Regional Studies

ISSN: 0034-3404 (Print) 1360-0591 (Online) Journal homepage: www.tandfonline.com/journals/cres20

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To cite this article: Gainbi Park, Rachel Franklin, Sally Hardy, Simona Iammarino & Jessie P. H. Poon (2025) Mind the gap: gender, geography and the effects of the COVID-19 pandemic on publication in Regional Studies Association (RSA) journals, Regional Studies, 59:1, 2485131, DOI: 10.1080/00343404.2025.2485131

To link to this article: https://doi.org/10.1080/00343404.2025.2485131

REGIONAL STUDIES
2025, VOL. 59, NO. 1, 2485131
https://doi.org/10.1080/00343404.2025.2485131

Mind the gap: gender, geography and the effects of the COVID-19 pandemic on publication in Regional Studies Association (RSA) journals

Gainbi Park[a], Rachel Franklin[a], Sally Hardy[b], Simona Iammarino[c,d] and Jessie P. H. Poon[e]

ABSTRACT

The impacts of the COVID-19 pandemic were deep and lasting, and the effects on research and researchers have been widely documented. This paper contributes to this literature through an investigation of the gendered and geographical impacts of the pandemic on the five Regional Studies Association (RSA) journals. With the cooperation of Taylor & Francis, the RSA's journal publisher, we generate a database of manuscripts submitted between January 2018 and December 2022. Employing gender-estimating algorithms and geographical locations of lead authors, we explore overall submission patterns over this five-year period, as well as trends in final editorial decisions by authorship characteristics, gender and geography. We find evidence that the COVID-19 pandemic temporarily depressed manuscript submissions, with heterogeneous effects depending on journal, continent and composition of authorship team. We also find strong evidence of persistent gender disparities in submission and acceptance rates that predate the pandemic, and therefore cannot be attributed solely to its effects. These findings reinforce the importance of identifying and effectively tackling persistent inequalities in academic publishing, and highlight that further action may be required in order to ensure equity and inclusivity in academic and research practices.

KEYWORDS

gender disparities; publication; collaboration; research productivity; COVID-19

JEL I23, J16

HISTORY Received 8 May 2024; in revised form 14 February 2025

1. INTRODUCTION

As COVID-19 took hold in 2020, a conversation began almost immediately that focused on how the pandemic was affecting university workers and researchers, including the immediate and longer term repercussions of work-from-home rules, the pivot to online teaching, school closures and limitations on fieldwork. The potentially uneven impacts on women were especially highlighted at the time (Fazackerley, 2020; Viglione, 2020). Four years later, analysis of actual outcomes, especially where publication is concerned, has started to appear across a range of disciplines and from a variety of perspectives. The findings have been mixed. For example, an analysis of all Elsevier journals for the early part of the pandemic (up to May 2020) found that women submitted proportionally fewer papers than men and that earlier-career women were most affected (Squazzoni et al., 2021b). In contrast, recent evidence suggests that although women represented a small share of authorship, their productivity actually increased during the pandemic (Chen & Seto, 2022). Still other publications have taken a bigger picture approach to consideration of pandemic effects on women's overall academic careers (Higginbotham & Dahlberg, 2021).

These recent pandemic-era contributions build on a longstanding body of literature that has addressed gender inequalities across a range of aspects of academic and

CONTACT Gainbi Park gainbi.park@newcastle.ac.uk
[a] Centre for Urban and Regional Development Studies (CURDS), School of Geography, Politics and Sociology, Newcastle University, Newcastle upon Tyne, UK
[b] Independent Researcher, Brighton, UK
[c] University of Cagliari, Department of Economics and Business Sciences, Cagliari, Italy
[d] The London School of Economics and Political Science (LSE), London, UK
[e] Department of Geography, University of Buffalo – SUNY, Buffalo, NY, USA

Supplemental data for this article can be accessed online at https://doi.org/10.1080/00343404.2025.2485131

research practice, including authorship (Auschra et al., 2022), representation on editorial boards and editorships (Franklin et al., 2021; Schurr et al., 2020), pay gaps (Brower & James, 2020), biases in teaching evaluations (Boring, 2017), conference and panel speaker invitations (Tulloch, 2020), and rewards for co-authorship (Sarsons, 2017). Existing research makes clear that although the pandemic may have had disproportionate effects on some groups (e.g., women and early-career researchers), the pre-existing system was, itself, already far from equitable.

The Regional Studies Association (RSA) is arguably the primary home for regional researchers across a range of academic disciplines and around the world and, as part of its remit, oversees a growing range of publications alongside other activities such as conferences and professional development. Like other learned societies, the RSA has worked over the past several years to identify inequities in funding, publication and representation and, notably, to better understand the underlying mechanisms that drive these observed inequalities (Iammarino & Prenzel, 2018). Publication is particularly important, given its key role in career progression, professional recognition and hiring. In a series of blog posts in 2019 (Holmes & Hardy, 2019a, 2019b), the RSA took up questions related to publication and reviewing in its flagship journal, *Regional Studies*. The current paper is intended in the same spirit: providing baseline data and analysis of temporal trends, with a particular focus on the potential discernible impacts of the COVID-19 pandemic.

Our research makes a contribution to the growing literature on disparities in academic publishing, especially as observed during the pandemic. It draws on a novel database containing track records of manuscript submission – including the *progress* from submission to acceptance – obtained from Taylor & Francis, the RSA journal publisher. This enables the exploration of the potential pandemic impact on the early stages of the publication process, without focusing solely on the *outcome* (i.e., published papers). Our analysis provides a recent baseline of more general submission and publication trends across five RSA journals. To achieve this goal, we analyse manuscript submission and decision trends across these five RSA journals, using data provided by Taylor & Francis, for all papers submitted between January 2018 and December 2022. We develop a manuscript database that includes geographical locations for lead authors and estimated gender for all authors on each manuscript. This enables us to investigate authors' gender and geographical distribution in manuscript submission and to trace the final decision outcome, that is, whether an article is accepted or rejected. The primary aim of this analysis is to examine the effects of the pandemic on publication trends in RSA journals, especially where gender and location are concerned. Importantly – and unusually for many studies of this nature – with this database, we are able to focus on manuscript *submissions* and not merely observed differences in *publication*. Specifically, we address the following research questions, with an emphasis on the patterns associated with manuscript submission and decision outcomes. For each RSA journal, we explore three aspects of research productivity: how the number of submissions changed before, during and after the pandemic; whether there are observed changes in submission trends among different author types (i.e., solo male/female, mixed-gender teams and all-male/female teams) and by location; and how manuscript decision trends evolved over the study period, with a focus on the pandemic period.

The remainder of the paper is organised as follows. The next section overviews the existing literature on inequalities in academia and the effects of the pandemic. Section 3 outlines the data and descriptive analysis approach. Sections 4 and 5 provide results and a discussion, respectively. Section 6 concludes.

2. LITERATURE REVIEW

2.1. Gender inequities across the research landscape

Gender influences every aspect of life, including across the academic and research landscape. A large and growing body of literature discusses gender inequalities in research productivity, from a variety of perspectives. For example, numerous studies suggest that there have been systemic gender disparities in all stages of knowledge production, ranging from the peer-review process (Helmer et al., 2017) and grants and funding (Hechtman et al., 2018; Lawson et al., 2021) to research collaboration and publication authorship (Auschra et al., 2022; Teele & Thelen, 2017). In addition, women are often underrepresented in academia in many disciplines, due in part to gendered childcare responsibilities. The gender disparity in academic publishing productivity has persisted for decades, with female researchers historically tending to publish fewer papers than their male colleagues, contributing to lower citation impact (Cole & Zuckerman, 1984). In addition, female academics often have less involvement in journal editorial boards, receive less competitive research funding and are more frequently employed on a casual or short-term basis, collectively limiting their research productivity (Stack, 2004). This productivity (and recognition) gap presents a longstanding unresolved challenge.

Publication is often regarded as a key criterion in academic research performance evaluation. The gendered dynamics in publication encompass multiple layers of under-representation, including journal article submission and acceptance rates, key authorships roles (such as first, corresponding and solo authors), co-authorship and even citation patterns. The gendered publication patterns are observed in a multifaceted way across disciplines. Recent evidence suggests that female academics submit relatively fewer manuscripts than their male counterparts, on average, despite the increasing number of women research professionals. There is also a notable underrepresentation in the share of primary authorship articles by female authors and in top-tier journals (Chen & Seto, 2022; Djupe et al., 2019; Teele & Thelen, 2017). For example,

in the field of urban land science, only 27.6% of the published papers had women as first authors (Chen & Seto, 2022). A comprehensive study by Son and Bell (2021), which analysed submission patterns across 145 multidisciplinary journals between 2010 and 2016, found disproportionately lower submission rates from female authors across various disciplines, particularly in first and last author positions: 19.1% in physical sciences, 27.7% in life sciences, 31.5% in biomedicine and health, and 38% in social sciences and humanities.

In a broader sense, these gendered dynamics within the academic publication landscape are not solely due to individual researchers' productivity but also include external factors at play, such as gender imbalance in gatekeeping practices. The bodies of 'arbiters' in journals – that is, editors and editorial boards – have a substantial influence in the entire cycle of publication and the research landscape, including the direction of journals, peer-review processes and manuscript acceptance or rejection decisions – termed '*admission gatekeeping*' (Schurr et al., 2020). Consequently, this leads to another barrier, inclusion gatekeeping, where individual researchers selectively choose whose work to cite and engage with, and whom to exclude based on their preferences or biases. These gatekeeping practices ultimately play an important role in shaping the mainstream production of intellectual work within academic disciplines (Franklin et al., 2021; Hedding & Breetzke, 2021; Schurr et al., 2020).

Academic research collaboration has become an integral part of research productivity, as evidenced by the continued growth in multiple-authored papers across various disciplines. However, co-authorship introduces another aspect of gender inequity in publication patterns. The majority of co-authored papers are produced by all-male teams, whereas all-female teams represent only marginal shares of journal articles, despite increasing cross-gender collaborations within the research community (Djupe et al., 2019; Teele & Thelen, 2017). The gender gap in collaborations also manifests in the way credit is attributed among collaborators and co-authors. Women often receive less recognition or less favourable evaluations than their male colleagues from co-authored papers, wherein differential credit attribution results in inequitable academic career progression, such as tenure and promotion (Gërxhani et al., 2023; Sarsons et al., 2021). This can be observed in citation practices, where male-authored work receives more credit and is considered more central, being cited more frequently than women's work (i.e., the Matthew effect that highlights cumulative advantage). The 'legacy of gender disparity' within academia further contributes to the citation gap (Peterson, 2018, p. 338), as older canonical works are predominantly written by male authors from many decades ago. This dominance reinforces male-dominated citation networks, potentially resulting in fewer opportunities for female researchers' work to be cited, further perpetuating existing underrepresentation and citation gaps. Notably, even in disciplines dominated by female scholars, citation gaps persist (Dion et al., 2018).

Another factor found to contribute to gendered citation patterns is self-citation behaviour: women tend to cite men's work more often than their own, whereas men are more likely to cite themselves (Maliniak et al., 2013). Furthermore, women's research contributions tend to be less recognised, and in some cases their findings and credit are attributed to other male scholars, further diminishing the scholarly impact of their work. This phenomenon is referred to as the 'Matilda' effect (Dion & Mitchell, 2020; Maliniak et al., 2013). The imbalanced recognition or relative invisibility of women's work is partly rooted in structural impediments, such as male-dominated professional research networks, as well as smaller audiences working on niche topics, both of which shape citation practices (Auschra et al., 2022; Chatterjee & Werner, 2021).

Institutionalised gender inequities in academia are also intertwined with geography (Huang et al., 2020). Several studies have illuminated the intersection of gender and geography in authorship, revealing that there were more men in primary authorship positions (the first or last author, a convention in scientific fields often indicating the lead principal investigator) than their counterparts on nearly every continent (Merriman et al., 2021; Morgan et al., 2019; Rinaldo et al., 2023; Yao et al., 2022). In terms of global academic knowledge production, in general, papers from low- and middle-income countries (LMICs) are underrepresented in terms not only of sheer numbers but also of female representation. As evidenced by Chen and Seto (2022), the majority of publications in urban land science (93%) are authored by researchers affiliated with Asia, North America and Europe, while only a marginal percentage of publications originate from Africa, South America and Oceania (2–3% each). Gender inequities are particularly pronounced in Africa, where women account for just 14% of first authors. Similarly, Yao et al. (2022) highlighted gendered authorship patterns in global health journals across World Bank income groups, showing that 45.9% of female authors are from high-income countries and 43.4% from upper-middle-income countries, compared with only 28.2% from LMICs.

The preponderance of high-income countries in academic publication is interlocked with the cycle of knowledge production and a broader mechanism, which involves market monopolisation and commodification. In particular, high subscription fees and article-processing charges (APCs) potentially hinder accessibility to major publishers for those based in LMICs. This geographical imbalance fosters an academic dependence on the publications from resource-wealthy countries (e.g., the United States and Western European countries, and some East Asian countries), with their products serving as the principal source of publishable knowledge. Meanwhile, intellectual works and knowledge from their counterparts are positioned as 'subcontractors', ultimately penalising academics in LMICs (Collyer, 2018). Kloß (2017) also highlights the invisible academic hierarchy in scientific knowledge in which Western knowledge is considered as the leading and influential mainstream among academic

communities, whereas 'marginalized and subalternized nodes' (p. 9) are considered to be on the fringe of knowledge or simply chasing the mainstream. These complex mechanisms play a role in geographical disparities and in the imbalances between the LMICs and resource-wealthy countries.

The internationalisation of academic publications is another factor sustaining the global dominance of English-speaking countries (Collyer, 2018). Given that English is the most common language in research publication and communication, it poses a particular challenge for certain groups in non-English-speaking countries, especially when writing qualitative research papers (compared with papers that use the universal language of statistics and mathematics) (Hedding & Breetzke, 2021; Poon, 2003).

In summary, the mechanisms behind academic publishing systematically reproduce inequalities in knowledge production in non-Anglophone LMICs, hampering the visibility of their work in flagship journals. These geographical barrier further intersect with gender, contributing to the underrepresentation of female researchers across disciplines in non-Anglophone LMICs (Memon et al., 2022).

