec 31 2019								
Number of authors	2.21	1.97	1.48	2.87				
Share of submissions that are single authored	25.9	34.1	61.2	0				
B. Jan 1 - Dec 31 2020								
Number of authors	2.28	2	1.43	2.95				
Share of submissions that are single authored	26.6	36.7	66.7	0				
C. Jan 1 - Dec 31 2019								
Desk rejection	.537	.523	.602	.538	115%	103%		
Reject	.410	.417	.369	.410	88%	98%		
Revise and resubmit	.052	.059	.029	.052	49%	88%		
D. Jan 1 - Dec 31 2020								
Desk rejection	.623	.615	.712	.613	116%	100%	0.018	-0.017
Reject	.292	.296	.234	.303	79%	102%	-0.014	0.014
Revise and resubmit	.045	.052	.036	.038	69%	73%	0.014	-0.007
Pending	.039	.037	.018	.046	49%	124%	-	-

Table 4: Decision Lags

	All Submissions	All men	All women	Mixed	All W/All M	Mixed/All M	DD All W - All M	DD Mixed - All M
A. Jan 1 - Dec 31 2019								
Decision lag: mean	40.4	42.2	38.5	38.4	91%	91%		
Decision lag: median	12	13	9	12	69%	92%		
Decision lag: sd	46	46.4	48.5	43.1	105%	93%		
Decision lag: mean | reject	75.6	77.2	83.1	70.4	108%	91%		
Decision lag: mean | revise	109	103	129	119	125%	116%		
B. Jan 1 - Dec 31 2020								
Decision lag: mean	33.8	35.3	26.4	33.9	75%	96%	-5.2	2.4
Decision lag: median	12	13	9	12	69%	92%	0	0
Decision lag: sd	41.4	42.6	36.7	41.5	86%	97%	-8	2.2
Decision lag: mean | reject	73.4	74.5	66.9	74.2	90%	100%	-13.5	6.5
Decision lag: mean | revise	120	120	119	125	99%	104%	-27	-11

