Measuring publication diversity among the most productive scholars: how research trajectories differ in communication, psychology, and political science

Manuel Goyanes[1,2] · Márton Demeter[3] · Zicheng Cheng[4] · Homero Gil de Zúñiga[2,4,5]

Abstract
Examining research patterns across scientific fields constitutes a growing research enterprise to understand how global knowledge production unfolds. However, scattered empirical evidence has casted light on how the publication diversity of the most productive scholars differ across disciplines, considering their gender and geographical representation. This study focuses on the most prolific scholars across three fields (Communication, Political Science, and Psychology), and examine *all* journals where they have published. Results revealed the most common journals in which prolific scholars have appeared and showed that Communication scholars are more prone to publish in Political Science and Psychology journals than vice-versa, while psychologists' largely neglect them both. Our findings also demonstrate that males and US scholars are over-represented across fields, and that neither the field, gender, geographic location, or the interaction between gender and geographic location has a significant influence over publication diversity. The study suggests that prolific scholars are not only productive, but also highly diverse in the selection of the journals they publish, which directly speaks to both the heterogeneity of their research contributions and target readers.

Keywords Publication diversity · Productivity · Research careers · Research trajectory · Communication · Psychology · Political science

Introduction

In recent years, the growing internationalization and competition between research-intensive universities have sparked substantial interest in examining the research patterns of academic fields using different Scientometric data measures. Generally, these meta-analyses include the descriptive inspection of the most frequent research topics (Günther & Domahidi, 2017), methodological approaches (Demeter & Goyanes, 2021), networks of co-authorship (Newman, 2004), or research impact (Delgado & Repiso, 2013), primarily within fields. However, as relevant as these analyses may be, two

✉ Manuel Goyanes
   mgoyanes@hum.uc3m.es

Extended author information available on the last page of the article

related research gaps remain unbridled: examining the most productive scholars' (1) publication trajectories (2) across fields.

First, the limited scholarship examining top-performing scholars have mainly explored diverse research productivity antecedents (Joy, 2006; Lee & Bozeman, 2005), gender disparities (Eloy et al., 2013; Van Arensbergen et al., 2012), or research performance traits (e.g., Jones et al., 2010; Smith et al., 2003). Beyond these studies, meta-analytical research has also traditionally followed a top-down process to structurally describe research patterns in academic fields, typically neglecting prolific scholars. Accordingly, research has primarily examined a constrained set of journals, mainly those indexed in the JCR or Scopus ranking, to further examine their authorship or citation structure (Freelon, 2013; Günther & Domahidi, 2017; Jones et al., 2010; Martínez et al., 2011). Finally, research on diversity in sciences has also been highly prolific but has mainly focused on showing the extensive geographical and gender bias at different academic levels, such as editorial boards (Goyanes, 2020; Dhanani & Jones, 2017) or authorship (Breuning & Sanders, 2007).

Considering all these streams of research together, we still know little about a transversal theme that connects them all: how the publication trajectories of the most productive scholars differ across disciplines, considering their gender and geographical representation. To address this gap in the literature, rather than constraining the analysis to a set of given journals –as implemented by prior scholarship– we focus instead on the 100 most productive scholars in Communication, Psychology, and Political Science, and examine their publication diversity scores, considering all journals where they have published. Therefore, focusing on three different fields, the aim of this study is fourfold: (1) structurally describe the most prolific scholars research trajectories, (2) examine their gender and geographical representation, (3) explore and compare their publication diversity patterns, (4) and understand how gender and geographical positions shape the most prolific scholars' publication diversity.

Examining research trajectories among the most productive scholars is relevant for understanding the publication patterns of scientific fields; it reveals *how* homogeneous or heterogeneous the contributions of the most prolific scholars are and *where* they have typically published their academic works. Some authors, for instance, may pursue a standardized career, focusing on one set of defined journals relevant to their topics. In contrast, others may consider a more diverse publication strategy to reach different readers. Likewise, exploring the gender and geographic representation of the most productive scholars constitutes a vital research agenda to further capture research bias in scientific production. Altogether, this study contributes to current conversations at the intersection of Scientometrics studies, gender, and geographical bias in global knowledge production (e.g., Aguinis et al., 2018; Baruch, 2001; Begeny et al., 2018; Brown et al., 2020; Goyanes & De-Marcos, 2020; Leahey, 2006; Nisonger, 2002; Teele & Thelen, 2017; Van Arensbergen et al., 2012), providing insightful theoretical implications and empirical findings on academic representation and research trajectories.

