



The Review of Regional Studies

The Official Journal of the Southern Regional Science Association



One Real Problem at a Time: Revisiting the Status of Regional Science and Female Economists *

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Abstract: West (1996) discussed the status of women economists as well as the field of regional science within economics in her SRSA Presidential Address. In this paper, we revisit these issues and examine if and how things have changed over the last several decades. We focus on progress that has been made and areas where additional changes may be needed in order to continue to improve. In addition, we discuss how the current COVID-19 pandemic may be relevant in the future for women in academia as well as academics in general as we move into a more virtual world.

Keywords: regional science, women in economics, journal rankings, CSWEP, NARSC, SRSA

JEL Codes: A2, J12, J13, R00, R10

1. INTRODUCTION

In her 1996 Southern Regional Science Association (SRSA) Presidential Address, Carol West drew comparisons between two struggling communities, namely female economists and regional scientists (West, 1996). She suggested women in economics and the regional science field have parallel challenges and offered insights from their experiences. For women, she encouraged setting aside the self-doubt that only adds to the challenges posed by the glass ceiling. She also encouraged women to work toward a sustainable intersection of their careers and personal lives rather than risk burn-out by trying to do it all in both their market and non-market work. In accomplishing balance, she argued, we might find a path for more women to advance as academic economists.

Like female economists, Dr. West pointed out that regional science has had times of self-doubt that have, to some extent, reinforced our being cast as “outsiders” to mainstream

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economics.¹ Dr. West encouraged regional scientists, similar to women, to set aside self-doubt – to concern ourselves less with the mainstream and even embrace being on the outside. At our best, we innovate methods driven by the need to better understand relevant issues and offer unique insights and solutions. She encouraged us to continue to develop methods tailored to specific questions using the Dean/Witter approach – one real regional problem at a time. In focusing on specific and real problems and building tools that advance our understanding, we stay relevant and on the cutting edge.

Today, we again hear questioning, even concern, about the status of regional science as a field of economics. The Regional Science Association International (RSAI) has a biannual World Congress that has not convened for three of the last four scheduled Congresses. While these cancellations were through no fault of the local organizing committee or due to concerns regarding the field of regional science (political instability in Turkey and Thailand prior to the Congress is not a reflection on the field of regional science, nor is a worldwide pandemic due to COVID-19 canceling the 2020 Congress in Morocco), there are questions about how regional science is progressing as a field. In North America, for example, the North American Regional Science Council (NARSC) saw a decline in attendance at their annual conference following the decision of the Urban Economics Association (UEA) to separate and form their own independent group and organize a separate conference. COVID-19 is creating additional concerns regarding the financial stability of various professional organizations, including those in regional science, as conferences are being cancelled or moved to virtual only events. These in-person conferences have been cancelled not just due to concerns about the containment of the virus, but also due to diminished university budgets. If this continues, how will reduced travel budgets affect attendance at conferences and the stability of these professional organizations, including those in regional science? Furthermore, how will canceling these face-to-face conferences affect the ability of young scholars, including women, to form connections and develop mentors to help them succeed in the profession?

On the progress of female economists, the challenges of self-doubt and work-life balance may still linger for many. The Committee on the Status of Women in the Economics Profession (CSWEP) was formed specifically to address issues related to the difficulties women face in the profession in 1971.² In her address 25 years after the formation of CSWEP, Dr. West suggested that progress was being made but there was still work to do. Since she spoke, the progress of women in the field has largely stalled suggesting that there is more work to be done. Perhaps in addressing the challenges for female economists and fostering a more diverse profession generally, we might also use the Dean/Witter approach – focusing on one real problem at a time.

This article reconsiders the issues brought up in Dr. West's 1996 presidential address and in general asks, where are we now? More specifically, has the status of women in economics changed and what challenges remain? Is regional science still a robust field of economics? We discuss various ways to consider these issues and look at what could be done going

¹Regional science is an interdisciplinary field, drawing on researchers in economics, agricultural economics, geography, policy, urban planning, and other fields. However, in her address Dr. West focused on how regional science is viewed within economics, which is what we focus on in this piece.

²For more information on the mission of CSWEP, see: <https://www.aeaweb.org/about-aea/committees/cswep/about/mission>

forward to help these groups succeed. Furthermore, we discuss how the current COVID-19 pandemic is contributing to some of the concerns regarding women in academia as well as how academia will progress in the future.