Figure 1: Gender Composition of Submissions by Month, 2019 and 2020

A. Total Submissions, by Month
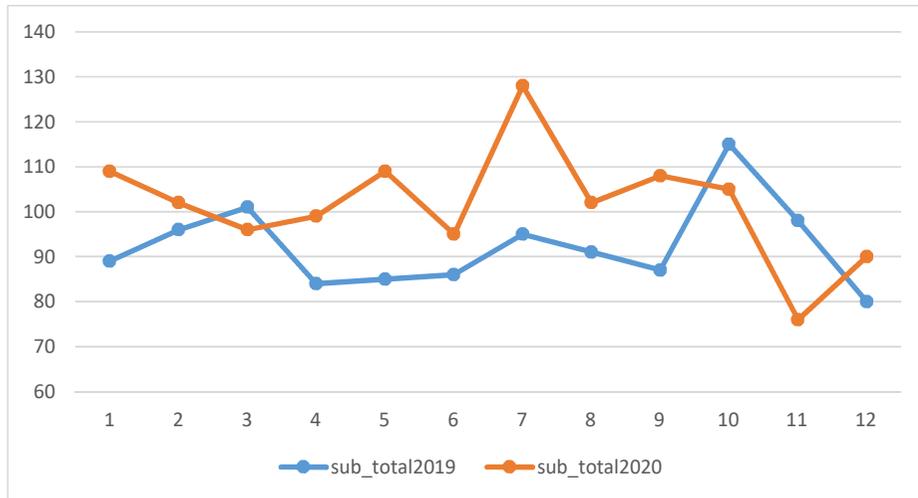
B. Share of Submissions, All Men Co-author Teams
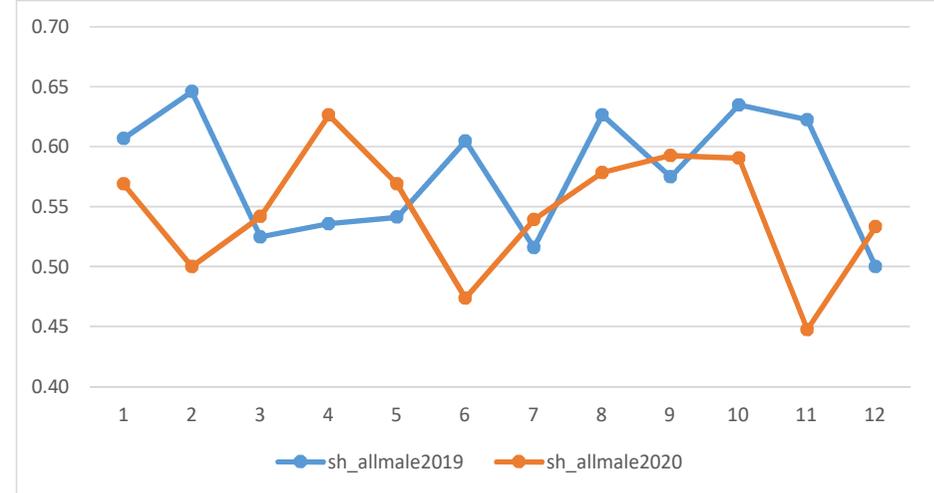
C. Share of Submissions, All Women Co-author Teams
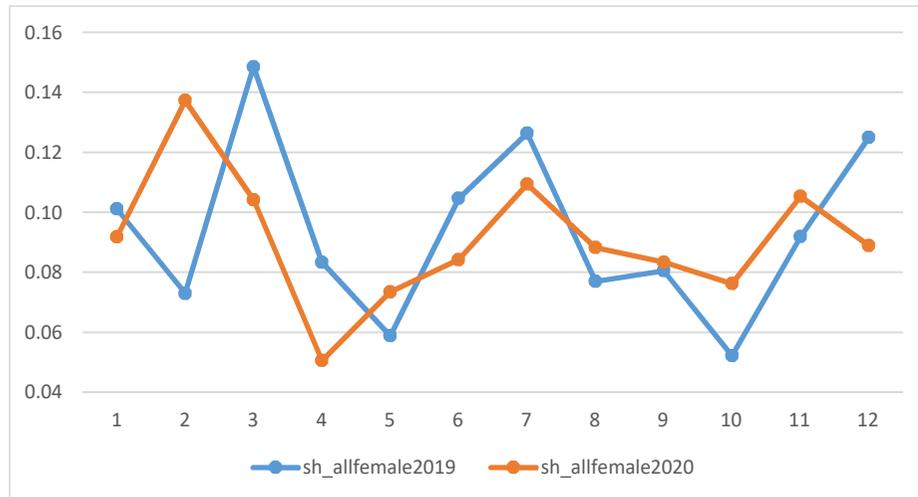