2.2. Pandemic impacts on research publication

More recently, the impact of the COVID-19 pandemic on academic publication has become a subject of considerable discussion, especially in light of pre-existing differences in research productivity between male and female academics. The findings are mixed regarding whether the pandemic imposed an additional 'penalty' on women. Many recent studies have shown that women's research productivity decreased during the pandemic, particularly in its early stages, resulting in fewer papers published or submitted by female authors and female teams (Cui et al., 2022). In addition, there was an observable decline in women's representation in primary authorship positions (King & Frederickson, 2021; Lerchenmüller et al., 2021; Muric et al., 2021; Pinho-Gomes et al., 2020). These studies reinforce the presupposition of a disproportionate pandemic impact on women's research productivity. On the other hand, Chen and Seto (2022) reached different conclusions, finding an increase in women's publication rate compared with men's during the pandemic. Similarly, in some fields, there have been no pandemic effects observed within publication patterns (Jemielniak et al., 2023), although slowed submission trends have been observed (Son & Bell, 2022). It is likely that at least some of the observed differences in outcome are due to variations in disciplinary practice and characteristics.

Several studies have shown that global lockdowns and stay-at-home orders exacerbated gender inequities in scholarly publishing trends. The intersection of gender and geography has come to the forefront in these discussions, highlighting how COVID-19 intensified gender disparities in first authorship and the number of publications by female researchers across almost all countries (Lerchenmüller et al., 2021; Muric et al., 2021). Conversely, Pinho-Gomes et al. (2020) found no notable geographical variation in the percentage of women in primary authorship across continents. However, geographical disparities have become apparent in terms of the relative representation of female authors, with the lowest percentages in Africa and Oceania, followed by Europe, Asia and America (Pinho-Gomes et al., 2020). Since each country experienced different lockdowns with varying start and end dates, it may be challenging to observe pronounced geographical variations and make comparisons between countries on a global scale.

Overall, the existing research on gender and geographical disparities in academic publishing demonstrates the value of data and documentation: without baseline numbers, establishing disparities (and their evolution over time) is especially difficult. Existing research also highlights the value of investigating the particular case of regional studies and RSA journals. Without evidence, it is difficult to enact change or understand how regional studies compares to other disciplines. This paper fills these gaps by assembling a database that spans five years (2018–22), covering pre-pandemic, pandemic and post-pandemic years, evaluating submission and publication trends across five RSA journals, and assessing the impact of the COVID-19 pandemic.

3. DATA AND METHODS

3.1. Data

The RSA currently publishes six journals – *Regional Studies*; *Spatial Economic Analysis* (SEA); *Territory, Politics, Governance* (TPG); *Regional Studies, Regional Science* (RSRS); *Area Development and Policy* (ADP); and *Finance and Space*.[1] These journals cover a wide range of topics in regional studies, regional science and multidisciplinary fields, encompassing economics, geography, territorial politics, planning, etc. For our study, we exclude *Finance and Space*, which was only founded in 2023.

The RSA journals published by Taylor & Francis use the ScholarOne online submission system to track information on manuscript status and author details, including names and the institutional affiliation of authors. Taylor & Francis provided information for all manuscripts submitted for peer-review between January 2018 and December 2022. This data came as two tables: one providing manuscript-level data, including date of submission and final decision; the other with names and countries of all authors across all manuscripts. These tables can be linked by a unique manuscript ID (Table 1). The raw data include detailed records about manuscript submission and author information listed in each manuscript. Ethics approval was sought and given by Newcastle University and information was securely stored to protect sensitive data. Once the gender and geography variables were created, the data were anonymised for all subsequent analysis. This dataset is novel as it includes all submissions, regardless of the outcome, and not only published papers. This provides additional insight into the impact on academic research productivity during the pandemic. In total,

Table 1. Database structure and variables.

Manuscript information	Author information
Journal acronym and unique manuscript ID	Associated manuscript IDs
Submission date (yyyy-mm-dd)	Author IDs
Final decision: accepted, rejected, withdrawn, revision overdue, pending (i.e., no decision)	Names (for attributing gender)
Final decision date	Authorship attribution for each manuscript (e.g., lead author)
Number of revisions to final decision	Country

there are 7858 manuscript submissions with 27,323 unique authors[2] across all RSA journals in this period.

Because self-reported gender was not collected at the time of submission, a gender-attribution algorithm[3] using author names was employed to predict the gender of all authors in the author file. In common with other similar research (e.g., Chen & Seto, 2022; Son & Bell, 2021), the algorithms employed generate only binary gender (female/male) outcomes. The predicted gender information serves as the foundation for pairing gender and authorship to further explore the gendered dynamics in submission and decision trends by authorship categories. Because collaborative research and multiple authorship have become increasingly common among academics and institutions (Hunter & Leahey, 2008), we also explore the degree of cross-gender collaboration, along with geographical variations in lead authorship.

In this study, we analyse and present our data through a quantitative feminist approach, specifically adopting *feminist visualisation* to enrich discussion of gendered patterns in research productivity across space and over time in manuscript submissions during the pandemic crisis (Kwan, 2002; McLafferty, 1995). This critical practice aligns with feminist empiricism (Blickenstaff, 2005), enabling us to develop a nuanced understanding of differences or inequities in knowledge production and the geographies of the body (Kwan, 2002; Sheppard et al., 2023). However, since our analysis relies on gender binaries, our findings are subject to generalisation and 'partial' knowledge, providing a limited representation of gender identities (Sultana, 2017). We acknowledge that this limitation may not be fully representative of diversity in the gender spectrum within academic communities and hope this study serves as a stimulus for improving the collection

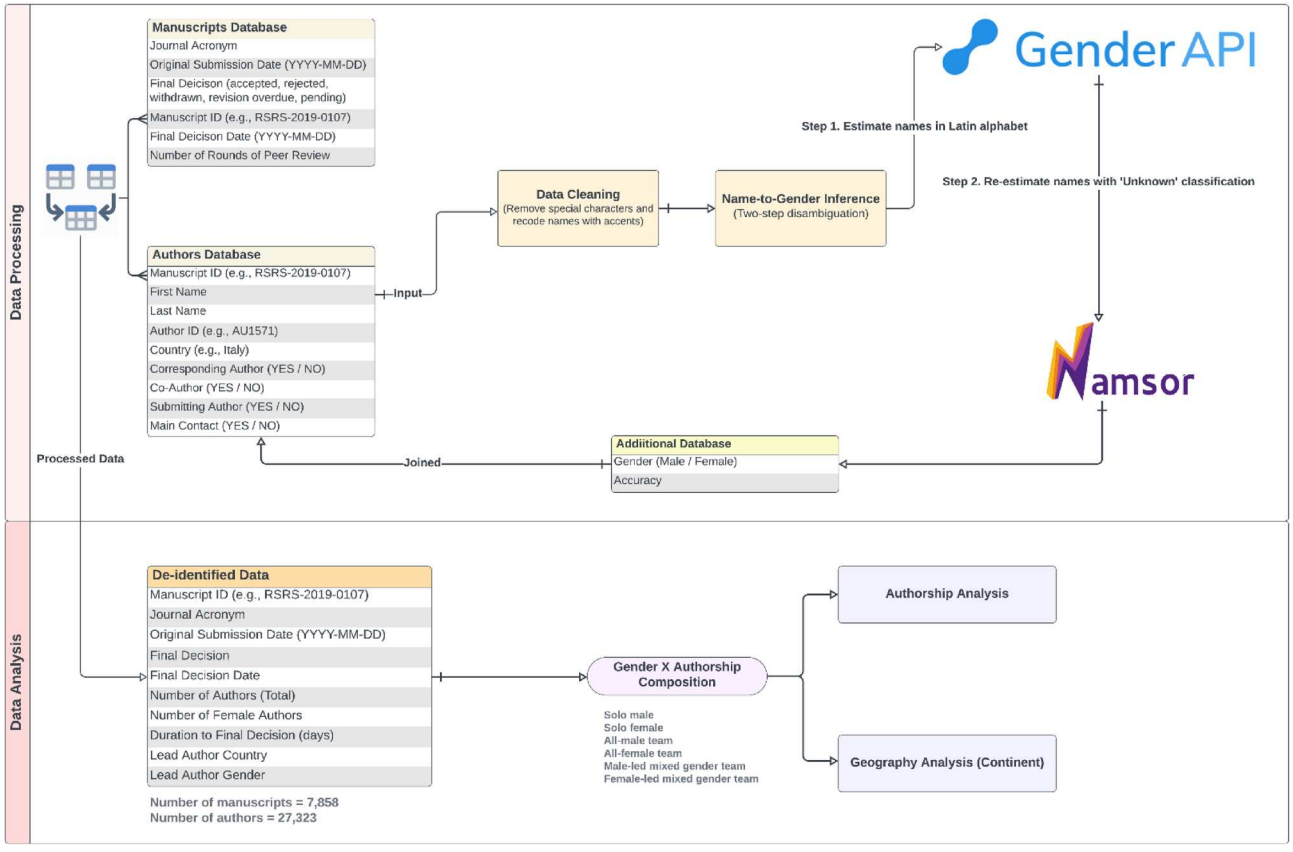

Figure 1. Data analysis and gender identification workflow.

and monitoring of equity and diversity data in the publication process.

3.2. Methods

We employ a two-step approach using name-to-gender inference application programming interfaces (APIs) to estimate authors' gender based on their first names. A major advantage of these APIs is their straightforward implementation, enabling fast and efficient data-processing for a large number of records. This is possible because the algorithms rely on extensive data from public social media profiles, government databases and other sources for gender prediction (Chen & Seto, 2022). Among various gender detection tools, Gender API and Namsor API have demonstrated the highest accuracy in performance tests and the broadest coverage for Chinese names (Sebo, 2021). Therefore, this study chose to utilise these two APIs simultaneously for inferring the gender of authors.

As an initial step, the raw data were cleaned to enhance the overall accuracy of gender prediction by recoding names with accents (e.g., Sørina, Félice, Chloë, Adrián) to their Romanised forms. Subsequently, we implemented the Gender API to predict gender and scrutinise overall accuracy. If a name had an accuracy score below a certain threshold (80%), which was most common with Chinese names using pinyin (i.e., Mandarin Chinese in Roman letters) in the database, we employed the Namsor API as a second step. Finally, we obtained predicted female/male gender from both APIs for all authors, and these results were appended to the author-level data. All authors were assigned a gender, aside from the lead authors of 26 manuscripts. These were not assigned a gender from the APIs, resulting in them being labelled as 'unknown', possibly due to their gender-neutral or unique names not found in the algorithm databases. It is important to bear in mind that the results from the APIs might vary each time the algorithm is run, potentially resulting in slight changes to gender attribution (Namsor, 2018). Of the 7832 submissions with gender attached, 5392 were male-led (68.8%) and 2440 were female-led (31.2%). This series of data-processing steps generated several additional variables, including the number of authors for each article, number of female authors, lead author's country and lead author's gender.

After creating the manuscript-level dataset with gender and geography variables, we conducted a descriptive analysis to assess the representation of female academics by 'authorship constellations' for each journal across each year (Auschra et al., 2022; Rigg et al., 2012; Williams et al., 2018). We created six authorship categories: solo male, solo female, all-male team, all-female team, male-led mixed-gender team and female-led mixed gender team. For example, a paper is classified as a male-led mixed-gender team if it includes at least one female collaborator, with the lead author being male. These gender compositions enable us to gain a detailed understanding of changes in submission and final decision trends across these groups. In terms of geographical analysis, we aggregated the countries of the lead authors by continent rather than conducting country-specific analyses to provide a broader perspective on gendered geography in women's research productivity. The overall procedure for data-processing and analysis is illustrated in Figure 1.

4. RESULTS

4.1. General trends in overall submissions in all RSA journals, 2018–22

More manuscripts were submitted to RSA journals during the pandemic period, with a 52% increase in 2020 compared with 2018 and a 31% increase in 2020 compared with 2019 (Figure 2). In 2021, submissions only saw a slight decline – in line with a potential pandemic slump – followed by another increase in submissions in 2022. During the early post-pandemic period in 2022, the submission rate was at its highest level since 2018, albeit not as high as the 2018–20 trend might have suggested.

Table 2 shows the breakdown of overall submissions across RSA journals. In all years, *Regional Studies* received the majority share of submissions – over 60% of all submissions to RSA journals – although this drops slightly from 2020 onwards. For *Regional Studies*, there is no indication of a pandemic slump in submissions; in fact, the number climbs steadily every year, although perhaps not as much as it would have had the pandemic not occurred. The other four journals see large jumps in 2020, suggesting that the early pandemic had the effect of increasing submissions. In 2021, however, there is a slump in submissions in *SEA*, *TPG* and *RSRS*, possibly reflecting a delayed impact in research productivity. That is, manuscripts submitted in 2020, after the onset of the pandemic, were likely already nearing completion, suggesting a need to look ahead to 2021–23 to observe any deferred impacts or long-term repercussions (Chen & Seto, 2022; Fox & Meyer, 2021). Indeed, by 2021, the effect of researchers not being able to start *new* research begins to be seen. By 2022, *Regional Studies* and *SEA* appear to have recovered, with submission levels higher than in 2018. In contrast, *TPG* increased from 2021, but at a level that remains lower than 2020. *RSRS*, however, appears to have experienced a delayed pandemic effect, with 2022 submission levels lower than either 2020 or 2021. Similarly, *ADP* only appears potentially affected by the pandemic in 2022, with year-on-year increases in submissions up until then.

4.2. Submission trends by authorship type and continent

Digging deeper into submission trends, we next break down submissions for each journal by authorship type and gender. Figure 3 shows how authorship type varies over time, as explained in more detail below.