2. WOMEN IN ECONOMICS

For decades, the number of women in academic positions grew alongside rising female labor force participation and professional sprawl into previously male-dominated fields. Today the share of women in academic positions is near 20 percent (The Economist, 2017). Psychology, the Social Sciences (excluding Economics), and Life Sciences have the highest share of women in the field. The share of women in these fields grew quickly but also had more women to begin with in the 1970s. However, Geoscience as well as Math and Computer Science, which looked more like Economics early on, now also have a greater share of women, suggesting that the female share of academics in Economics has grown relatively slow compared to other disciplines. Today, only Engineering and the Physical Sciences have a smaller share of women in academic positions than Economics.

The under-representation of female academic economists is perhaps indicative of a more systemic issue that spans the path to academia. Consider pre-professional stages during undergraduate and graduate education. While undergraduate women economics majors were once growing in number, that growth has stalled. One study observed that women averaged about one-third of undergraduate majors over the last 20 years but that share has been declining since the early 2000s (Ahlstrom and Asarta, 2019). Perhaps unsurprisingly, given the trend in female undergraduate majors, the number of PhDs in economics awarded to women has also stalled ending decades of growth (Lundberg and Stearns, 2018).

Dr. West wrote her presidential address near the peak of the growing share of women in the field in 1996. The changing growth trajectory for women in economics since then suggests that while the most explicit forms of discrimination that prevented women from entering the field before the 1970s have been rectified, historical gender patterns cast a long shadow and some of the more subtle, though significant, barriers for women persist. Being aware of and sensitive to these challenges alongside educating ourselves on successful strategies can help us shift toward a more diverse and vibrant community of scholars. Of course, some women will still leave based on preferences. The goal of initiatives that support women in the field is to remove barriers and address “one problem at a time” for those who have the ability and desire to advance in academia.

Advancing is a process of survival from the time economists enter into the field until the end of their career – it is a life cycle as suggested by Harvard economist, Claudia Goldin (Todd, 2019). The small share of women in advanced positions reflects the lifecycle – it takes time for newly entering women economists to reach senior positions in larger numbers. This means, of course, part of the solution to having more senior women economists is having more junior women and supporting their advancement. In regional science, there are certainly talented women at different stages in their career that are likely to continue to rise to increasingly prominent positions. To support the advancement of future cohorts of women in economics, however, it is important to understand where attrition occurs. Interestingly, the gender composition of the field does not change much between earning a bachelor’s degree

and entering into tenure track positions. Thus, we will highlight two important stages in the life cycle, namely undergraduate students in their first economics courses and assistant professors preparing for tenure.

For women, most attrition begins in the early stages of their education, shrinking the pool of potential female economists even before their first job. In introductory economics courses, women are fairly well represented (approximately 1/3 of total enrollment) but their numbers begin to fall in advanced undergraduate courses (Goldin, 2015; Lundberg and Stearns, 2018), resulting in fewer female undergraduate economic majors relative to men. Recent research suggests that simply introducing female role models – “successful and charismatic women who majored in economics at the same university” – in the form of guest speakers to undergraduate economics classes can help retain more female students in the major (Porter and Serra, 2020). This inexpensive intervention nearly doubled the likelihood of females declaring an economics major. In another experiment, high-achieving female undergraduate students were sent an email encouraging them to choose economics as their major, alongside information on career and earning prospects, as well as grade distributions (Buckles, 2019). These women were 6 percentage points more likely to major in economics, compared to a base of 13 percent (Buckles, 2019). These findings show us documented strategies that work for the youngest potential economists at the earliest stage but also suggest the general importance of female role models and encouragement which continue to be important as junior women advance through the field.

Another substantial decline in potential senior women economists comes between the level of assistant professor and associate professor. Having secured a tenure-track job, women are 12 percent less likely than men to achieve tenure (The Economist, 2017). There are several potential points of intervention that might help to reduce the number of women who exit academia, voluntarily or involuntarily. First, a recent study indicates that student evaluations are biased against women yet they are often a key part of evaluating a professor’s performance in teaching (Boring, 2017). Students, especially male students, are biased against female professors despite there being no evidence that women are worse teachers than their male counterparts (ibid). Relatively poor teaching evaluations have potential ripple effects for young faculty. If a junior female professor receives worse evaluations relative to her male peers during her early years of teaching, she may feel the need to reallocate time and energy to teaching at the cost of her research. This may then lead to a suffering research agenda in the early career years that are especially important for tenure. This pattern suggests that alternatives to student evaluations, such as more peer evaluation, may be a more equitable form of performance evaluation for teaching.