Our results first reveal that the most popular journals among the most productive Communication, Psychology, and Political Science scholars are *Health Communication*, *Personality and Individual Differences* and *The British Journal of Social Work,* respectively. Also, germane to publication trajectories, a network analysis shows that prolific Communication scholars are more prone to publish in Political Science and Psychology journals than vice-versa. In contrast, psychologists' publications are primarily targeted to both Psychology and life science periodicals, typically neglecting either Communication or Political Science journals. In short, there is a bilateral relation between Communication and

Political Science, while both fields have unilateral connections to Psychology in terms of research output.

Second, our findings demonstrate that males are over-represented among the most prolific scholars across fields, but especially in the field of Political Science and Psychology. As for geographical representation, the proportion of non-US scholars among the most prolific researchers is statistically higher in Political Science, Psychology, and the pooled sample, but not in the field of Communication, in which US biases are still prevalent. Finally, neither the field, gender, geographic location, or the interaction between gender and geographic location has a significant effect on publication diversity, suggesting that the research output of the most prolific scholars are exceptionally diverse, regardless of their gender, geographical location, or field of study.

Research trajectories across fields

While there is scarce comparative research examining publication patterns across Communication, Psychology, and Political Sciences, a remarkable research tradition has sprung up around publication trends in each field independently. In political science, extant research has found low diversity rates in terms of gender and race in both the pool of submitted and published papers (Brown et al., 2020; Nisonger, 2002). However, no research has focused explicitly on publication trajectories of the most prolific scholars, remaining unclear the most salient journals where top-performing scholars have published and the connections established among them.

Unlike Political Science, publication trajectories of Psychology (Joy, 2006) and Communication scholars have been subjected to broader empirical scrutiny (Bolkan et al., 2012). However, especially in Psychology, most studies focused on either a given set of journals (de Meuse, 1987; Smith et al., 2003) or the most productive scholars from a given group of departments (Byrnes & McNamara, 2001; Jones et al., 1982). Thus far, research has found that the field of Psychology is considerably dominated by research originating in the US (Arnett, 2008; Begeny et al., 2018), yet with increasing levels of multidisciplinarity (Mayer & Rathmann, 2018). Along similar lines, Benjafield (2020) found that the standard set of journals where psychologists publish has changed, progressively distancing from humanistic fields, and turning towards neuroscience, cognitive sciences, and biology (Wieczorek et al., 2021).

While there is a broader research agenda examining publication patterns of the most prolific scholars in Communication (Burroughs et al., 1989; Hickson et al., 1989; Stacks & Hocking, 1992), most studies focused on a predetermined set of journals, remaining unclear the broader network of scholars' publication trajectories. For example, Hickson et al. (1993), limiting their sample to 19 Communication journals listed on the *Index to Journals in Communication Studies* in 1990, found that *Communication Monographs*, *Communication Education*, and *Human Communication Research* were the most popular journals for prolific scholars.

Later, Bolkan et al. (2012) found that for the most productive scholars, *Communication Research Reports*, *Communication Education*, *Human Communication Research*, *Communication Quarterly*, *Communication Studies,* and *Communication Research* were the most popular publication outlets during 2012–2016. However, as in the prior case, the study constrained its sample to 24 journals that have "historical precedent" (p. 4), five of which were considered to be the "most central to our discipline" (p. 1). Complementary to this

former research, this study approaches the relationship between productivity and publication trajectories from a divergent perspective. Instead of examining a determined set of journals to examine the most prolific scholars, the analysis focuses on the most prolific scholars to explore *all* periodicals where they have been published. Accordingly, we pose the following research questions:

RQ1 Where have most productive scholars published their papers in Communication, Psychology, and Political Science?