4.2.1. Regional Studies

In terms of co-authorship, a preponderance of submissions consistently comes from all-male teams and male-led mixed-gender teams throughout the study period (Figure 3

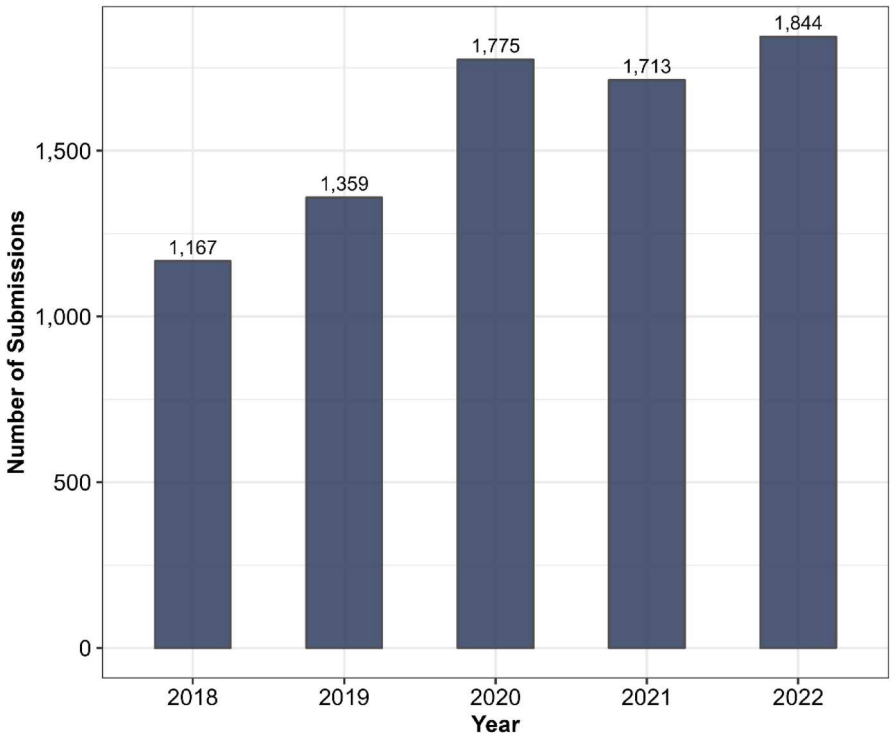

Figure 2. Total annual submissions of new manuscripts to all RSA journals, 2018–22.

and Table 3). That said, female authors are increasingly involved in collaborative production by participating in either male-led mixed-gender teams, all-female teams or mixed gender teams. Submissions from female-led mixed-gender teams have been increasing since 2018. However, there is a slight proportional decline in submissions from 2021 to 2022 compared with previous years. This is in contrast to the proportional increase in submissions from male-led mixed gender teams. These results indicate that the regional studies community is, albeit perhaps slowly, transitioning towards a higher share of female researchers (i.e., female doctoral students and early-career researchers become more senior and increasingly take on research leadership roles). The slight decline we see from 2021 to 2022 is consistent with these women being, hopefully only temporarily, slowed by the burdens of the pandemic.

Where solo-authored submissions are concerned, submissions from both solo female authors and solo male authors have been steadily declining since 2018 and are well below the rates of all-male and male-led co-authored submissions. Submissions from solo male authors experienced a higher rate of decline than solo female authors, particularly since 2020. However, across all years, their share of submissions has remained approximately double that of solo female authors. Across all co-authorship categories, all-female teams have maintained by far the lowest level of submissions, reinforcing previous findings on

Table 2. Total annual submissions of new manuscripts across RSA journals, 2018–22.

Journal	2018 *N* (% of total RSA submissions)	2019 *N* (% of total RSA submissions)	2020 *N* (% of total RSA submissions)	2021 *N* (% of total RSA submissions)	2022 *N* (% of total RSA submissions)
Regional Studies	747 (64.0%)	890 (65.5%)	1070 (60.3%)	1092 (63.7%)	1176 (63.8%)
Spatial Economic Analysis	144 (12.3%)	146 (10.7%)	185 (10.4%)	124 (7.2%)	191 (10.4%)
Territory, Politics, Governance	121 (10.4%)	157 (11.6%)	276 (15.5%)	238 (13.9%)	248 (13.4%)
Regional Studies, Regional Science	91 (7.8%)	103 (7.6%)	133 (7.5%)	131 (7.6%)	110 (6.0%)
Area Development and Policy	64 (5.5%)	63 (4.6%)	111 (6.3%)	128 (7.5%)	119 (6.5%)
Total	1167 (100.0%)	1359 (100.0%)	1775 (100.0%)	1713 (100.0%)	1844 (100.0%)

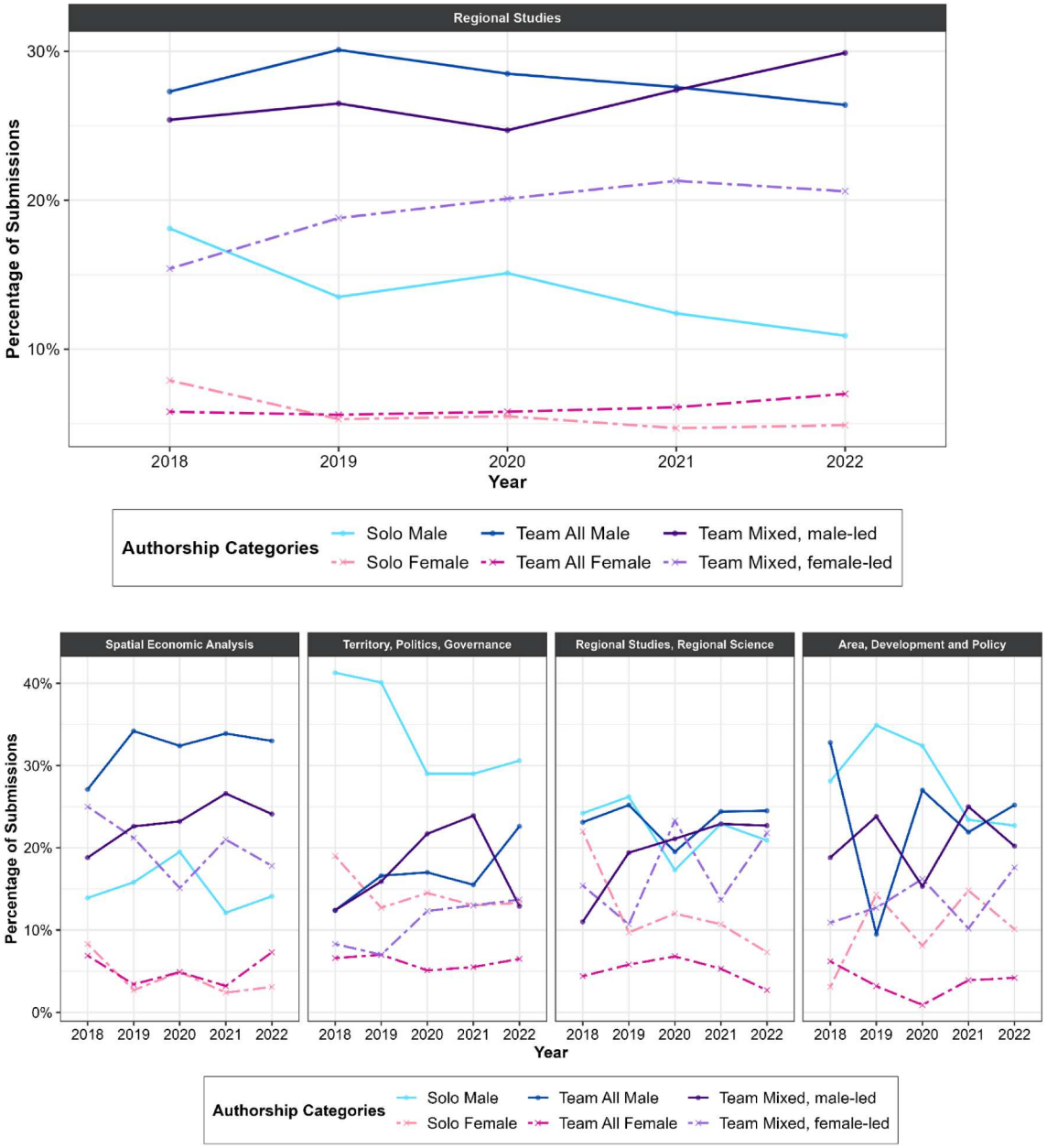

Figure 3. Total annual manuscript submissions by authorship type, 2018–22.
Note: The *y*-axis represents the percentage of annual journal submissions for each RSA journal.

gender differences in collaboration. This disparity is attributed not only to differences in individuals' collaboration and publication behaviours but also to the relative scarcity of women's clubs compared with 'old boy networks' (Auschra et al., 2022; Djupe et al., 2019; McDowell et al., 2006; Teele & Thelen, 2017; Young, 1995).

4.2.2. Spatial Economic Analysis (SEA)

The overall trends for *SEA* are similar to those observed for *Regional Studies*, with all-male teams dominating submissions, followed by male-led mixed gender teams, female-led mixed gender teams, solo male authors, all-female teams and, lastly, solo female authors. The share of authors that are male was 71.2% in 2022 – the highest prevalence of male authors across all RSA journals. In 2021, solo female authors submitted only three papers, while all-female teams submitted four papers, marking the lowest submission counts across all journals for that year (Table 3). Notably, between 2020 and 2021, the number of submissions in every authorship category decreased, from 185 to 124 submissions (Table 3). This appears to clearly demonstrate pandemic effects that impacted all authorship groups. Increases in the share of submissions from teams of authors between 2020 and 2021 may also indicate ways in which collaborative research was more robust to pandemic effects than solo research, whether male or female (or a deliberate strategic pivot across teams to maintain productivity). In 2022, overall submissions increased, recovering from this temporary setback.

Table 3. Total annual manuscript submissions across RSA journals by authorship type, 2018–22.

Journal	2018 *N* (% of journal total annual submissions)	2019 *N* (% of journal total annual submissions)	2020 *N* (% of journal total annual submissions)	2021 *N* (% of journal total annual submissions)	2022 *N* (% of journal total annual submissions)
Regional Studies (total)	747 (100.0%)	890 (100.0%)	1,070 (100.0%)	1,092 (100.0%)	1,176 (100.0%)
Solo male	135 (18.1%)	120 (13.5%)	162 (15.1%)	135 (12.4%)	128 (10.9%)
Solo female	59 (7.9%)	47 (5.3%)	59 (5.5%)	51 (4.7%)	58 (4.9%)
Team all male	204 (27.3%)	268 (30.1%)	305 (28.5%)	301 (27.6%)	310 (26.4%)
Team all female	43 (5.8%)	50 (5.6%)	62 (5.8%)	67 (6.1%)	82 (7.0%)
Team mixed, male led	190 (25.4%)	236 (26.5%)	264 (24.7%)	299 (27.4%)	352 (29.9%)
Team mixed, female led	115 (15.4%)	167 (18.8%)	215 (20.1%)	233 (21.3%)	242 (20.6%)
Team mixed, unknown lead author[a]	1 (0.1%)	2 (0.2%)	3 (0.3%)	6 (0.5%)	4 (0.3%)
Spatial Economic Analysis (total)	144 (100.0%)	146 (100.0%)	185 (100.0%)	124 (100.0%)	191 (100.0%)
Solo male	20 (13.9%)	23 (15.8%)	36 (19.5%)	15 (12.1%)	27 (14.1%)
Solo female	12 (8.3%)	4 (2.7%)	9 (4.9%)	3 (2.4%)	6 (3.1%)
Team all male	39 (27.1%)	50 (34.2%)	60 (32.4%)	42 (33.9%)	63 (33.0%)
Team all female	10 (6.9%)	5 (3.4%)	9 (4.9%)	4 (3.2%)	14 (7.3%)
Team mixed, male led	27 (18.8%)	33 (22.6%)	43 (23.2%)	33 (26.6%)	46 (24.1%)
Team mixed, female led	36 (25.0%)	31 (21.2%)	28 (15.1%)	26 (21.0%)	34 (17.8%)
Team mixed, unknown lead author	–	–	–	1 (0.8%)	1 (0.5%)
Territory, Politics, Governance (total)	121 (100.0%)	157 (100.0%)	276 (100.0%)	238 (100.0%)	248 (100.0%)
Solo male	50 (41.3%)	63 (40.1%)	80 (29.0%)	69 (29.0%)	76 (30.6%)
Solo female	23 (19.0%)	20 (12.7%)	40 (14.5%)	31 (13.0%)	33 (13.3%)
Team all male	15 (12.4%)	26 (16.6%)	47 (17.0%)	37 (15.5%)	56 (22.6%)
Team all female	8 (6.6%)	11 (7.0%)	14 (5.1%)	13 (5.5%)	16 (6.5%)
Team mixed, male led	15 (12.4%)	25 (15.9%)	60 (21.7%)	57 (23.9%)	32 (12.9%)
Team mixed, female led	10 (8.3%)	11 (7.0%)	34 (12.3%)	31 (13.0%)	34 (13.7%)
Team mixed, unknown lead author	–	1 (0.6%)	1 (0.4%)	–	1 (0.4%)
Regional Studies, Regional Science (total)	91 (100.0%)	103 (100.0%)	133 (100.0%)	131 (100.0%)	110 (100.0%)
Solo male	22 (24.2%)	27 (26.2%)	23 (17.3%)	30 (22.9%)	23 (20.9%)

(*Continued*)

Table 3. Continued.

Journal	2018 *N* (% of journal total annual submissions)	2019 *N* (% of journal total annual submissions)	2020 *N* (% of journal total annual submissions)	2021 *N* (% of journal total annual submissions)	2022 *N* (% of journal total annual submissions)
Solo female	20 (22.0%)	10 (9.7%)	16 (12.0%)	14 (10.7%)	8 (7.3%)
Team all male	21 (23.1%)	26 (25.0%)	26 (19.5%)	32 (24.4%)	27 (24.5%)
Team all female	4 (4.4%)	6 (5.8%)	9 (6.8%)	7 (5.3%)	3 (2.7%)
Team mixed, male led	10 (11.0%)	20 (19.4%)	28 (21.1%)	30 (22.9%)	25 (22.7%)
Team mixed, female led	14 (15.4%)	11 (10.7%)	31 (23.3%)	18 (13.7%)	24 (21.8%)
Team mixed, unknown lead author	–	3 (2.9%)	–	–	–
Area Development and Policy (total)	64 (100.0%)	63 (100.0%)	111 (100.0%)	128 (100.0%)	119 (100.0%)
Solo male	18 (28.1%)	22 (34.9%)	36 (32.4%)	30 (23.4%)	27 (22.7%)
Solo female	2 (3.1%)	9 (14.3%)	9 (8.1%)	19 (14.8%)	12 (10.1%)
Team all male	21 (32.8%)	6 (9.5%)	30 (27.0%)	28 (21.9%)	30 (25.2%)
Team all female	4 (6.2%)	2 (3.2%)	1 (0.9%)	5 (3.9%)	5 (4.2%)
Team mixed, male led	12 (18.8%)	15 (23.8%)	17 (15.3%)	32 (25.0%)	24 (20.2%)
Team mixed, female led	7 (10.9%)	8 (12.7%)	18 (16.2%)	13 (10.2%)	21 (17.6%)
Team mixed, unknown lead author	–	1 (1.6%)	–	1 (0.8%)	–

Note: Each journal sums to 100% annually. The number of manuscripts by authorship type was divided by the total annual submissions for each respective journal.
[a]The number of authors was multiple (more than two); however, the lead author's gender was not predicted, even with a two-step gender estimation approach.