Service commitments can also come at the cost of time spent on more “promotable” activities such as research (Babcock et al., 2017). While there is evidence that women volunteer for service more often than men, they are also asked to serve more often, perhaps in the interest of representation as universities, colleges, departments, and professional organizations more intentionally pursue diversity. With few women to serve, however, service commitments can quickly accumulate and disproportionately burden the women who are available. Indeed, Guarino and Borden (2017) find that female faculty typically do more service than their male counterparts even after controlling for rank, field or department, and race/ethnicity. These service activities can come at the cost of other activities, specifically research, that carry

more value in a performance evaluation for promotion and tenure (Babcock et al., 2017). While service and diverse representation on committees are both important, we should also be sensitive to the potential burden these goals can disproportionately place on women.

Finally, there is evidence that women face gendered evaluation of their coauthored research as well. Sarsons (2010) finds that when men coauthor they are no less likely to receive tenure than those who do not coauthor. For women, however, their likelihood of tenure decreases when they coauthor. That is to say women face gendered biases in credit attributions for their work. Even in journalistic coverage of economic research it appears women's contributions are slighted (Wolfers, 2015). Combined with biased teaching evaluations, these discounted research products make it relatively more difficult for women to meet tenure standards.

To address these challenges as scientists, we can use the skills of our profession to evaluate potential policy interventions that have been implemented to create a more balanced environment. For example, one of the most promising paths forward lies in mentorship. A randomized control-trial of a mentoring program led by CSWEP evaluated three cohorts of participants and found that after five years, participants in the treatment group had 0.4 more NIH or NSF grants, three more publications, and were 25 percentage points more likely to have a top-tier publication (Blau et al., 2010). Along these same lines, senior colleagues in the field play an important role in writing letters of recommendation for junior colleagues. There is evidence that doubt-raising language comes up more often for female candidates with real consequences for their careers (Madera et al., 2019). What appears to be a gender bias against female candidates might be corrected with awareness and education on more equitable language choices.

Still some programs meant to address gender inequity have been less effective. Antecol et al. (2018) evaluate a gender-neutral "tenure clock stopping" policy. The initial policy to stop tenure clocks for women after pregnancy was adopted by many universities to mitigate the professional penalty women may suffer following childbirth and the accompanying changes in productivity – in other words, it is intended to "level the playing field." However, gender-neutral policies have become more common to accommodate shifting gender roles and allow for both men and women to be with a newborn child and reduce the stigma attached to using female-specific policies. This policy, however, had the effect of widening the performance gap between men and women in that it reduced female tenure rates and increased those for men. Women seemed to use their leave primarily for recovery and child care whereas men were able to maintain some amount of research productivity during this period. Thus, at the end of their respective stints of leave men were further ahead. In this case, the "tenure clock stopping" policy seems to exacerbate, not reduce gender disparities. This cautionary tale points to both the importance of evaluating policy and the difficulty of achieving the desired outcome.

The recent COVID-19 situation has further highlighted some of the issues with regard to tenure clocks and biases against genders or researchers with families. With the majority of the world under stay-at-home orders, child care centers and schools closed. This has left numerous scholars at home, and those with children are now responsible to provide full-time child care and manage homeschooling. Simultaneously, these individuals may be working to attain tenure at their respective universities. While many places have extended tenure

clocks for all untenured faculty, early evidence suggests this policy will exacerbate the gender inequities similar to when used in the context of paternity and maternity leave and gender-neutral “tenure clock stopping” policies (Amano-Patiño et al., 2020). For families with children, women are at more of a disadvantage due to being disproportionately responsible for child care. Indeed, women are publishing less than men in the midst of COVID-19 (Oleschuk, 2020). So, again, the policy of extending tenure clocks, while perhaps necessary and set with good intentions, does have an important gendered side effect that appears to negatively impact early-career female scholars.