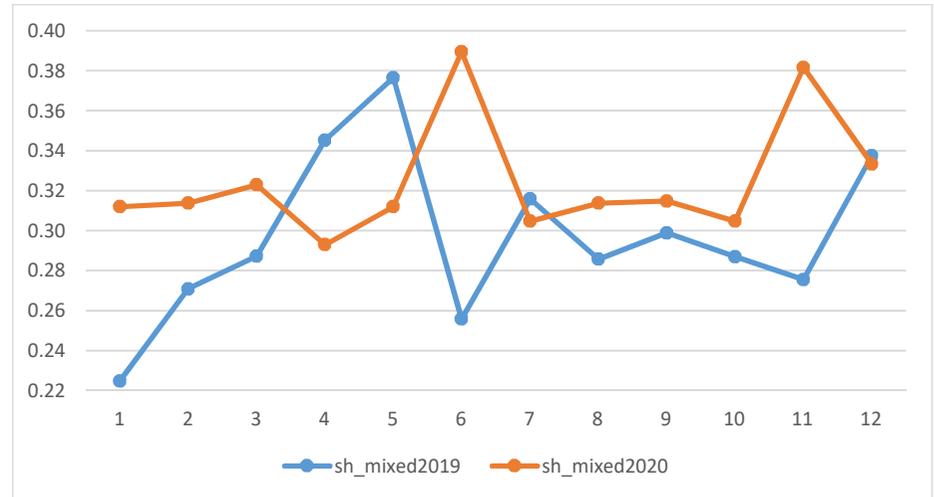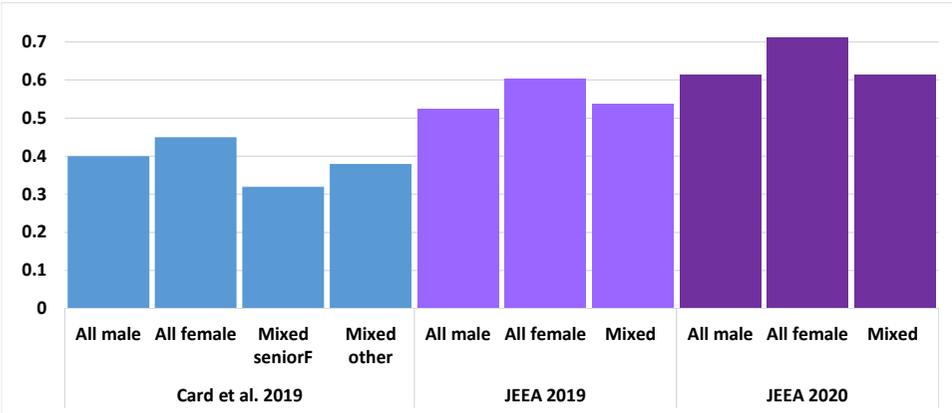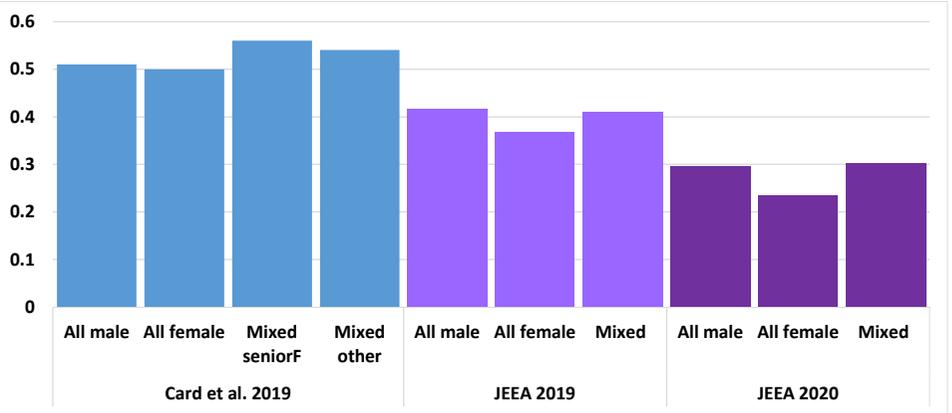D. Share of Submissions, Mixed Co-author Teams
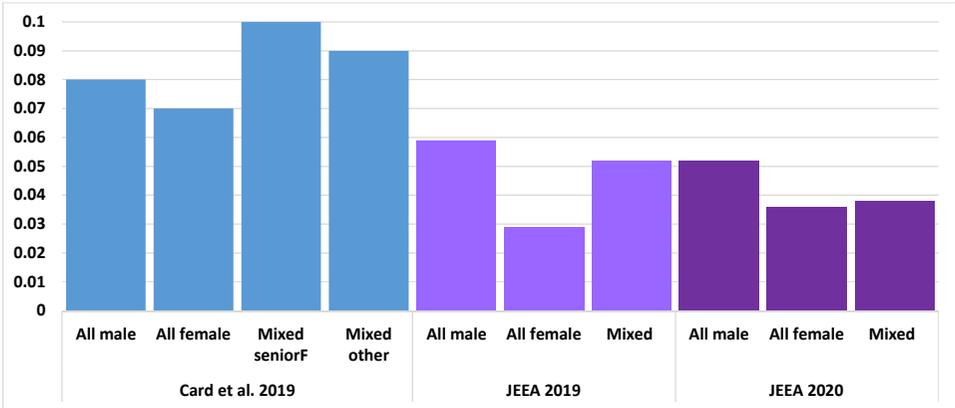
Figure 2: Comparison to Card et al. 2019
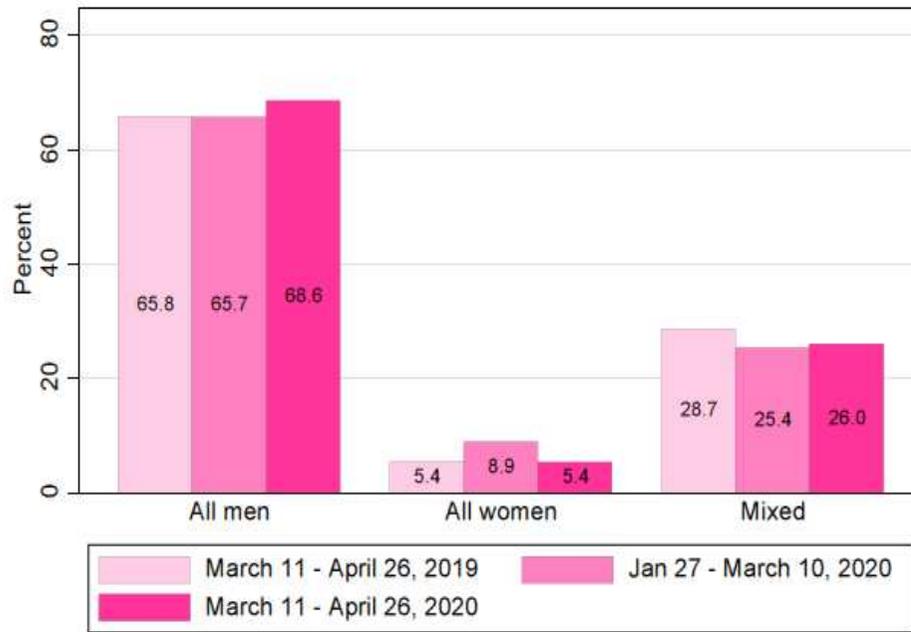
A. Desk Rejection