Although there is no clear gender difference in the potential impacts of the pandemic, male-led and all-male teams have increased as a share of total submissions between 2018 and 2022 (albeit with slight decreases in 2021–22), perhaps due to a lack of capacity on the part of women researchers to lead or contribute on papers (Figure 3). Solo male submissions, which peaked in 2020 and subsequently fell sharply in 2021, are roughly back where they were in 2018, as a share of total submissions. Solo female papers, in contrast, have substantially declined as a share of total submissions over this period and have yet to fully recover. All-female teams have only in 2022 recovered to 2018 levels.

4.2.3. Territory, Politics, Governance (TPG)

TPG attracts relatively more submissions from solo authors of both genders, although this trend has been decreasing over time, as a share of total annual submissions (Figure 3). This observed pattern could be attributable to the characteristics of the journal, serving as a platform for a broad range of disciplines, particularly those involving political aspects. According to Metz and Jäckle (2017), single authorship is the prevailing practice in political science, and this disciplinary trend could have been one factor that attracts more single-author submissions compared with other RSA journals. There exists a persistent gender gap between the share of solo male and solo female authors, with men's outnumbering women's by at least 2:1. For instance, in 2018, 41.3% of the submissions came from solo male authors and 19% came from solo female authors. In contrast, for *Regional Studies* the corresponding figures were roughly half that – 18.1% and 7.9%, respectively – indicating the wider range of author-types of submissions received by *Regional Studies*, as well as a similarity in gap between solo male and solo female author submissions.

Between 2020 and 2022, we observe potential pandemic impact within three authorship groups: all-male teams (a slight decline in 2020–21, followed by a sharp rebound in 2022), solo male authors (a steep decline in 2020, followed by very modest recovery) and solo female authors (a slight increase in 2020, followed a slight

decrease). Prior to the pandemic, all-male teams and solo male authors were experiencing year-over-year growth. However, during the pandemic these groups saw declines in both absolute terms and growth rates. They then showed evidence of recovery in 2022. In addition, in 2021, all-male teams accounted for 15.5% of submissions, whereas male-led mixed gender teams constituted 23.9% of submissions. However, in the early post-pandemic period of 2022, this trend reversed, with all-male teams becoming the dominant co-authorship group.

4.2.4. Regional Studies, Regional Science (RSRS)

Within *RSRS*, the authorship distribution was fairly diverse in 2018, with solo male authors, solo female authors and all-male teams each contributing approximately 20% of the submissions. Since then, solo female author submissions have dropped in 2022 by more than half from their 2018 peak. Meanwhile, all-male teams and solo male authors have maintained relatively stable trends, with solo male submissions experiencing a steep decline in their share of submissions in 2020, followed by year-on-year increases. Consistent with other RSA journals, all-female teams are the smallest share of submissions; this group had been increasing its share of submissions up to 2020, but has declined following the pandemic.

One potential explanation for the significant decrease in solo female authorship in 2020 could be an increase in APCs. *RSRS*, being an open-access journal, had an APC of £615 in 2020; however, the cost has since risen to £1460. A recent study found that female researchers submitted significantly fewer grant proposals compared with their male counterparts during the pandemic, resulting in gender disparities in securing extramural funding (Roubinov et al., 2022), which is often used to fund APCs. In addition, this may have hindered new data collection and research progress. The increasing APC prices and reduced external grants during COVID-19 might have imposed a greater burden on female researchers as a consequence of a delayed knock-on effect, disproportionately affecting their research productivity.

4.2.5. Area Development and Policy (ADP)

As shown in Table 3, *ADP* has received the fewest submissions across all RSA journals, totalling 485 submissions from 2018 to 2022. Possibly due to the small sample size, the slope of each authorship category in Figure 3 fluctuates significantly each year. Despite this variability, several authorship trends are apparent. In general, the majority of submissions are derived from solo male authors (five-year average of 28%), followed by all-male teams (five-year average of 23.3%) and male-led mixed gender teams (five-year average of 20.6%). All-female teams consistently submit the smallest number of papers, with the journal receiving only one submission in 2020 compared with 30 from all-male teams in the same year. Relative to other RSA journals, during the pandemic, there is an increasing trend with solo female authors (albeit with a dip in their share of total submissions in 2020) and male-led mixed-gender teams. Indeed, submissions from solo women experienced approximately 111% growth between 2020 and 2021.

4.3. Submission trends by continent

Figure 4 and Table 4 show the proportion of manuscript submissions from six continents.[4] Across all journals, with the exception of *ADP*, the majority of submissions come from Europe, followed by Asia and North America, while the other continents occupy only a small share of total submissions. In the case of *ADP*, Asia consistently ranks first, accounting for an average of 53.5% of submissions over the five-year period. Asia's geographical dominance is linked not only to the journal's focus on emerging economies but is also likely due to the fact that *ADP*'s editorial board is housed in China. In *Regional Studies*, the gap between Europe and Asia has been narrowing since 2018, despite the pandemic, with Asia nearly overtaking Europe's longstanding predominance. Among Asian countries, China has overwhelmingly been the major contributor to the increasing share of submissions between 2018 and 2022, accounting for 50.3% and 69.5%, respectively. Following China, India and Turkey are ranked second and third, respectively, with South Korea coming in fourth, making up 13% of the total submissions in 2022.

Asia's dominance is also observed in *SEA* and *RSRS*, with *SEA* experiencing an earlier shift, in 2020. The *SEA* shift is attributed to increased submissions from Asian countries, while the number of submissions from European countries remained relatively stable between 2019 and 2020. In 2019, submissions from Asian countries totalled 49, coming from China (26), Turkey (five), Japan (four), India (four), Iran (three), South Korea (two) and other countries (five). In 2020, submissions from Asian countries increased to 79, with China leading the majority (30), followed by Turkey (12), South Korea (six) and contributions from various other countries. While the gap between Asia and Europe has narrowed in other journals, European-led submissions in *TPG* continue to widen their lead, highlighting a significant disparity between Asia-led submissions. This could be attributed to differences in research topics and epistemological approaches adopted by authors across the global academic community. In general, there is a gender-related difference or preference in research methods employed by authors, with women being more likely to engage with non-positivist or post-positivist approaches, and men being more likely to adopt scientific methods and empirical evidence (Maliniak et al., 2013). These differences are also projected onto regional disparities, potentially contributing to the lagging-behind of Asia-led submissions in *TPG*. In Asia, positivist quantitative-oriented journals, such as *SEA*, dominate due to the academic environment and (possibly) the relative ease of writing in English for quantitative journals. Meanwhile, authors from Asia submitting to international

Figure 4. Total annual manuscript submissions by RSA journal and continent of lead author, 2018–22.
Note: The *y*-axis represents the percentage of annual journal submissions for each RSA journal.

qualitative-oriented journals such as *TPG* may face a silent struggle due to the language barrier, which presents an additional obstacle to non-native English speakers in publishing in international journals. This may lead to a smaller share of Asia-led submissions in *TPG*, aligning with a broader pattern observed in non-English-speaking countries, which emphasises expanding co-authorship networks with English-speaking counterparts (Poon, 2003).

When looking at *Regional Studies*, the bottom three continents (Africa, South America and Oceania) experienced a peak in submissions in 2020 (Table 4). However, their submissions nearly halved by 2022 after the onset of the pandemic, and there is no sign of a submission recovery. Between 2020 and 2021, in both *TPG* and *RSRS*, there was a minor decrease in submissions coming from Europe. However, the two journals have taken different paths in the early post-pandemic period, with *TPG* showing signs of recovery in European-led submissions, while *RSRS* continues to experience lingering effects from the pandemic, where European submissions are concerned.

4.4. Case study: In-depth submission trends by authorship types across continents in regional studies

Figure 5 illustrates the breakdown of submissions by authorship type across continents for *Regional Studies*. A significant proportion of submissions originate from all-male teams and male-led mixed-gender teams, particularly in Europe and Asia (Table 5). Across continents and authorship types, women are underrepresented, particularly with solo-female and all-female teams, submitting only half as many manuscripts as their male counterparts. In general, in Europe and Asia, there is a growing trend of collaboration, especially among mixed gender teams, as demonstrated in Table 5 and Figure 5, which include at least one female colleague. This practice of mixed-gender research is predominantly led by Europe and Asia. The increase in mix-gender teams is a hopeful sign, perhaps an indicator of the increased presence of female researchers in regional studies and of their contributions to the field.

Regardless of gender and authorship types, submissions from Americas, Africa and Oceania consistently

Table 4. Total annual manuscript submissions across RSA journals by continent, 2018–22.

Journal	2018 *N* (% of journal total annual submissions)	2019 *N* (% of journal total annual submissions)	2020 *N* (% of journal total annual submissions)	2021 *N* (% of journal total annual submissions)	2022 *N* (% of journal total annual submissions)
Regional Studies (total)	747 (100.0%)	890 (100.0%)	1,070 (100.0%)	1,092 (100.0%)	1,176 (100.0%)
Africa	15 (2.0%)	19 (2.1%)	35 (3.3%)	27 (2.5%)	18 (1.5%)
North America	55 (7.4%)	90 (10.1%)	81 (7.6%)	83 (7.6%)	52 (4.4%)
South America	18 (2.4%)	43 (4.8%)	54 (5.0%)	41 (3.8%)	29 (2.5%)
Asia	189 (25.3%)	256 (28.8%)	346 (32.3%)	403 (36.9%)	521 (44.3%)
Europe	428 (57.3%)	451 (50.7%)	504 (47.1%)	497 (45.5%)	527 (44.8%)
Oceania	42 (5.6%)	31 (3.5%)	50 (4.7%)	41 (3.8%)	29 (2.5%)
Spatial Economic Analysis (total)	144 (100.0%)	146 (100.0%)	185 (100.0%)	124 (100.0%)	191 (100.0%)
Africa	8 (5.6%)	4 (2.7%)	10 (5.4%)	9 (7.3%)	2 (1.0%)
North America	15 (10.4%)	13 (8.9%)	13 (7.0%)	10 (8.1%)	17 (8.9%)
South America	4 (2.8%)	8 (5.5%)	8 (4.3%)	10 (8.1%)	10 (5.2%)
Asia	39 (27.1%)	49 (33.6%)	79 (42.7%)	49 (39.5%)	87 (45.5%)
Europe	76 (52.8%)	71 (48.6%)	74 (40.0%)	44 (35.5%)	70 (36.6%)
Oceania	2 (1.4%)	1 (0.7%)	1 (0.5%)	2 (1.6%)	5 (2.6%)
Territory, Politics, Governance (total)	121 (100.0%)	157 (100.0%)	276 (100.0%)	238 (100.0%)	248 (100.0%)
Africa	7 (5.8%)	11 (7.0%)	14 (5.1%)	12 (5.0%)	21 (8.5%)
North America	18 (14.9%)	27 (17.2%)	26 (9.4%)	33 (13.9%)	25 (10.1%)
South America	2 (1.7%)	3 (1.9%)	12 (4.3%)	17 (7.1%)	6 (2.4%)
Asia	27 (22.3%)	29 (18.5%)	70 (25.4%)	64 (26.9%)	66 (26.6%)
Europe	62 (51.2%)	84 (53.5%)	143 (51.8%)	105 (44.1%)	127 (51.2%)
Oceania	5 (4.1%)	3 (1.9%)	11 (4.0%)	7 (2.9%)	3 (1.2%)
Regional Studies, Regional Science (total)	91 (100.0%)	103 (100.0%)	133 (100.0%)	131 (100.0%)	110 (100.0%)
Africa	6 (6.6%)	2 (1.9%)	4 (3.0%)	4 (3.1%)	5 (4.5%)
North America	6 (6.6%)	9 (8.7%)	8 (6.0%)	12 (9.2%)	4 (3.6%)
South America	1 (1.1%)	4 (3.9%)	4 (3.0%)	5 (3.8%)	1 (0.9%)
Asia	26 (28.6%)	30 (29.1%)	43 (32.3%)	42 (32.1%)	45 (40.9%)
Europe	46 (50.5%)	50 (48.5%)	67 (50.4%)	59 (45.0%)	48 (43.6%)
Oceania	6 (6.6%)	8 (7.8%)	7 (5.3%)	9 (6.9%)	7 (6.4%)
Area Development and Policy (total)	64 (100.0%)	63 (100.0%)	111 (100.0%)	128 (100.0%)	119 (100.0%)
Africa	3 (4.7%)	4 (6.3%)	12 (10.8%)	14 (10.9%)	7 (5.9%)
North America	3 (4.7%)	7 (11.1%)	11 (9.9%)	8 (6.2%)	6 (5.0%)
South America	6 (9.4%)	10 (15.9%)	12 (10.8%)	6 (4.7%)	8 (6.7%)
Asia	38 (59.4%)	26 (41.3%)	54 (48.6%)	77 (60.2%)	69 (58.0%)
Europe	11 (17.2%)	14 (22.2%)	20 (18.0%)	18 (14.1%)	23 (19.3%)
Oceania	3 (4.7%)	2 (3.2%)	2 (1.8%)	5 (3.9%)	6 (5.0%)

Note: Raw numbers represent the count of manuscripts submitted to each journal, categorised by continent. Each journal sums up to 100% annually. The number of manuscripts by continent was divided by the total annual submissions for each respective journal.

accounted for a small share, indicating ongoing underrepresentation with no significant impact from COVID-19. On the other hand, there is a pandemic-related effect in solo authorship in Asia. It appears that men experienced a delayed impact in 2022, whereas women experienced a more immediate impact in 2021. In the