RQ2 Which are the publication trajectories of the top 100 scholars in Communication, Psychology, and Political Science?

Gender inequalities in science participation

In recent years, the analysis of gender inequalities, usually referred to as Matilda-effect in science (Rossiter, 1993), has substantially increased (Cole & Zuckermann, 1984; Fox & Nikivincze, 2021; Xie & Shauman, 2003). Extensive research has typically shown that, despite the growing presence of female scholars, they are still underrepresented amongst the most productive ones (Aguinis et al., 2018; Mayer & Rathmann, 2018; Van Arensbergen et al., 2012). In Political Science, Briscoe-Palmer and Mattocks (2020) argue that male dominance is still rampant; several studies have also voiced concerns about gender bias in various academic levels, such as editorial boards, authorship, and fellowships in scientific associations (Breuning & Sanders, 2007; Brown et al., 2020; Teele & Thelen, 2017).

In Psychology, despite being generally considered a female-oriented field (Mayer & Rathmann, 2018), researchers also found a significant male overrepresentation (Arnett, 2008; Begeny et al., 2018). Mayer and Rathmann (2018) analyzed the gender distribution in different publication outlets (i.e., journals, book chapters, and monographs). They found the most biased picture in journal publications, suggesting that "female professors publish less often than male professors, and are therefore less visible and less likely to gain recognition and prestige for their findings" (Mayer & Rathmann, 2018, p. 1679). According to the same authors, the lower publication success of female scholars is not the result of a lower acceptance ratio but a lesser likelihood of submitting their scholarship.

In Communication, gender inequalities have also been the focus of analytical efforts and academic discussion (Knobloch-Westerwick & Glynn, 2013; Knobloch-Westerwick et al., 2013). Knobloch-Westerwick and Glynn (2013) have found convincing evidence for the existence of the Matilda effect in their study of 15 years of two prominent journals of communication theory. Moreover, in line with role congruity theory, they also revealed that a paper by a female author(s) has a different degree of citation (or more precisely, under-citation) depending on whether the topic is perceived to be more "masculine" or "feminine". However, in the context of our research, the most relevant findings of Knobloch-Westerwick and Glynn's study (2013) are that, first, male scholars get more citations than their female peers on average. Second, the gender gap in citations is more substantial in the most prolific scholars that published at least five papers in the analyzed two flagship communication journals. The same authors also demonstrated the importance of the selection of the topic in a controlled experiment (Knobloch-Westerwick et al., 2013), pointing out that the presumed gender of the authors affected the assessment of the 'scientific quality' of the same scientific papers (or their abstracts). Judges gave higher evaluations if they thought that the author was male and lower if they thought she was female, especially when the

paper was also about a masculine topic. Based on former research on gender inequalities, we hypothesize that:

H1 The proportion of males among the most productive scholars is significantly higher than females in (a) Communication, (b) Political Science, (c) Psychology, and (d) the overall pooled sample.

The role of geopolitics in science participation

In addition to gender, one of the most studied factors affecting research productivity is geopolitics (Baruch, 2001; Goyanes & Demeter, 2021; Pooley & Park, 2013). The underlying assumption indicates that inequalities in global knowledge production follow the inequalities in geopolitical power relations (Demeter, 2019; Wang, 2011), triggering a Matthew effect across countries (Bonitz et al., 1997). Prior research has documented a significant Western, especially American, domination across various fields of sciences (e.g., Lauf, 2005; Delgado & Rapiso, 2013; Demeter, 2019). In Communication, for instance, Lauf (2005) has found that American authors dominated all SSCI communication journals, while Delgado and Rapiso (2013) showed that 80% of communication journals are based in either the United States or the United Kingdom. Existing evidence also shows that this dominance in knowledge production has a significant impact on the chances of becoming a member of the editorial board (Goyanes & Demeter, 2020).