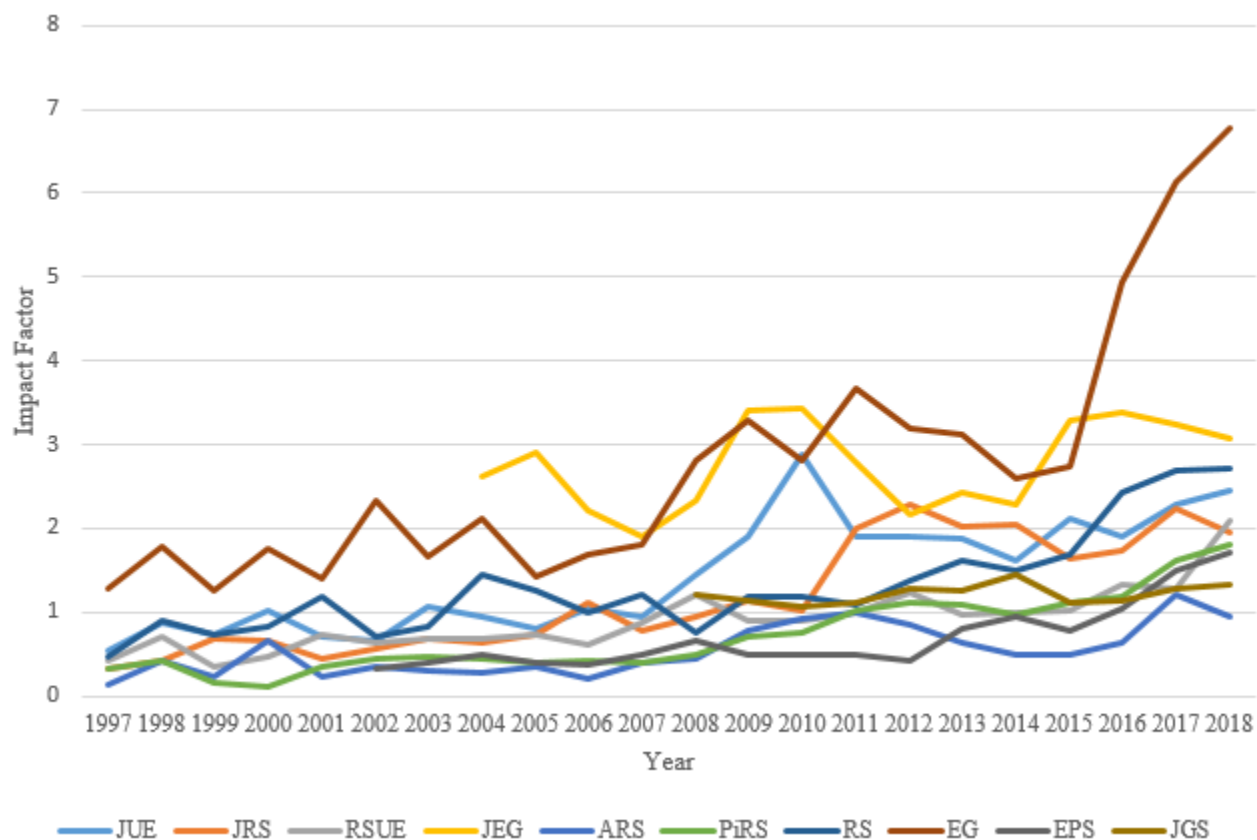
While some steps to help women are relatively easy to implement, others take much more of a financial commitment. Many universities have added lactation rooms for women who are breastfeeding. Another simple change has been to schedule important meetings within school hours, so that all members of the family can attend and do not have to leave early to pick up children or provide after school care. However, some changes come at a larger expense, such as providing child care at conferences. Many of the larger organizations, such as the American Economic Association, have been able to make this commitment, but many of the smaller conferences, such as the regional science conferences, do not have the financial ability to pursue these policies. These and other options have been discussed and pursued in other fields (Hilton, 2015). Though data on women in the field of regional science is relatively sparse, these broader trends can help us understand the relatively low participation among women at regional science conferences, the rarity of female keynote speakers, as well as the minority presence on editorial boards and among award winners in the field (Iammarino and Prenzel, 2017).

3. REGIONAL SCIENCE

In her 1996 Address, Dr. West also questioned if the field of regional science was becoming obsolete. A natural follow-up question to this point is how to tell if a field is losing its impact. One possible measure of whether or not a research area is struggling is to look at the journals that publish research in that area. Ultimately, publication record is one of the most important measures of faculty success used for hiring, promotion, tenure, and raise determinations. Therefore, if a journal is declining in terms of metrics, generally based on impact factors, faculty may decide not to submit papers to this journal further harming the field.