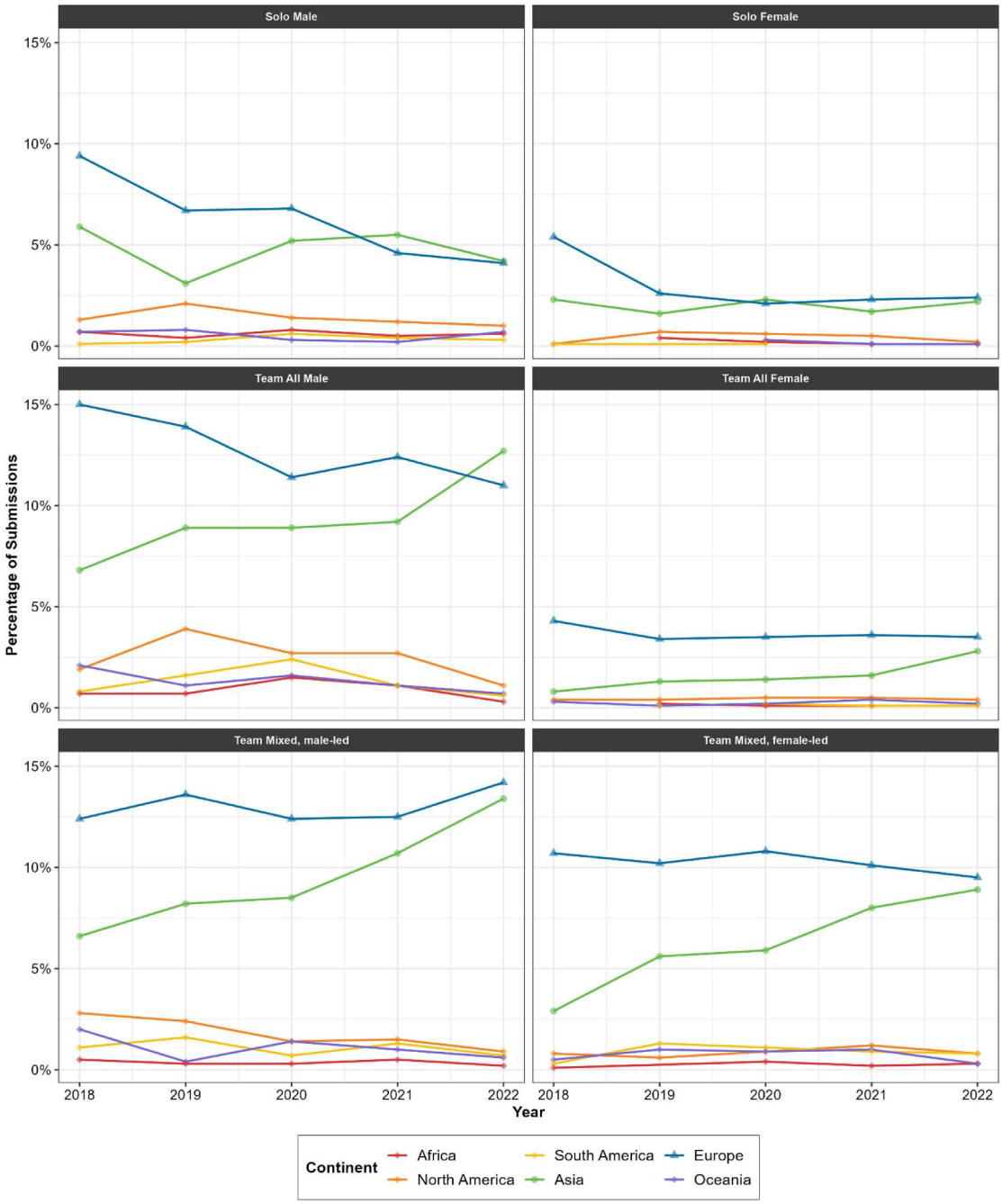

Figure 5. Total annual *Regional Studies* manuscript submissions by continent and authorship type, 2018–22.
Note: The *y*-axis represents the percentage of annual journal submissions for *Regional Studies*.

case of Europe, the number of submissions from women has remained stable, while that from men has decreased since 2020. At the same time, male-led mixed gender teams increased, possibly indicating a shift towards collaborative research. Overall, during the study period, the leading story is less about pandemic effects or gender and more about shifting submission geographies, with, in many authorship categories, European submissions stable or declining and Asian increasing. Forecasting ahead, this suggests that gains in female submissions will largely come down to shifting academic practices in Asia.

4.5. Decision trends by authorship type and location

Manuscript submissions are only one component of the publication process. The other is outcome: whether a manuscript is accepted for publication. Our third research question aimed to investigate overall manuscript decision trends over time and to assess potential effects from COVID-19. For example, in order to maintain productivity, researchers might submit less-polished work, under pressure to get papers submitted. Pandemic effects would, in that case, be less reflected in submission numbers but more apparent in decisions to reject. To assess

Table 5. Total annual *Regional Studies* manuscript submissions by continent and authorship type, 2018–22.

Authorship type	Continent	2018 *N* (% of total annual submissions)	2019 *N* (% of total annual submissions)	2020 *N* (% of total annual submissions)	2021 *N* (% of total annual submissions)	2022 *N* (% of total annual submissions)
Regional Studies (total)		747 (100.0%)	890 (100.0%)	1,070 (100.0%)	1,092 (100.0%)	1,176 (100.0%)
Solo male	Total	135 (18.1%)	120 (13.5%)	162 (15.1%)	135 (12.4%)	128 (10.9%)
	Africa	5 (0.7%)	4 (0.4%)	9 (0.8%)	6 (0.5%)	7 (0.6%)
	North America	10 (1.3%)	19 (2.1%)	15 (1.4%)	13 (1.2%)	12 (1%)
	South America	1 (0.1%)	2 (0.2%)	6 (0.6%)	4 (0.4%)	4 (0.3%)
	Asia	44 (5.9%)	28 (3.1%)	56 (5.2%)	60 (5.5%)	49 (4.2%)
	Europe	70 (9.4%)	60 (6.7%)	73 (6.8%)	50 (4.6%)	48 (4.1%)
	Oceania	5 (0.7%)	7 (0.8%)	3 (0.3%)	2 (0.2%)	8 (0.7%)
Solo female	Total	59 (7.9%)	47 (5.3%)	59 (5.5%)	51 (4.7%)	58 (4.9%)
	Africa	–	4 (0.4%)	2 (0.2%)	1 (0.1%)	1 (0.1%)
	North America	1 (0.1%)	6 (0.7%)	6 (0.6%)	5 (0.5%)	2 (0.2%)
	South America	1 (0.1%)	–	1 (0.1%)	–	–
	Asia	17 (2.3%)	14 (1.6%)	25 (2.3%)	19 (1.7%)	26 (2.2%)
	Europe	40 (5.4%)	23 (2.6%)	22 (2.1%)	25 (2.3%)	28 (2.4%)
	Oceania	–	–	3 (0.3%)	1 (0.1%)	1 (0.1%)
Team all male	Total	204 (27.3%)	268 (30.1%)	305 (28.5%)	301 (27.6%)	310 (26.4%)
	Africa	5 (0.7%)	6 (0.7%)	16 (1.5%)	12 (1.1%)	4 (0.3%)
	North America	14 (1.9%)	35 (3.9%)	29 (2.7%)	30 (2.7%)	13 (1.1%)
	South America	6 (0.8%)	14 (1.6%)	26 (2.4%)	12 (1.1%)	7 (0.6%)
	Asia	51 (6.8%)	79 (8.9%)	95 (8.9%)	100 (9.2%)	149 (12.7%)
	Europe	112 (15.0%)	124 (13.9%)	122 (11.4%)	135 (12.4%)	129 (11.0%)
	Oceania	16 (2.1%)	10 (1.1%)	17 (1.6%)	12 (1.1%)	8 (0.7%)
Team all female	Total	43 (5.8%)	50 (5.6%)	62 (5.8%)	67 (6.1%)	82 (7.0%)
	Africa	–	2 (0.2%)	1 (0.1%)	1 (0.1%)	–
	North America	3 (0.4%)	4 (0.4%)	5 (0.5%)	5 (0.5%)	5 (0.4%)
	South America	–	1 (0.1%)	2 (0.2%)	1 (0.1%)	1 (0.1%)
	Asia	6 (0.8%)	12 (1.3%)	15 (1.4%)	17 (1.6%)	33 (2.8%)
	Europe	32 (4.3%)	30 (3.4%)	37 (3.5%)	39 (3.6%)	41 (3.5%)
	Oceania	2 (0.3%)	1 (0.1%)	2 (0.2%)	4 (0.4%)	2 (0.2%)
Team mixed, male led	Total	190 (25.4%)	236 (26.5%)	264 (24.7%)	299 (27.4%)	352 (29.9%)
	Africa	4 (0.5%)	3 (0.3%)	3 (0.3%)	5 (0.5%)	2 (0.2%)
	North America	21 (2.8%)	21 (2.4%)	15 (1.4%)	16 (1.5%)	11 (0.9%)
	South America	8 (1.1%)	14 (1.6%)	7 (0.7%)	14 (1.3%)	8 (0.7%)
	Asia	49 (6.6%)	73 (8.2%)	91 (8.5%)	117 (10.7%)	157 (13.4%)
	Europe	93 (12.4%)	121 (13.6%)	133 (12.4%)	136 (12.5%)	167 (14.2%)
	Oceania	15 (2.0%)	4 (0.4%)	15 (1.4%)	11 (1.0%)	7 (0.6%)

(*Continued*)

Table 5. Continued.

Authorship type	Continent	2018 *N* (% of total annual submissions)	2019 *N* (% of total annual submissions)	2020 *N* (% of total annual submissions)	2021 *N* (% of total annual submissions)	2022 *N* (% of total annual submissions)
Team mixed, female led	Total	115 (15.3%)	167 (18.8%)	215 (20.1%)	233 (21.3%)	242 (20.6%)
	Africa	1 (0.1%)	–	4 (0.4%)	2 (0.2%)	4 (0.3%)
	North America	6 (0.8%)	5 (0.6%)	10 (0.9%)	13 (1.2%)	9 (0.8%)
	South America	2 (0.3%)	12 (1.3%)	12 (1.1%)	10 (0.9%)	9 (0.8%)
	Asia	22 (2.9%)	50 (5.6%)	63 (5.9%)	87 (8.0%)	105 (8.9%)
	Europe	80 (10.7%)	91 (10.2%)	116 (10.8%)	110 (10.1%)	112 (9.5%)
	Oceania	4 (0.5%)	9 (1.0%)	10 (0.9%)	11 (1.0%)	3 (0.3%)
Team mixed, unknown lead author	Total	1 (0.1%)	2 (0.2%)	3 (0.3%)	6 (0.5%)	4 (0.4%)

Note: Raw numbers represent the count of manuscripts submitted to *Regional Studies*, categorised by continent and authorship type. The breakdown of authorship and continent adds up to 100% annually.

decision trends, we calculated the proportion of submissions stratified by authorship type, location and decision outcomes (Table 6 and Figure 6; for expanded detail, see Appendices A and B in the supplemental data online). Importantly, given time thresholds to final editorial decisions, across journals there are many manuscripts that have not yet received any final decision (referred to as pending decision), and this number increases with more recent years (e.g., 2021 and 2022). In our dataset, decisions reflect the year the manuscript was initially submitted rather than the year the decision was actually made. For example, if a manuscript was submitted in 2018 and was eventually accepted in 2020, it is recorded as 2018, regardless of the duration to the final decision. With the exception of *Regional Studies*, all other RSA journals have relatively low numbers of accepted papers across each authorship category/continent, making it challenging to discern clear pandemic-related patterns in the data. Therefore, caution should be employed in interpreting these numbers.

4.5.1. Regional Studies

On the whole, the *Regional Studies* acceptance rate is 16% on average from 2018 to 2021. The majority of accepted papers come from all-male teams, male-led mixed-gender teams and female-led mixed-gender teams. In 2018, the acceptance ratio between solo male and solo female authors was 3:1, highlighting the stark gender disparity in accepted papers. The male-to-female ratio in their overall acceptance increased to 5.3 in 2020 but then decreased to 2.0 in 2021. These differences in accepted papers are also observed in collaborative research between all-male teams and all-female teams. In 2019, the ratio of all-male to all-female teams reached 6.3, marking an all-time high across authorship types (Table 6). This supports the evidence of gender inequities even in collaboratively authored papers (Auschra et al., 2022; Djupe et al., 2019; Teele & Thelen, 2017). These numbers also indicate that the revision process may itself have been affected by the COVID-19 crisis: perhaps some authors felt less able to dedicate quality time to revision or some reviewers were unable to allocate time for in-depth re-reviews.

Appendix A in the supplemental data online provides additional insight into acceptance rates across authorship types, showing that team research was more likely to be accepted for publication than solo-authored submissions. That said, in 2018 and 2020, solo men not only submitted more than solo women, but are also more likely to be published. In 2019, however, although they submitted much less, solo women (19.1% accepted) were much more successful at reaching publication than solo men (10.2% accepted). Given the high number of final editorial decisions still outstanding for 2021 and 2022, it is difficult to draw solid conclusions about gender gaps and pandemic effects on acceptance rates, although there is limited evidence that, although they may submit fewer papers, post-pandemic acceptances may be equalising.

4.5.2. Spatial Economic Analysis (SEA)

The acceptance rate for *SEA* remained relatively stable from 2018 to 2021, averaging 16.5%. During the pandemic period, it increased from 15.7% (2020) to 17.7% (2021), suggesting no significant pandemic-related impact on decision outcomes. There are, however, significant gender disparities observed in accepted papers for both solo-authored and same-gender team-authored papers. As shown in Table 6, there were no accepted papers from solo female authors in 2018 and 2021, despite 12 and three submissions (Table 3), respectively. Furthermore, no papers submitted by all-female teams were accepted in 2019 and 2021. The 'missing' female

Table 6. Annual accepted manuscripts by authorship type by RSA journal, 2018–22.