As for Political Science, several researchers have suggested that geographical inequalities are pervasive, noting that the discipline mainly reflects the voice of white, typically American, males (Briscoe-Palmer & Mattocks, 2020; Nisonger, 2002). Similarly, in Psychology, a growing number of studies have documented that the field is dominated by research mainly produced in the United States (Arnett, 2008; Begeny et al., 2018; Bajwa & König, 2019). All in all, cross-disciplinary bibliometric studies have shown that in terms of the publication output of international journals, peripheral countries are seriously underrepresented, or even invisible (Curry & Lillis, 2018; Efranmanesh et al., 2017; Heilbron et al., 2018). However, little is known thus far on how these geographic inequalities transpire into the "hall of fame" of the most productive researchers. The third research question raised in this study focuses on the production of knowledge in the United States and non-U.S., investigating the geographic proportions of the most productive scholars in the three research fields:

RQ3 Are there statistically significant differences between geographical proportions among top 100 scholars (a) in each field and (b) across fields?

Diversity in publication trajectories

Academically, diversity typically refers to the multifariousness of representation of different academic agents, viewpoints, methods, research topics, genders, ethnicities, or geopolitics (Shore et al., 2009; Zanoni et al., 2010). Therefore, diversity has been measured at different levels of analysis, such as editorial boards (Lauf, 2005), research production (Efranmanesh et al., 2017), methodological approaches (Demeter & Goyanes, 2021), or interdisciplinarity (Gibbons, 1994; Van Noorden, 2015), mainly adopting and modifying Rao's (Leydesdorff et al., 2019; Rao, 1982; Stirling, 2007) or Simpson's (Hill, 1973)

indices. Common to these measurements, the diversity of a given sample is higher when there are more possible values for a given variable and when these values are equally distributed.

Besides technical studies on diversity, research has focused on the effects of interdisciplinarity on specific scientometric indicators, such as productivity or impact (Abramo et al., 2018; Chakraborty et al, 2015; Zhang et al, 2018). Jamali et al. (2020), for instance, have associated diversity to career choices, suggesting that scholars can decide "focusing on one or a few research topics or areas, or they might diversify their research activities (Jamali et al., 2020., p. 131). According to the authors, a focus on a limited number of topics can result in accumulation of great expertise, while focusing on more diverse topics may result in better knowledge transfer and problem-solving research (Jamali et al., 2020).

Moreover, prior research has observed that higher diversity can result in the emancipation of the marginalized (Khalifa & Quattrone, 2008) as raising diversity might help to give voice to many different people, including members of historically oppressed groups. Several studies have also suggested that diversity might increase institutions' performance, raise the level of productivity, innovation and problem-solving capacities (Shore et al., 2009). However, while there is broad research on diversity scores at different academic levels, little is known about scholars' diversity scores in terms of their publication trajectory. Specifically, it can be assumed that prolific scholars with a higher diverse publication diversity can provide a more diverse set of knowledge, a "skill mix" (Carter et al., 2003). Like diverse research groups, individual academics with diverse publication trajectories bear a broader set of theoretical and methodological knowledge, handle more viewpoints and perspectives, and thus show better problem-solving capabilities (Goyanes et al., 2020; Dhanani & Jones, 2017). Hence, the following research question inquiries about the publication trajectories of the most prolific scholars and presumed disciplinary differences in their publication diversity.

RQ4 Are there statistically significant differences between publication diversity indices and the field of study (Communication, Political Science, and Psychology).

Gender, geopolitics, and publication diversity

While there is no specific research focusing on the linkage between gender and publication diversity, the literature discussing potential gender-based differences at different academic levels has implicitly suggested that the publication habits of male and female scholars differ. For example, these differences have been widely discussed at the level of resource allocation (Duch et al., 2012), collaborations and networking behaviors (Abramo et al., 2013), role stereotypes (Westerwick & Glynn, 2013), or academic specialization (Leahey, 2006). However, little is known about gender differences and publication diversity among the most prolific scholars. Accordingly, the fifth research question investigates if publication diversity scores are also affected by gender among the most prolific scholars in the analyzed disciplines and the pooled sample.