One of the key features of regional science research is the interdisciplinary nature of the work – a feature that is both appealing as well as possibly problematic. While often the most impactful research crosses disciplines, for tenure-track faculty there can be issues with publishing outside of your field when being assessed during the promotion and tenure process. Where as some disciplines may look at impact factors and other measures to judge the quality of a journal outside of their area, some disciplines immediately discount anything published outside of their area. Therefore, given that regional science is interdisciplinary in nature, one must wonder if these academic silhouettes are discouraging younger scholars from entering this research area out of concern regarding how it will affect their tenure prospects. With the impact of the field and challenges of interdisciplinary work in mind, we use the five-year impact factor as a measure to evaluate how the journals in regional science are

Figure 1: Five Year Impact Factor for Journals in Regional Science

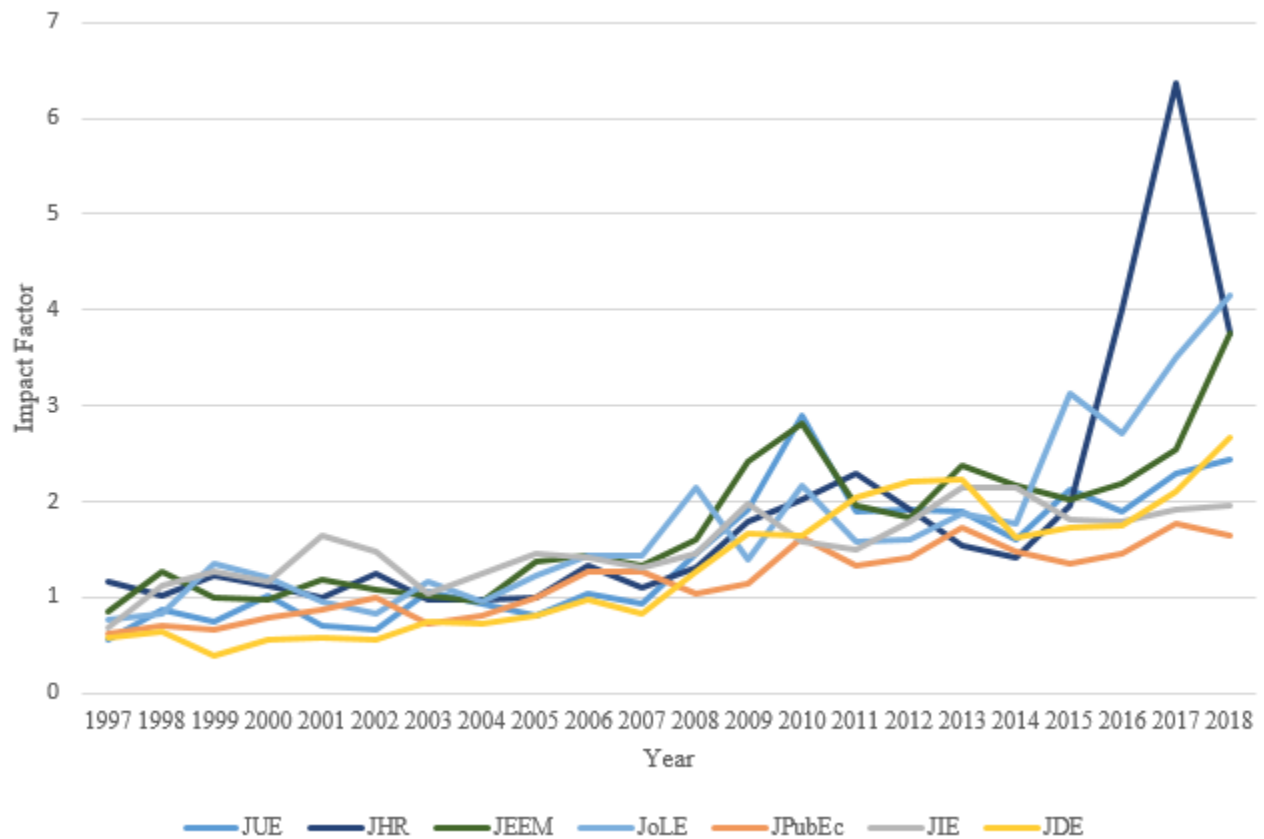


performing.