Journal	2018 *N* (% of acceptances)	2019 *N* (% of acceptances)	2020 *N* (% of acceptances)	2021 *N* (% of acceptances)	2022 *N* (% of acceptances)
Regional Studies (total)	747	890	1,070	1,092	1,176
Solo male	19 (15.1%)	13 (8.3%)	21 (11.7%)	10 (7.2%)	2 (6.2%)
Solo female	6 (4.8%)	9 (5.7%)	4 (2.2%)	5 (3.6%)	1 (3.1%)
Team all male	39 (31.0%)	56 (35.7%)	61 (34.1%)	45 (32.4%)	6 (18.8%)
Team all female	8 (6.3%)	9 (5.7%)	11 (6.1%)	11 (7.9%)	3 (9.4%)
Team mixed, male led	30 (23.8%)	46 (29.3%)	41 (22.9%)	39 (28.1%)	16 (50.0%)
Team mixed, female led	24 (19.0%)	24 (15.3%)	40 (22.3%)	29 (20.9%)	4 (12.5%)
Team mixed, unknown lead author	–	–	1 (0.6%)	–	–
Total accepted manuscripts	126	157	179	139	32
Pending submissions	–	–	5	45	201
Spatial Economic Analysis (total)	144	146	185	124	191
Solo male	5 (20.0%)	3 (13.6%)	3 (10.3%)	1 (4.5%)	–
Solo female	–	1 (4.5%)	3 (10.3%)	–	1 (16.7%)
Team all male	7 (28.0%)	10 (45.5%)	13 (44.8%)	10 (45.5%)	3 (50.0%)
Team all female	2 (8.0%)	–	2 (6.9%)	–	–
Team mixed, male led	5 (20.0%)	5 (22.7%)	6 (20.7%)	4 (18.2%)	2 (33.3%)
Team mixed, female led	6 (24.0%)	3 (13.6%)	2 (6.9%)	7 (31.8%)	–
Total accepted manuscripts	25	22	29	22	6
Pending submissions	–	–	–	5	47
Territory, Politics, Governance (total)	121	157	276	238	248
Solo male	21 (43.8%)	20 (37.0%)	20 (21.3%)	15 (23.1%)	10 (40.0%)
Solo female	7 (14.6%)	7 (13.0%)	14 (14.9%)	10 (15.4%)	2 (8.0%)
Team all male	7 (14.6%)	11 (20.4%)	13 (13.8%)	10 (15.4%)	9 (36.0%)
Team all female	3 (6.2%)	3 (5.6%)	5 (5.3%)	3 (4.6%)	1 (4.0%)
Team mixed, male led	6 (12.5%)	9 (16.7%)	22 (23.4%)	14 (21.5%)	–
Team mixed, female led	4 (8.3%)	4 (7.4%)	19 (20.2%)	13 (20.0%)	3 (12.0%)
Team mixed, unknown lead author	–	–	1 (1.1%)	–	–
Total accepted manuscripts	48	54	94	65	25
Pending submissions	–	–	–	4	50
Regional Studies, Regional Science (total)	91	103	133	131	110
Solo male	11 (24.4%)	9 (22.0%)	9 (20.0%)	11 (22.4%)	7 (21.2%)
Solo female	14 (31.1%)	2 (4.9%)	4 (8.9%)	5 (10.2%)	1 (3.0%)
Team all male	11 (24.4%)	10 (24.4%)	11 (24.4%)	16 (32.7%)	7 (21.2%)
Team all female	1 (2.2%)	4 (9.8%)	2 (4.4%)	3 (6.1%)	1 (3.0%)
Team mixed, male led	4 (8.9%)	11 (26.8%)	10 (22.2%)	9 (18.4%)	9 (27.3%)

(*Continued*)

Table 6. Continued.

Journal	2018 *N* (% of acceptances)	2019 *N* (% of acceptances)	2020 *N* (% of acceptances)	2021 *N* (% of acceptances)	2022 *N* (% of acceptances)
Team mixed, female led	4 (8.9%)	4 (9.8%)	9 (20.0%)	5 (10.2%)	8 (24.2%)
Team mixed, unknown lead author	–	1 (2.4%)	–	–	–
Total accepted manuscripts	45	41	45	49	33
Pending submissions	–	–	–	7	23
Area Development and Policy (total)	64	63	111	128	119
Solo male	8 (27.6%)	10 (47.6%)	6 (25.0%)	5 (16.7%)	3 (33.3%)
Solo female	1 (3.4%)	5 (23.8%)	2 (8.3%)	4 (13.3%)	3 (33.3%)
Team all male	10 (34.5%)	–	6 (25.0%)	8 (26.7%)	1 (11.1%)
Team all female	1 (3.4%)	2 (9.5%)	–	2 (6.7%)	1 (11.1%)
Team mixed, male led	6 (20.7%)	4 (19.0%)	4 (16.7%)	8 (26.7%)	1 (11.1%)
Team mixed, female led	3 (10.3%)	–	6 (25.0%)	3 (10.0%)	–
Total accepted manuscripts	29	21	24	30	9
Pending submissions	–	–	–	3	27

Note: Raw numbers represent the count of accepted manuscripts in each journal, by authorship type. Decision data are based on submission year. The percentage of accepted manuscripts by authorship type is calculated by dividing the number of accepted manuscripts in each category submitted in a given year by the total annual submissions for the respective journal. Pending submissions indicate the number of manuscripts awaiting final decision.

representation within this journal can be attributed to both low submissions and the limited population of female scholars in the field of quantitative spatial economics. In response, *SEA* has been making efforts to promote gender diversity, highlighting new research agendas suggested by female scholars (Abreu et al., 2021). It is worth noting that the COVID-19 impact may have contributed to these outcomes in 2021. On the other hand, submissions from all-male teams have the highest share of accepted papers throughout the study period, with no significant pandemic-related effect observed.

4.5.3. Territory, Politics, Governance (TPG)

On average, *TPG* accepted 33.9% of submissions over four years, excluding 2022. The acceptance rate has declined over time, dropping from 39.7% in 2018 to 27.3% in 2021, which could be a relic of the pandemic but may also reflect a natural evolution in acceptance patterns. The male-to-female ratio between accepted papers from solo male and solo female authors was 3:1 before the COVID-19 period; however, this disparity in acceptance improved during the pandemic, reaching a ratio of 1.4:1. Such a drop, by over half compared with 2018, signals improving female researcher visibility in the journal, given the consistent overall acceptance rate. In 2020 and 2021, over 43% of accepted papers came from mixed-gender teams, compared with 16% from all-male teams and 5% from all-female teams. There is little observable pandemic-related effect in terms of accepted papers and authorship types in *TPG*. Acceptance rates for solo female authors hold fairly steady from 2018 to 2021, at 30–35%, although they do dip a fair amount for solo male authors in 2020 and 2021 (see Appendix A in the supplemental data online). For team research, acceptance rates are broadly comparable across team types, with no obvious pandemic impacts.

4.5.4. Regional Studies, Regional Science (RSRS)

RSRS has the highest overall acceptance rate (37.4%, five-year median) among RSA journals, ranging from 49.5% in 2018 to 30% in 2022 (Figure 6 and Table 6). In 2018, the number of accepted papers for solo male and solo female authors was almost equal. However, in subsequent years, a gap has opened. Solo male authors have consistently had similar numbers of accepted papers whereas solo female authors have lagged behind. A similar pattern is also apparent in the same-gender teams, with all-male teams having higher numbers of accepted papers throughout the study period. This gender gap has persisted prior to, during and after the pandemic, possibly due to the journal's main attractiveness to younger cohorts, with young female scholars disproportionately affected. For example, this group may be juggling childcare and work, while dealing with the uncertainty of early academia, such as multiple part-time and short-term contracts.

4.5.5. Area Development and Policy (ADP)

In 2018, the majority of accepted papers was from solo male authors and all-male teams. Only one paper was

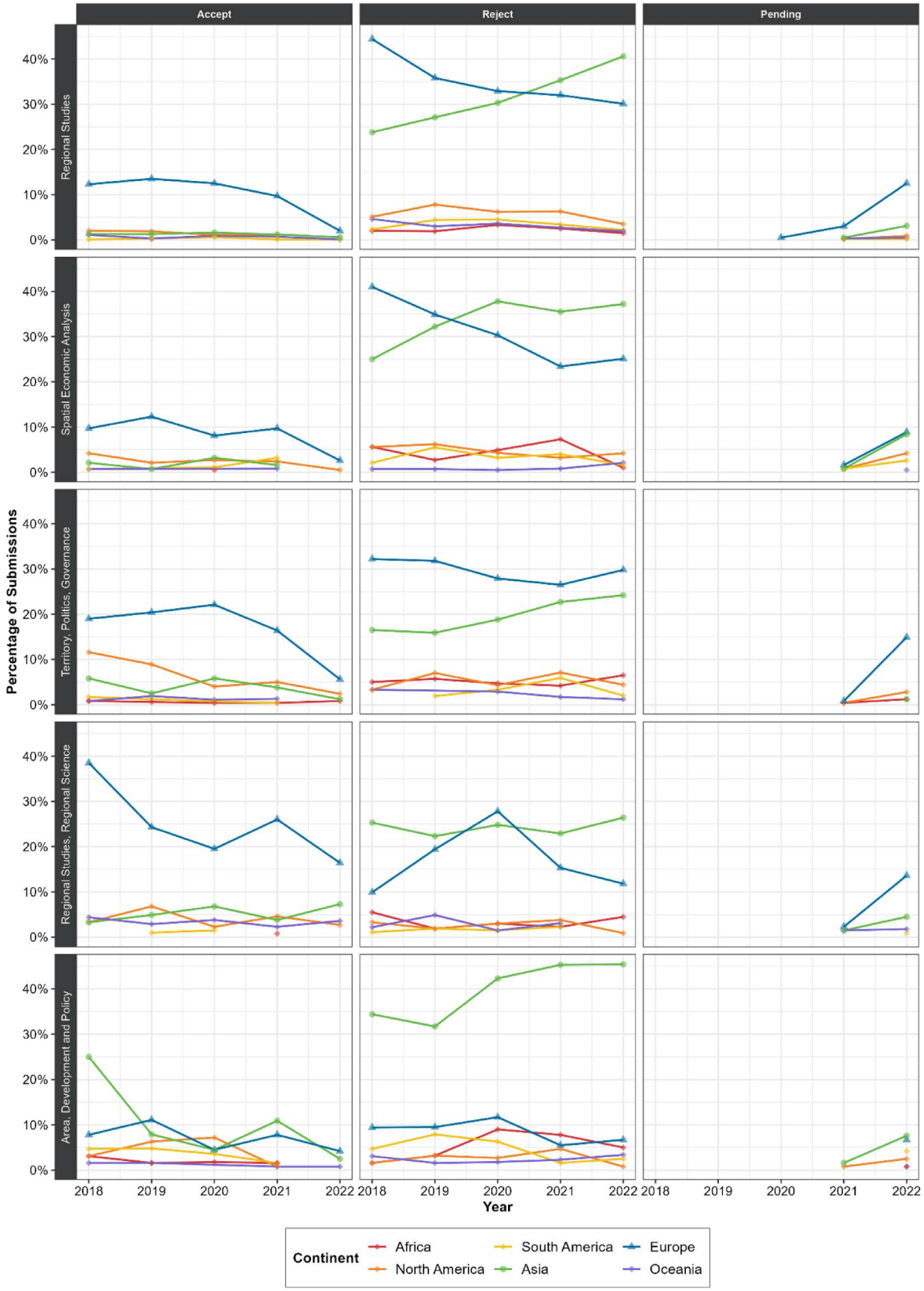

Figure 6. Total annual manuscript submissions by decision type and continent by RSA journal, 2018–22.
Note: The *y*-axis represents the percentage of annual journal submissions for each RSA journal.

accepted from a solo female author and all-female team. The gender inequity observed in 2018 has improved over time, as evidenced by the overall acceptance in 2021, which saw a nearly equal number of papers accepted from solo male and solo female authors. Nevertheless, due to the limited acceptance numbers,

it is difficult to draw any conclusion related to the pandemic.

4.6. Decision trends by continent

As Figure 5 shows, a substantial number of submissions to RSA journals come from Europe and Asia. However, there is a discernible disparity in terms of accepted papers (Figure 6; and see Appendix B in the supplemental data online). Specifically, although the trend is downward, more accepted papers tend to come from Europe, as evidenced by the noticeable gap in Figure 6. These geographical disparities are particularly prominent in *TPG* and *RSRS*. Appendix B online provides a comprehensive breakdown of decision trends by continent across RSA journals and reinforces that acceptance rates tend to be much higher for North American and European submissions. In the case of *TPG*, for example, papers from Asia had an acceptance rate of 14% (nine papers accepted out of 64 submissions), in contrast to a 37% acceptance rate from Europe (39 papers accepted out of 105 submissions) in 2021. In the same year, the acceptance rate disparity between Asia and Europe in *RSRS* is even more pronounced, with Asia having a 12% acceptance rate compared with Europe's 58%.

Bringing together geography and gender, Figure 7 shows the spatial distribution of the ratio of female to male author submissions from 2018 to 2022, broken down by country. Ratios > 1.0 indicate that there were more submissions from female authors than male authors in that country (Hanscam & Witcher, 2023). Upon disaggregating these ratios at the country level, differential gender disparities were found, parallel to previous findings (Chary et al., 2021; Merriman et al., 2021; Morgan et al., 2019). The majority of African and Middle Eastern countries have lower female-to-male submission ratios (Merriman et al., 2021). This trend is consistent within Asian countries such as South Korea and Japan as well. European nations such as Norway and Greece also demonstrate relatively low ratios (Chary et al., 2021; Hanscam & Witcher, 2023; Morgan et al., 2019). However, there are notable outliers where more females are submitting than males, particularly in Ukraine, Azerbaijan, Lithuania, Russia, Iceland and Kazakhstan (along with Bolivia in South America). This geographical corridor is not random; rather it is a legacy of the Soviet Union, where government policies placed an emphasis on gender equality, providing substantial support to women to integrate them into the labour force. These efforts led to increased access to employment and education. As a consequence, female scholars became predominant in the academic profession as teachers in higher education (Kataeva et al., 2023; Kuzhabekova & Almukhambetova, 2017). It appears that this legacy has persisted into the present. According to the UNESCO Institute for Statistics (2021), these post-Soviet countries have a relatively higher proportion of female teachers in tertiary education,