RQ5 Are there statistically significant gender differences in publication diversity in (a) communication, (b) political science, (c) psychology, and (d) in the pooled sample

Many studies have shown that academic culture and publication practices vary across geographical locations (e.g., Pooley & Park, 2013; Wang, 2011). However, little is known

if these differences are relevant to publication diversity patterns among the most prolific scholars across fields. Consequently, the sixth research question is related to the possible association between geographical location and publication diversity.

RQ6 Are there statistically significant differences between geographical locations in publication diversity in (a) communication, (b) political science, (c) psychology, and (d) in the pooled sample

Finally, this study also explores whether gender and geographical location affect publication diversity across different fields. While there is little research on how geographic position and gender are related to publication diversity, former studies suggested that geographical regions and gender differences might interact. Specifically, fewer gender inequalities have been found in the Western world in general (Chan & Torgler, 2020; Goyanes & Demeter, 2020) and in the US (Westerwick & Glenn, 2013) than in other parts of the world. To understand the potential moderating effect on gender in explaining the relationship between geographical location and publication diversity, we propose the seventh research question:

RQ7 Does diversity depends on the levels of gender and geographical location in (a) communication, (b) political science, (c) psychology, and (d) in the pooled sample.

Method

Data collection

First, a list of the most productive scholars ($n = 100$; 300 in total) in Communication, Political Science, and Psychology (year 2017 ~ 2020) and their academic information (i.e., affiliation, country/region, Scopus author profile link) were exported from SciVal, a platform that works with Scopus data (Sandler & Gladyrev, 2020; Santos et al., 2020). In SciVal, productivity is measured by the number of Scopus-indexed publication in the analyzed period. Each scholar's publication records containing paper titles and journals titles were downloaded. These fields were selected as prior studies have suggested substantial interconnections (Leydesdorff & Probst, 2009). For data preprocessing and cleaning, the duplicated journal items were first merged.

Second, book chapters, conference proceedings, editorials, book reviews, and lecture notes were removed from the records, as the study only considered journal peer-reviewed manuscripts. Third, each journal was assigned with an I.D. and classified into one of four subject areas: 1 = Communication, 2 = Psychology, 3 = Political Science, 4 = others, which is based on the classification scheme on Scimago Journal & Country Rank. When a journal was indexed in more than one field, and in order to present data compellingly (i.e., avoiding bi-partite graphs) only the first category was selected. For example, the *International Journal of Press/Politics* (IJPP) was cross-listed in Communication and Political Science, but only Communication was considered. Finally, a journal pool was constructed, containing the journal title, I.D. number, and disciplinary category. The final sample yielded 4407 journals (231 in communication, 660 in psychology, 459 in political science, and 3057 periodicals indexed in "other categories"). For each scholar, gender (1 = Male, 2 = Female),

geographical location (1 = U.S, 2 = Non-U.S), and the field in (i.e., Communication, Psychology, and Political Science) were listed.

To test the reliability of data coding, we conducted two intercoder reliability tests: (1) for journal codes and the number of papers, and (2) for journal categories. In defining the appropriate sample size, we followed the suggestions of Neuendorf ([2017]). Accordingly, random subsets of the sample (number of papers: $N = 394$; journal categories: $N = 138$), were coded by two independent coders, and then Krippendorff alpha reliability tests were conducted. In both cases, the reliability test found substantive reliability with (1) $\alpha = 0.932$ and (2) $\alpha = 0.763$.

To compute the publication diversity of selected scholars, the total number of papers in different journals were stored to calculate Simpson's reciprocal diversity indices (SRDI; range: 0 – 1; SRDI = 1/D, where $D = \frac{\Sigma n(n-1)}{N(N-1)}$). This measurement shows the degree of concentration when items are classified into categories. In the formula, n refers to the total number of items in each category, while N refers to the total number of items in all categories.

Diversity values are considered higher when papers are proportionally distributed across different journals and are lower when papers are distributed in the same few journals. In other words, balanced and distributed publication patterns result in greater diversity. Publication diversity was measured at journal level. While diversity is often measured in terms of multidisciplinarity, we suggest that, considering the "post-disciplinary" nature (Waisbord, [2019]) or the "balkanization" (Ang et al., [2019]) of many disciplines, in which different research areas are categorized under an "umbrella field", journal level diversity may be and instructive dimension to understand scholars' research pluralism.