To obtain the five-year impact factors, we collected data from the Web of Science Journal Citations Report from 1997-2018. Journals must be indexed through the Social Sciences Citation Index (SSCI) in order to be included in this data set.³ The next question is how to determine the focal journals in regional science for examining the impact factors of the journals. We used the list from Iammarino and Prenzel (2017). Based on this list, and what was available in the Web of Science, we use the following regional science journals: the Journal of Urban Economics (JUE), the Journal of Regional Science (JRS), Regional Science and Urban Economics (RSUE), the Journal of Economic Geography (JEG), Annals of Regional Science (ARS), Papers in Regional Science (PiRS), Regional Studies (RS), Economic Geography (EG), European Planning Studies (EPS), and the Journal of Geographical System (JGS). We graph the trend in the five-year impact factor for these different journals in Figure 1. Overall, there appears to be an upward trend in all the regional science journals, suggesting that their influence has been improving over this 20 year period.

³For example, none of the primary journals in agricultural economics are in this data set and thus are excluded. Some journals received SSCI indexing during the time period, which is why there is only partial data for some journals.

Figure 2: Five Year Impact Factor for Top Field Journals in Economics



However, note that impact factors are based on how many times the journal is cited. One plausible explanation for an increase in the impact factor of a journal is that there has been a fundamental change in the nature of the discipline and that researchers in this area are just citing more in general. This would suggest that the impact factor for all journals in economics should be increasing, not just those for regional science.

To address this concern, we compare what is generally considered to be one of the top field journals in regional science – Journal of Urban Economics – to other top field journals in economics. Specifically, we consider the Journal of Human Resources (JHR), the Journal of Environmental Economics and Management (JEEM), the Journal of Labor Economics (JoLE), the Journal of Public Economics (JPubEc), the Journal of International Economics (JIE), and the Journal of Development Economics (JDE). These five year impact factors are shown in Figure 2.

Looking at the trends in Figure 2, we see that JUE appears to be in good shape relative to these other field journals. In general, the JUE has been near the middle of the pack in terms of the five-year impact factor, and has continued to improve in this metric at an overall comparable rate to these other journals. JHR in particular appears to have increased

its impact factor at a much higher rate than the other journals examined. However, looking closely at the data, it seems plausible that this jump was a temporary blip and not an adjustment to reach a new trend.

While these improvements in the journals of regional science are promising, one may also question how women are doing within the field of regional science. Recently, we have seen more women become Co-Editors handling papers at highly regarded regional science journals – specifically Leah Platt Boustan at the JUE and Alessandra Faggian at JRS. Both of these are positive signals for the field of regional science being inclusive of women. While some may argue we are not at equality and we need more women as journal editors and on editorial boards, one must remember that there may need to be a bit of a delay for these more senior positions. While we want women to be in a position to influence the field, putting women in these positions too soon may be detrimental to the progress being made. However, in regional science the pipeline of female researchers appears to be strong. For example, if we look at the winners of the Isard Award for Scholarly Excellence, there are few women who have won this award – only four since 1994. But, if we consider the Geoffrey Hewings Award for junior scholars, four women have won since 2014 (and even more before that). This suggests that while regional science may be currently lacking in the senior scholars, steps have been taken to address these problems and the pipeline of female scholars is strong.

Even though the journals in regional science appear to be performing well, there are concerns regarding conferences in the field. Recently, there has been a decline in attendance at the North American Regional Science Council (NARSC) annual conference. The main trigger behind this decreased attendance was the departure of the Urban Economics Association (UEA). The UEA elected to create their own separate organization and run an independent conference. However, while this departure may have impacted attendance at the NARSC meetings, thus far there is no evidence that the regional conferences (Mid-continent, Southern, and Western) in regional science have felt similar reductions in attendance. Therefore, while the decline in registrations for NARSC may raise some eyebrows, focusing on that one conference may not be sufficient to say attendance at regional science conferences is declining when attendance at the regional conferences remains stable.