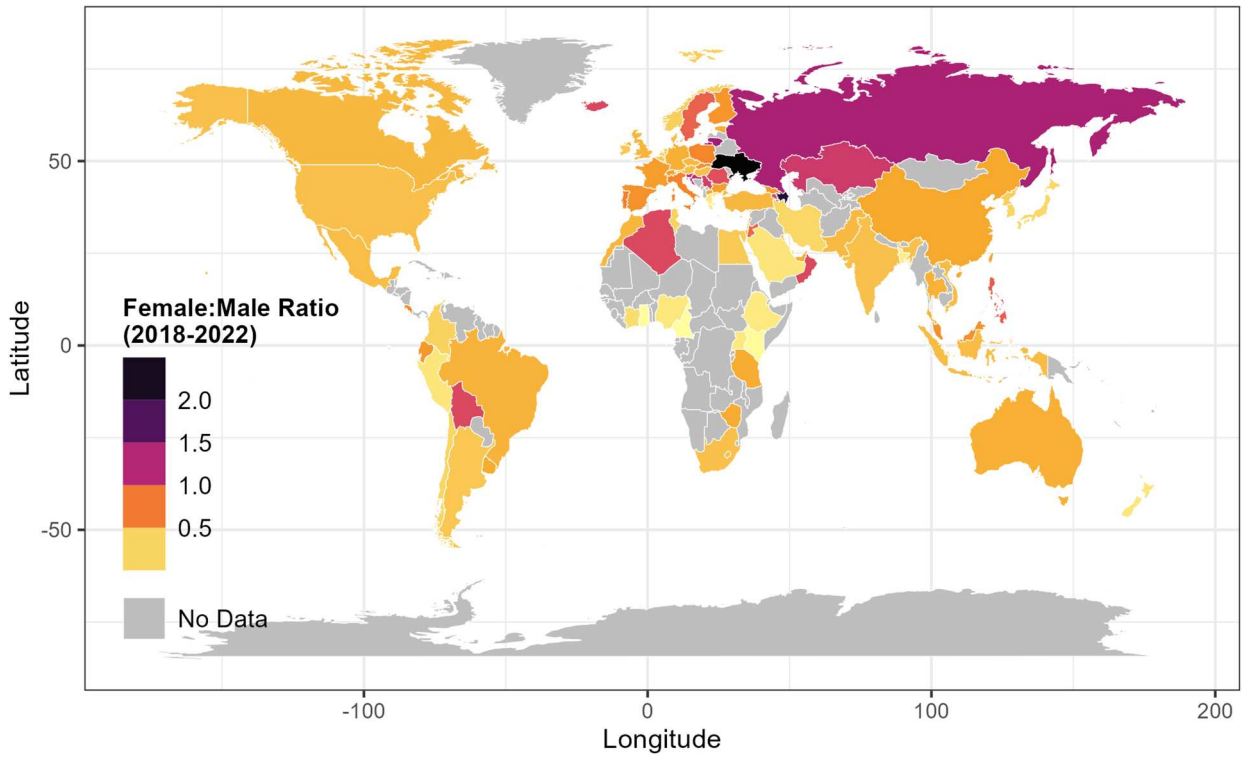

Figure 7. Female-to-male ratios of total authors by country, 2018–22.
Note: The ratio was calculated by the total number of male and female authors in each manuscript across all authorship types and journals at the country level (lead author country). For example, in the UK, there are 784 submissions. Within these manuscripts, there are 634 female authors and 1379 male authors. This gives a female-to-male ratio of 0.46 for the UK. Ratios > 1.0 indicate more submissions from female authors than male authors in that country).

ranging from 57% to 65%, compared with 46% in the UK (Ukraine: 61.72%, Azerbaijan: 57.59%, Lithuania: 56.94%, Russia: 62.47% and Kazakhstan: 65.26%).

5. DISCUSSION

Parsing the effects of the COVID-19 pandemic on academia and academic researchers is difficult and publication is RSA journals is no exception. In general, our results suggest that, although impacted in the various ways described above, the RSA journals have been largely robust to pandemic affects, showing ample indications of recovery in 2022. For example, our findings show that overall submission trends did not change significantly when looking at year-over-year growth rates across RSA journals, resulting in only a 3.5% decrease in the growth rate between 2020 and 2021 and a 7.6% rebound between 2021 and 2022. Within RSA journals, *Regional Studies* has exhibited consecutive increases in its submission rates since 2018, despite slightly lower growth during and after the pandemic in 2021 and 2022.

On the other hand, *SEA* and *TPG* experienced substantial declines in their submission growth rates during the same period, decreasing by 33.0% and 13.8%, respectively. Between 2021 and the early stages of post-pandemic 2022, *SEA* recovered from the possible disruptions, experiencing a 54.9% increase in submissions. In contrast, *TPG* saw only a 4.2% increase, which is relatively small, indicating a gradual recovery from the lingering effects of the pandemic. Between 2020 and 2021, *RSRS* retained nearly the same number of submissions, while *ADP* received more, leading to a 15% increase. However, between 2021 and 2022, the possible aftereffects of COVID-19 became evident in these journals, with both experiencing declines in their growth rates: *RSRS* by 16% and *ADP* by 7%. This may suggest a lagged effect of the pandemic on those who publish in these journals. Considering that overall research productivity and manuscript submissions substantially vary across disciplines, RSA journals were identified as less affected by the pandemic and more resilient compared with STEM fields that involve laboratory and field experiments.

Although manuscript submissions may not present a challenge to RSA, our identification of persistent gender inequities in publication across RSA journals presents food for thought for all RSA journals and, indeed, the wider regional studies community. There are more manuscript submissions from solo men, all-male teams and male-led teams than from their female counterparts across all journals for most years. Although the pandemic does not appear to have exacerbated this gap, in most cases, it also did not significantly improve it. This gap possibly reflects the sheer prevalence of male academics and the structural underrepresentation of women in regional studies-related disciplines. In this case, we should hopefully see improvements over time, as disciplinary gender balance improves.

Some positive evidence may already be discernible, as a general upward trend in submissions from male-led and female-led mixed-gender teams is evident in *Regional Studies*, *TPG* and *RSRS*, during this time period. Except for *TPG*, most manuscript submissions came from collaborative teams, which further supports a shift towards collaborative research. That said, authorship constellations remain skewed toward 'men's clubs' (i.e., all-male teams and male-led mixed gender teams), which submit at a disproportionately higher rate than all-female teams. Men are more likely to collaborate with other men than with women (Holman & Morandin, 2019; Shah et al., 2023), as shown by the persistently lower submissions from all-female teams. 'Women's clubs' are still less dominant than 'men's clubs' or 'men's islands' (Auschra et al., 2022; Young, 1995).

The predominance of male-oriented research networks is a structural barrier that reinforces persistent gender inequities in the broader research landscape, as evidenced by the higher number of submissions from all-male teams in *Regional Studies* and *SEA*. While these gendered dynamics in research networks and collaboration may not seem significant on the surface, they can impact lower submissions and success rates in securing research grants (Auschra et al., 2022; Young, 1995), imposing a compounded burden, such as the APC fee in open-access journals, as aligned with our finding for *RSRS* (Limaye, 2022; Roubinov et al., 2022). Our research corroborates these gendered submission dynamics in collaborative work, aligning with observations in various disciplines (Djupe et al., 2019; Hanscam & Witcher, 2023; King & Frederickson, 2021; Teele & Thelen, 2017) and calling for more attention to grapple with the structural underrepresentation of females in research productivity and publishing.

Whether the pandemic has exacerbated the preponderance of men in submissions is uncertain. This does not seem to be the case for *Regional Studies*. Although *SEA* and *TPG* demonstrated a notable decrease between 2020 and 2021, it is difficult to draw a definite conclusion about the pandemic effects due to the small number of submissions. For example, in *TPG*, every authorship category experienced a reduced number of submissions during this period. However, the decreases observed in several categories are negligible and cannot be distinguished from natural stagnation attributable to cyclical change, for example. The limited number of accepted papers, especially in *ADP*, also makes it challenging to draw significant conclusions on pandemic effects. Nevertheless, it appears that female teams (both all-female and female-led) did not collapse across journals. This suggests that being part of a collaborative team could serve as a buffer for females during times of external shocks and disruptions in home-work balance, such as the pandemic.

As far as the geography of RSA journal submissions is concerned, across all journals with the exception of *ADP*, our analysis shows a gradual erosion of European dominance and an ascendancy of Asian submissions. This also signals a positive shift moving towards the internationalisation of RSA journals, attracting more submissions from Asian countries, although some countries remain

underrepresented. The pandemic may have interrupted this trend, but it did not disrupt it. The remarkable geographical disparities we find for RSA journals are consistent with previous studies (Chen & Seto, 2022). This discrepancy highlights a potential lack of funding for regional research, particularly in the Global North countries of North America and Oceania. In terms of continental pandemic effects, there is some evidence that 2021 dampened submissions from Asia and Asia for *SEA*, *TPG* and *RSRS,* followed by a strong but uneven rebound in 2022. Interestingly, 2020 appears to have been the year for COVID-19 impact for North American submissions.

Regional Studies, which garners the majority share of submissions, does not show strong geographical pandemic shifts. This may be because those submitting to the RSA flagship journal may have been more insulated from impacts (e.g., more advanced in careers or in funded research programmes). It may also be, however, that the impacts are evidenced in the slopes of the increases – that is, submissions would have increased even more had it not been for the pandemic.

With respect to the third research question, we find that most accepted papers are from all-male teams and mixed-gender teams, particularly those led by men. This trend is a natural consequence of structural gender imbalances, as evidenced by higher submissions from male-authors, and it is especially pronounced in *Regional Studies* and *SEA*. Meanwhile, *TPG*'s acceptances have been trending towards mixed-gender teams, with equal male and female leadership. In these three journals, there were not substantial differences in the number of accepted papers in 2020, compared with the pre-pandemic period (2018–2019), suggesting editorial teams were still actively engaged in the peer-review process.

6. CONCLUSIONS

In closing, regional research and the RSA journals appear to have weathered the pandemic storm better than some other disciplines that have been studied. Although COVID-19 impacted submission and publication, these effects are varied in magnitude, timing and journal, suggestive of disciplinary resilience. At the same time, we find strong evidence of gender imbalances in submission and publication, apparent before, during and after the pandemic. We also show stark geographical differences in who submits and who is eventually published. That is the bad news. The good news is that, although progress may in some cases be slow, we also find signs of evolution and improvement. This research further contributes to ongoing discussions within the RSA and the broader research community, elucidating persistent inequalities in academic publishing, highlighting areas where additional improvements can be made, and providing benchmark data and analysis to help focus attention and target change.

Where do these copious amounts of RSA journal data leave us? First, the shock of the pandemic and our desire to measure its effects on research highlight one key point: to understand and act on gender or geographical imbalances we need to be able to measure them. Our dataset is not ideal; it is, however, the best we could achieve in order to provide baseline information about submissions and decisions across RSA journals. The lack of self-identified gender is particularly unfortunate. Only with better statistics will we be able to measure and monitor our discipline. Second, we work with numbers, and numbers cannot tell us why authors made the decisions they did. There is lots of room for additional research in this area. Third, it is undeniable that, in many areas of regional studies, publication (both submissions and eventual acceptances) is dominated by men. What we do not know is where the imbalances are originating: is it doctoral training? Is it a leaky pipeline that sees female regional researchers depart academia? Is it glass-ceiling or age structure and, with time, the imbalance will be rectified? Or is it bias on the part of editors in what (male) topics they privilege or researcher leaders in whom they prefer to include in their teams? These are questions we cannot answer, but our research certainly suggests that these are answers we should want to have.

ACKNOWLEDGEMENTS

We are indebted to the Regional Studies Association (RSA) for funding this research and to Taylor & Francis for providing data access and advice. Our appreciation also goes out to the RSA leadership and scholarly community for the recognition of the importance of this type of disciplinary research. Lastly, our thanks to the anonymous reviewers, whose comments and suggestions were immensely valuable during the revision process.

DATA AVAILABILITY

Due to the confidential nature of the information, neither the manuscript-level nor aggregated data are available for sharing. However, the original data may be available from Taylor & Francis upon direct request.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

ETHICS STATEMENT

This study received ethics approval from Newcastle University. The authors' information was initially anonymised by an approved research software engineer at Newcastle University before further analysis and then secured to protect sensitive data. The anonymised, aggregated data were subsequently utilised by researchers.

FUNDING

This work was supported by the Regional Studies Association (RSA).

NOTES

1. From hereafter, the journal acronyms will be used.
2. When a new manuscript is submitted, ScholarOne attempts to add authors to existing entries in the author database. It can happen, however, that submitting authors add a new duplicate entry for a co-author who is already in the system. In those cases, we would be counting that same author more than once. We do not attempt to merge these names, as we have no way of establishing whether, for example, there really are two 'Mary Jones' conducting regional research and submitting to these journals. That is, in all likelihood the actual number of unique authors submitting to RSA journals is somewhat lower than 27,323. This does not affect the subsequent analysis.
3. Gender-guessing algorithms infer gender of individuals based on their first names, classifying them as either male, female or unknown. Therefore, we are agnostic to all aspects related to sex versus gender identity.
4. The continent classifications were retrieved from the R package ggmap, in which Turkey is classified as belonging to the Asian continent.

ORCID

Gainbi Park http://orcid.org/0000-0001-7587-291X
Rachel Franklin http://orcid.org/0000-0002-2614-4665
Simona Iammarino http://orcid.org/0000-0001-9450-1700
Jessie P. H. Poon http://orcid.org/0000-0001-7449-4064

REFERENCES

Abreu, M., Poon, J., & Elhorst, P. (2021). Women in spatial economic analysis. *Spatial Economic Analysis*, *16*(2), 241–246. https://doi.org/10.1080/17421772.2021.1909892

Auschra, C., Bartosch, J., & Lohmeyer, N. (2022). Differences in female representation in leading management and organization journals: Establishing a benchmark. *Research Policy*, *51*(3), 104410. https://doi.org/10.1016/j.respol.2021.104410

Blickenstaff, J. (2005). Women and science careers: Leaky pipeline or gender filter? *Gender and Education*, *17*(4), 369–386. https://doi.org/10.1080/09540250500145072

Boring, A. (2017). Gender biases in student evaluations of teaching. *Journal of Public Economics*, *145*, 27–41. https://doi.org/10.1016/j.jpubeco.2016.11.006

Brower, A., & James, A. (2020). Research performance and age explain less than half of the gender pay gap in New Zealand universities. *PLoS One*, *15*(1), e0226392. https://doi.org/10.1371/journal.pone.0226392

Chary, S., Amrein, K., Soeteman, D. I., Mehta, S., & Christopher, K. B. (2021). Gender disparity in critical care publications: A novel female first author index. *Annals of Intensive Care*, *11*(1), 103. https://doi.org/10.1186/s13613-021-00889-3

Chatterjee, P., & Werner, R. M. (2021). Gender disparity in citations in high-impact journal articles. *JAMA Network Open*, *4*(7), e2114509–e2114509. https://doi.org/10.1001/jamanetworkopen.2021.14509

Chen, T.-H. K., & Seto, K. C. (2022). Gender and authorship patterns in urban land science. *Journal of Land Use Science*, *17*(1), 245–261. https://doi.org/10.1080/1747423X.2021.2018515

Cole, J. R., & Zuckerman, H. (1984). The productivity puzzle. *Advances in Motivation and Achievement*, *2*, 217–258.