Since the focus of the study is the most productive scholars, all of them are highly diverse in their trajectories, meaning that their diversity values and number of published papers are similar. The number of papers published range is 16–66, with an average production of 23.18 (SD = 7.61) papers. Similarly, the diversity indices range from 0.90 to 1, with an average diversity score of 0.91 (SD = 1.23). Accordingly, the diversity scores and number of articles were not statistically significant correlated ($r = 0.32$; $p = 0.83$).

Data analysis

Different techniques of data analysis were considered for answering our research questions and testing our hypothesis. To answer RQ1, we ran descriptive statistics based on frequencies of journals within fields and in the pooled sample. For RQ2, we implemented a social network analysis. The network analysis was conducted using the publication records of the scholars under analysis. In the network, nodes represent journals, and edges connect journals selected for publication by a given author. For example, if an author published in journals 1, 25, and 392, then these edges were added, 1:25, 1:392, and 25:392. As a result, edges represent authors' decisions to publish in a given set of journals. This method enabled us to graphically represent the network of publication trends and journal choice across and within fields.

To test H1a, b, c, and d, we ran a series of χ^2 Goodness-of-fit tests to examine gender proportions within fields and in the pooled sample. Likewise, for answering RQ3a and RQ3b, we ran a series of χ^2 to examine geographical proportions within and between fields. RQ4, RQ5, and RQ6 were tackled progressively. First, we found that diversity scores were not normally distributed in the three fields (Shapiro–Wilk's test, p < 0.05).

Accordingly, we decided to run the non-parametric alternative of the one-way ANOVA, i.e., the Kruskal–Wallis H test, to examine field differences (RQ4).

Similarly, for answering RQ5 and RQ6, we first checked the normality of our dependent variable depending on the gender (male vs. female) of the most productive scholars and the geographical location (the U.S. vs. non-US). We found that diversity scores were non-normally distributed across the board (Shapiro–Wilk's test, $p < 0.05$). As a result, we implemented the non-parametric alternative of the independent-samples t-test, i.e., the Mann–Whitney U. Finally, to answer RQ7, we ran a more stringent test of the two-way ANOVA using bootstrapping and reporting confidence intervals (1000 bootstrap samples, bias-corrected and accelerated [BCa]).

Results

Descriptive analysis

RQ1 asks where the most productive scholars publish (frequencies of journals across fields) their papers. Table 1 lists the top 20 journals in which the most prolific scholars across three areas (Communication, Political Science, and Psychology) published their research. The top five journals are all from the field of Psychology. The Psychology journal *Personality and Individual Differences* was ranked as the most popular publication outlet

Table 1 Top 20 Journals Where the Most Productive Scholars Published (across Communication, Psychology and Political Science)

Journal name	No. of papers
Personality and Individual Differences	933
Frontiers in Psychology	512
Asian Journal of Psychiatry	382
Indian Journal of Psychiatry	246
Journal of Personality and Social Psychology	231
Health Communication	230
International Journal of Mental Health and Addiction	225
Plos One	216
Body Image	205
Journalism Studies	185
Psychiatry Research	181
Archives of Sexual Behavior	179
Communication Education	162
Journalism	158
Communication Research	156
Behaviour Research and Therapy	155
International Journal on Disability and Human Development	151
Journal of Behavioral Addictions	148
International Journal of Adolescent Medicine and Health	141
Journal of Communication	137

with 933 papers, followed by another two psychology journals, *Frontiers in Psychology* (512 papers) and *Asian Journal of Psychiatry* (382 papers). The total amount of papers published in the top 5 psychology journals (2304 papers) takes up 28.9% of all the papers published in the top 50 journals (7970 papers).