Initially the withdrawal of the UEA had an immediate negative impact on the financial situation of the organization, as the unexpected drop in attendance impacted the ability of the group to meet food and drink minimums and hotel room blocks that were negotiated several years in advance. However, the long-run impact is still unclear. Does having two conferences that are relevant to the field of regional science increase the publicity and discussion among researchers in the area and thus increase its overall impact? It is plausible that while initially this is a problem due to hotel contracts, this split could be good in the long-run, as both conferences adjust and cross-pollinate at the appropriate rate. However, some scholars only have the budget to attend one conference – so which one will they choose to attend? Furthermore, with COVID-19 creating issues with university travel budgets, will more scholars face permanently reduced research budgets, possibly harming attendance permanently at all conferences? Thus far, it appears as though the rest of 2020 and the beginning of 2021 will predominately be on-line conferences, which scholars can attend at a reduced overall cost. Therefore, there is an argument that the COVID-19 situation may have a positive impact on attendance as these virtual events generally have lower registration fees and no travel costs

are required. In addition, several conferences, such as the Southern Economic Association and the Eastern Economic Association, are having hybrid conferences with both in-person and virtual sessions. If this mix of in-person and virtual sessions continues, attendance at conferences overall may increase as individuals can attend more events virtually. In addition, the virtual option may give individuals an opportunity to attend more conferences outside their area and possibly draw more researchers into the field of regional science.

Another positive outcome for researchers from COVID-19 making travel problematic is that virtual seminars have become common. NARSC, as well as the SRSA, organized several virtual seminars over the summer. In addition, these seminars have also been posted on YouTube for individuals to watch later, including students and future researchers in regional science. Having more of an on-line presence can aid in the dissemination of research. Furthermore, as younger generations tend to be more technologically inclined, having more of this information on-line may help to recruit individuals into the field of regional science at an earlier stage. In addition, these virtual activities may help women be more active and engaged in the discipline. Through virtual seminars and conferences, it is easier for women with children to overcome the hurdles of finding child care for multiple days in order to travel to conferences. While things are likely still difficult when providing child care at home, the increase in virtual conferences and seminars may help women with children stay more active in the field.

4. CONCLUSIONS

Though at first glance the place of female economists seems a separate question from the status of regional science in the broader scheme of academia, the two may be connected. In order for regional science to continue to grow as a field and remain valuable, it must continue to remain relevant. Perhaps too little diversity in the field of regional science comes at the cost of exactly that – relevance – a particularly steep price at a moment when we are evaluating our contributions.

Economics has historically been privileged with an important role in advising policy compared to many other disciplines. Regional science is especially well-suited for policy questions given the often empirical, multi-disciplinary, and spatial approaches that characterize the field. However, our ability to contribute comprehensive, holistic, and equitable insights on important questions hinges not just on the skills and tools of the discipline but also on the breadth of perspective we can bring to bear. This type of approach moving forward for regional science would be consistent with the views of Walter Isard – that regional science should work to become a new interdisciplinary field to advise on policy (Miernyk, 1976).

Dr. West highlighted parallel challenges for women economists and regional science, but perhaps in addition to sharing challenges, they might also share successes. As the appetite for distributional analysis and inclusive solutions grows, the need for a vibrant community of scholars is only increasing. Perhaps in growing and embracing a diversity of perspectives, approaches, and skills, we can also grow in relevance and our ability to address real regional problems. And, while women were the focus of Dr. West's address, certainly we can expand the focus to include a multifaceted view of diversity. Gender, race/ethnicity,

sexual orientation, geography, age, etc. are all important to consider when striving to achieve diversity within the profession and enhance our ability to speak to the range of pressing issues in the real world.

Relevance is, of course, bigger than our diversity alone. Strategies for becoming more relevant can be broad, but to echo Dr. West's address, should be focused on real events, such as looming social issues in our communities. Brian Cushing in his Presidential Address discussed the opioid crisis and how regional scientists can contribute (Cushing, 2017). Since that address, Dr. Cushing has organized countless sessions at both the NARSC and SRSA conferences on this issue. The ongoing situation with COVID-19 offers many challenges to regional economies going forward. Not all areas will recover the same way, and the same policies likely are not needed for all areas, so regional scientists must continue to play a role in advising policy on these issues. Mark Partridge discussed some of these issues related to COVID-19 in a NARSC virtual conference – but more research will be needed over the next several years so this work must continue.

In addition to remaining policy relevant, our research methods must remain current. Regional science has always excelled at being at the forefront of research using spatial econometric methods. We must not limit ourselves to that tool only. Harkening back to Dr. West's address, she encouraged us to consider which of our tools are outdated and to grow into new methodologies. As machine learning and big data continue to grow, regional science needs to learn and adopt these methods into our current system. Furthermore, like Rogers and Weiler (1995) argued many years ago, regional science may be failing to appeal to younger scholars. Without these young researchers with a fresh perspective to drive the field forward, concerns about the future of the field overall will remain.

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