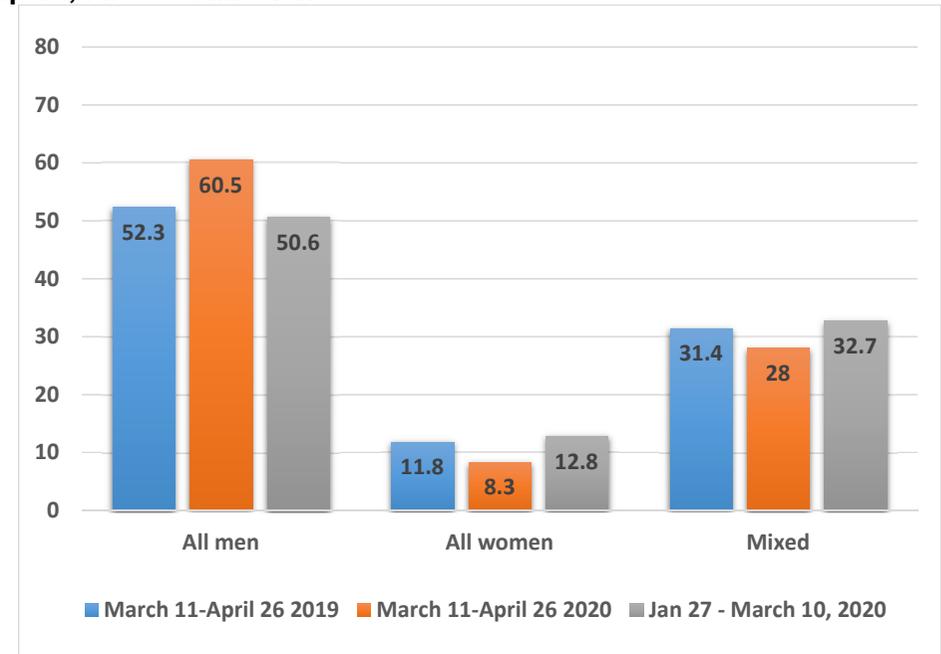

B. Reject

C. Revise

Card et al 2019 sample: JEEA, QJE, REStat, REStud
Slightly different algorithm to code gender of authors, can identify senior female

Figure 3: Comparison to RESTUD

Gender Composition of Papers, First Submissions

RESTUD

JEEA

RESTUD analysis: same algorithm as Card et al. 2019 to code gender of authors