Table 2 shows that in the field of communication, *Health Communication* (230 papers)*, Journalism Studies* (185 papers) and *Communication Education* (162 papers)*, Journalism* (158 papers)*, and Communication Research* (156 papers) are the five most popular communication journals. Again, as we already mentioned, Table 3 shows that *Personality and Individual Differences* (933 papers)*, Frontiers in Psychology* (512 papers)*, Asian Journal of Psychiatry* (382 papers), *Indian Journal of Psychiatry* (246 papers), and *Journal of Personality and Social Psychology* (231 papers) are the most popular psychology journals. Finally, Table 4 provides the *British Journal of Social Work* (122 papers), *Public Administration Review* (99 papers), *Journal of Applied Behavior Analysis* (98 papers), *Journal of Criminal Justice* (92 papers), and *Children and Youth Services Review* (85 papers) are the most published journal outlets among the most productive political science scholars.

Trajectories of the most productive scholars – network analysis (RQ2)

The trajectories of the most productive scholars constituted a full graph of 4407 nodes and 482.136 edges. Two hundred thirty-one journals are represented in communication, 660 in psychology, 459 in political science, and the remaining 3037 journals are categorized as 'others.' General graph properties are reported in Table 5.

Figure 1 represents the entire network by different subfields. The graph shows that the three different disciplines are relatively autonomous. More importantly, the graph also

Table 2 Top 20 communication journals where the most productive scholars published

Journal name	No. of papers
Health Communication	230
Journalism Studies	185
Communication Education	162
Journalism	158
Communication Research	156
Journal of Communication	137
New Media and Society	132
Digital Journalism	117
Journalism Practice	112
Journal of Health Communication	110
Journalism and Mass Communication Quarterly	106
Mass Communication and Society	97
International Journal of Communication	96
Computers in Human Behavior	92
Information Communication and Society	87
Public Relations Review	85
Communication Research Reports	84
International Journal of Press Politics	82
Human Communication Research	71
Communication Monographs	68

Table 3 Top 20 psychology journals where the most productive scholars published

Journal name	No. of papers
Personality and Individual Differences	933
Frontiers in Psychology	512
Asian Journal of Psychiatry	382
Indian Journal of Psychiatry	246
Journal of Personality and Social Psychology	231
International Journal of Mental Health and Addiction	225
Plos One	216
Body Image	205
Psychiatry Research	181
Archives of Sexual Behavior	179
Behaviour Research and Therapy	155
International Journal on Disability and Human Development	151
Journal of Behavioral Addictions	148
International Journal of Adolescent Medicine and Health	141
International Journal of Environmental Research and Public Health	131
Psychological Reports	131
Journal of Positive Psychology	125
Indian Journal of Psychological Medicine	122
Personality and Social Psychology Bulletin	116
Current Psychology	110

Table 4 Top 20 political science journals where the most productive scholars published

Journal name	No. of papers
British Journal of Social Work	122
Public Administration Review	99
Journal of Applied Behavior Analysis	98
Journal of Criminal Justice	92
Children and Youth Services Review	85
International Journal of Public Administration	72
Electoral Studies	69
Australian Journal of Public Administration	68
Journal of Public Administration Research and Theory	64
Journal of Occupational Science	63
Aggression and Violent Behavior	61
Policy Studies Journal	59
American Journal of Political Science	59
Health and Social Care in The Community	59
Public Administration	57
European Journal of Political Research	55
Canadian Journal of Political Science	54
Crime and Delinquency	54
Policy and Society	53
Age and Ageing	53

Table 5 Network properties of fields

	Average Degree	Diameter	Density	Modularity	Number of communities	Avg clustering coefficient	Clustering coefficient
Full network	89.817	5	0.038	0.432	39	0.772	0.7673
Communication	40.45	4	0.094	0.33	9	0.834	0.8837
Psychology	101.757	3	0.077	0.33	6	0.785	0.7849
Sociology & Political Science	59.513	5	0.053	0.591	22	0.838	0.834