Collyer, F. M. (2018). Global patterns in the publishing of academic knowledge: Global North, Global South. *Current Sociology*, *66*(1), 56–73. https://doi.org/10.1177/0011392116680020

Cui, R., Ding, H., & Zhu, F. (2022). Gender inequality in research productivity during the COVID-19 pandemic. *Manufacturing & Service Operations Management*, *24*(2), 707–726. https://doi.org/10.1287/msom.2021.0991

Dion, M. L., & Mitchell, S. M. (2020). How many citations to women is 'enough'? estimates of gender representation in political science. *PS: Political Science & Politics*, *53*(1), 107–113. https://doi.org/10.1017/S1049096519001173

Dion, M. L., Sumner, J. L., & Mitchell, S. M. (2018). Gendered citation patterns across political science and social science methodology fields. *Political Analysis*, *26*(3), 312–327. https://doi.org/10.1017/pan.2018.12

Djupe, P. A., Smith, A. E., & Sokhey, A. E. (2019). Explaining gender in the journals: How submission practices affect publication patterns in political science. *PS: Political Science & Politics*, *52*(1), 71–77. https://doi.org/10.1017/S104909651800104X

Fazackerley, A. (2020). Women's research plummets during lockdown – But articles from men increase. *The Guardian*. https://www.theguardian.com/education/2020/may/12/womens-research-plummets-during-lockdown-but-articles-from-men-increase

Fox, C. W., & Meyer, J. (2021). The influence of the global COVID-19 pandemic on manuscript submissions and editor and reviewer performance at six ecology journals. *Functional Ecology*, *35*(1), 4–10. https://doi.org/10.1111/1365-2435.13734

Franklin, R. S., Houlden, V., Robinson, C., Arribas-Bel, D., Delmelle, E. C., Demšar, U., Miller, H. J., & O'Sullivan, D. (2021). Who counts? Gender, gatekeeping, and quantitative human geography. *The Professional Geographer*, *73*(1), 48–61. https://doi.org/10.1080/00330124.2020.1828944

Gërxhani, K., Kulic, N., & Liechti, F. (2023). Double standards? Co-authorship and gender bias in early-stage academic evaluations. *European Sociological Review*, *39*(2), 194–209. https://doi.org/10.1093/esr/jcac045

Hanscam, E., & Witcher, R. (2023). Women in antiquity: An analysis of gender and publishing in a global archaeology journal. *Journal of Field Archaeology*, *48*(2), 87–101. https://doi.org/10.1080/00934690.2022.2143896

Hechtman, L. A., Moore, N. P., Schulkey, C. E., Miklos, A. C., Calcagno, A. M., Aragon, R., & Greenberg, J. H. (2018). NIH funding longevity by gender. *Proceedings of the National Academy of Sciences*, *115*(31), 7943–7948. https://doi.org/10.1073/pnas.1800615115

Hedding, D. W., & Breetzke, G. (2021). 'Here be dragons!' The gross under-representation of the Global South on editorial boards in geography. *The Geographical Journal*, *187*(4), 331–345. https://doi.org/10.1111/geoj.12405

Helmer, M., Schottdorf, M., Neef, A., & Battaglia, D. (2017). Gender bias in scholarly peer review. *Elife*, *6*, e21718. https://doi.org/10.7554/eLife.21718

Higginbotham, E., & Dahlberg, M. L. (2021). *The impact of COVID-19 on the careers of women in academic sciences, engineering, and medicine*. The National Academies Press.

Holman, L., & Morandin, C. (2019). Researchers collaborate with same-gendered colleagues more often than expected across the life sciences. *PLoS One*, *14*(4), e0216128. https://doi.org/10.1371/journal.pone.0216128

Holmes, A., & Hardy, S. (2019a). *Gender bias in peer review – Opening up the black box*. https://blogs.lse.ac.uk/impactofsocialsciences/2019/03/08/gender-bias-in-peer-review-opening-up-the-black-box/

Holmes, A., & Hardy, S. (2019b). *Gender bias in peer review – Opening up the black box II*. https://blogs.lse.ac.uk/impactof

socialsciences/2019/03/26/gender-bias-in-peer-review-opening-up-the-black-box-ii/

Huang, J., Gates, A. J., Sinatra, R., & Barabási, A.-L. (2020). Historical comparison of gender inequality in scientific careers across countries and disciplines. *Proceedings of the National Academy of Sciences*, *117*(9), 4609–4616. https://doi.org/10.1073/pnas.1914221117

Hunter, L., & Leahey, E. (2008). Collaborative research in sociology: Trends and contributing factors. *The American Sociologist*, *39*(4), 290–306. https://doi.org/10.1007/s12108-008-9042-1

Iammarino, S., & Prenzel, P. (2018). *Women in regional science – Really a success story?* https://www.regionalstudies.org/news/women-regional-science-really-success-story/

Jemielniak, D., Sławska, A., & Wilamowski, M. (2023). COVID-19 effect on the gender gap in academic publishing. *Journal of Information Science*, *49*(6), 1587–1592. https://doi.org/10.1177/01655515211068168

Kataeva, Z., Durrani, N., Izekenova, Z., & Rakhimzhanova, A. (2023). Evolution of gender research in the social sciences in post-Soviet countries: A bibliometric analysis. *Scientometrics*, *128*(3), 1639–1666. https://doi.org/10.1007/s11192-022-04619-9

King, M. M., & Frederickson, M. E. (2021). The pandemic penalty: The gendered effects of COVID-19 on scientific productivity. *Socius: Sociological Research for a Dynamic World*, *7*, 23780231211006977. https://doi.org/10.1177/23780231211006977

Kloß, S. T. (2017). The Global South as subversive practice: Challenges and potentials of a heuristic concept. *The Global South*, *11*(2), 1–17. https://doi.org/10.2979/globalsouth.11.2.01

Kuzhabekova, A., & Almukhambetova, A. (2017). Female academic leadership in the post-Soviet context. *European Educational Research Journal*, *16*(2–3), 183–199. https://doi.org/10.1177/1474904116682040

Kwan, M.-P. (2002). Feminist visualization: Re-envisioning GIS as a method in feminist geographic research. *Annals of the Association of American Geographers*, *92*(4), 645–661. https://doi.org/10.1111/1467-8306.00309

Lawson, C., Geuna, A., & Finardi, U. (2021). The funding–productivity–gender nexus in science, a multistage analysis. *Research Policy*, *50*(3), 104182. https://doi.org/10.1016/j.respol.2020.104182

Lerchenmüller, C., Schmallenbach, L., Jena, A. B., & Lerchenmueller, M. J. (2021). Longitudinal analyses of gender differences in first authorship publications related to COVID-19. *BMJ Open*, *11*(4), e045176. https://doi.org/10.1136/bmjopen-2020-045176

Limaye, A. M. (2022). Article processing charges may not be sustainable for academic researchers. *MIT Science Policy Review*, *3*, 17–20. https://doi.org/10.38105/spr.stvcknibc5

Maliniak, D., Powers, R., & Walter, B. F. (2013). The gender citation gap in international relations. *International Organization*, *67*(4), 889–922. https://doi.org/10.1017/S0020818313000209

McDowell, J. M., Singell, L. D., & Stater, M. (2006). Two to tango? Gender differences in the decisions to publish and coauthor. *Economic Inquiry*, *44*(1), 153–168. https://doi.org/10.1093/ei/cbi065

McLafferty, S. L. (1995). Counting for women. *The Professional Geographer*, *47*(4), 436–442. https://doi.org/10.1111/j.0033-0124.1995.436_j.x

Memon, A. R., Ahmed, I., Ghaffar, N., Ahmed, K., & Sadiq, I. (2022). Where are female editors from low-income and middle-income countries? A comprehensive assessment of gender, geographical distribution and country's income group of editorial boards of top-ranked rehabilitation and sports science journals. *British Journal of Sports Medicine*, *56*(8), 458–468. https://doi.org/10.1136/bjsports-2021-105042

Merriman, R., Galizia, I., Tanaka, S., Sheffel, A., Buse, K., & Hawkes, S. (2021). The gender and geography of publishing: A review of sex/gender reporting and author representation in leading general medical and global health journals. *BMJ Global Health*, *6*(5), e005672. https://doi.org/10.1136/bmjgh-2021-005672

Metz, T., & Jäckle, S. (2017). Patterns of publishing in political science journals: An overview of our profession using bibliographic data and a co-authorship network. *PS: Political Science & Politics*, *50*(1), 157–165. https://doi.org/10.1017/S1049096516002341

Morgan, R., Lundine, J., Irwin, B., & Grépin, K. A. (2019). Gendered geography: An analysis of authors in The lancet global health. *The Lancet Global Health*, *7*(12), e1619–e1620. https://doi.org/10.1016/S2214-109X(19)30342-0

Muric, G., Lerman, K., & Ferrara, E. (2021). Gender disparity in the authorship of biomedical research publications during the COVID-19 pandemic: Retrospective observational study. *Journal of Medical Internet Research*, *23*(4), e25379. https://doi.org/10.2196/25379

Namsor. (2018). *Understanding Namsor API precision for gender inference*. https://namsor.app/features/gender-name/

Peterson, D. A. (2018). Historical disparities and gendered citation patterns. *Political Analysis*, *26*(3), 338–344. https://doi.org/10.1017/pan.2018.16

Pinho-Gomes, A.-C., Peters, S., Thompson, K., Hockham, C., Ripullone, K., Woodward, M., & Carcel, C. (2020). Where are the women? Gender inequalities in COVID-19 research authorship. *BMJ Global Health*, *5*(7), e002922. https://doi.org/10.1136/bmjgh-2020-002922

Poon, J. P. (2003). Quantitative methods: Producing quantitative methods narratives. *Progress in Human Geography*, *27*(6), 753–762. https://doi.org/10.1191/0309132503ph461pr

Rigg, L. S., McCarragher, S., & Krmenec, A. (2012). Authorship, collaboration, and gender: Fifteen years of publication productivity in selected geography journals. *The Professional Geographer*, *64*(4), 491–502. https://doi.org/10.1080/00330124.2011.611434

Rinaldo, N., Piva, G., Ryder, S., Crepaldi, A., Pasini, A., Caruso, L., Manfredini, R., Straudi, S., Manfredini, F., & Lamberti, N. (2023). The issue of gender bias represented in authorship in the fields of exercise and rehabilitation: A 5-year research in indexed journals. *Journal of Functional Morphology and Kinesiology*, *8*(1), 18. https://doi.org/10.3390/jfmk8010018

Roubinov, D., Haack, L. M., Folk, J. B., Rotenstein, L., Accurso, E. C., Dahiya, P., Ponce, A. N., Nava, V., Maldonado, Y., & Linos, E. (2022). Gender differences in national institutes of health grant submissions before and during the COVID-19 pandemic. *Journal of Women's Health*, *31*(9), 1241–1245. https://doi.org/10.1089/jwh.2022.0182

Sarsons, H. (2017). Recognition for group work: Gender differences in academia. *American Economic Review*, *107*(5), 141–145. https://doi.org/10.1257/aer.p20171126

Sarsons, H., Gërxhani, K., Reuben, E., & Schram, A. (2021). Gender differences in recognition for group work. *Journal of Political Economy*, *129*(1), 101–147. https://doi.org/10.1086/711401

Schurr, C., Müller, M., & Imhof, N. (2020). Who makes geographical knowledge? The gender of geography's gatekeepers. *The Professional Geographer*, *72*(3), 317–331. https://doi.org/10.1080/00330124.2020.1744169

Sebo, P. (2021). Performance of gender detection tools: A comparative study of name-to-gender inference services. *Journal of the Medical Library Association: JMLA*, *109*(3), 414. https://doi.org/10.5195/jmla.2021.1185

Shah, U. U., Gul, S., & Bhat, S. A. (2023). Gender difference in library and information science research. *Journal of*

Librarianship and Information Science, *09610006231196596*. https://doi.org/10.1177/09610006231196596

Sheppard, L., Reades, J., & Freeman, R. (2023). Gendering and diversifying the research pipeline: A quantitative feminist geographical approach to gender in higher education. *Annals of the American Association of Geographers*, *113*(4), 817–833. https://doi.org/10.1080/24694452.2022.2160302

Son, J.-Y., & Bell, M. L. (2022). Scientific authorship by gender: Trends before and during a global pandemic. *Humanities and Social Sciences Communications*, *9*(1), 1–10. https://doi.org/10.1057/s41599-021-01017-z

Squazzoni, F., Bravo, G., Farjam, M., Marusic, A., Mehmani, B., Willis, M., Birukou, A., Dondio, P., & Grimaldo, F. (2021a). Peer review and gender bias: A study on 145 scholarly journals. *Science Advances*, *7*(2), eabd0299. https://doi.org/10.1126/sciadv.abd0299

Squazzoni, F., Bravo, G., Grimaldo, F., García-Costa, D., Farjam, M., & Mehmani, B. (2021b). Gender gap in journal submissions and peer review during the first wave of the COVID-19 pandemic. A study on 2329 Elsevier journals. *PLoS One*, *16*(10), e0257919. https://doi.org/10.1371/journal.pone.0257919

Stack, S. (2004). Gender, children and research productivity. *Research in Higher Education*, *45*(8), 891–920. https://doi.org/10.1007/s11162-004-5953-z

Sultana, F. (2017). Reflexivity. In N. C. D. Richardson, M. F. Goodchild, A. Kobayashi, W. Liu, & R. A. Marston (Eds.), *International encyclopedia of geography: People, the earth, environment and technology* (pp. 1–5). John Wiley.

Teele, D. L., & Thelen, K. (2017). Gender in the journals: Publication patterns in political science. *PS: Political Science & Politics*, *50*(2), 433–447. https://doi.org/10.1017/S1049096516002985

Tulloch, A. I. (2020). Improving sex and gender identity equity and inclusion at conservation and ecology conferences. *Nature Ecology & Evolution*, *4*(10), 1311–1320. https://doi.org/10.1038/s41559-020-1255-x

UNESCO Institute for Statistics. (2021). *UIS Statistics*. https://databrowser.uis.unesco.org/

Viglione, G. (2020). Are women publishing less during the pandemic? Here's what the data say. *Nature*, *581*(7809), 365–366. https://doi.org/10.1038/d41586-020-01294-9

Williams, E. A., Kolek, E. A., Saunders, D. B., Remaly, A., & Wells, R. S. (2018). Mirror on the field: Gender, authorship, and research methods in higher education's leading journals. *The Journal of Higher Education*, *89*(1), 28–53. https://doi.org/10.1080/00221546.2017.1330599

Yao, J., Nguyen, A. X.-L., Xiang, L., Li, A., & Wu, A. Y. (2022). Geography, gender, and collaboration trends among global health authors. *Journal of Global Health Reports*, *6*, e2022014. https://doi.org/10.29392/001c.33616

Young, C. D. (1995). An assessment of articles published by women in 15 top political science journals. *PS: Political Science & Politics*, *28*(3), 525–533. https://doi.org/10.2307/420325