Full Network
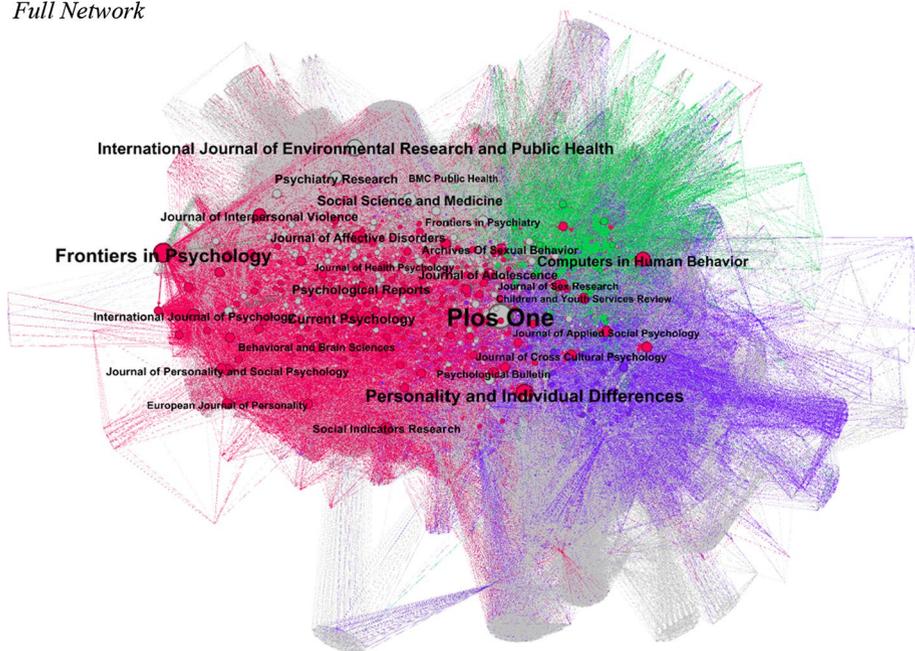
Fig. 1 Full network. Green = Communication, Red = Psychology, Blue = Sociology & Political Science, Grey = Other)

shows that the number of publications in psychology journals significantly exceeds the number of published papers in communication and political science. However, *Plos One*, a journal that is not indexed in any of the three categories, is one of the most popular publications for the most productive scholars in all three disciplines.

A more detailed representation of the communication network (Fig. 2) shows the most popular journals for the most prolific researchers. The graph shows that the most typical publication outlets are reputable communication journals such as *Journal of Communication*, *Communication Research*, or *Journalism and Mass Communication Quarterly*. The most productive scholars also publish in different political science and psychology
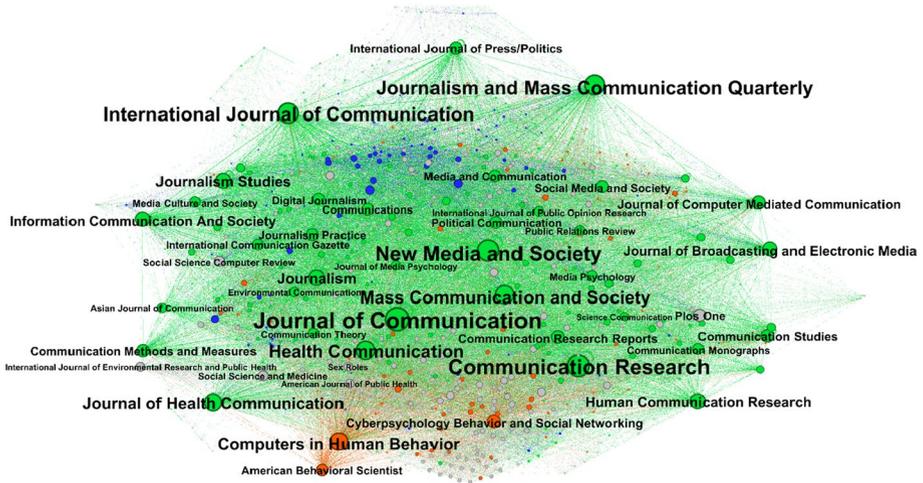
Communication Network

Fig. 2 Communication Network. Green = Communication, Red = Psychology, Blue = Sociology & Political Science, Grey = Other)

journals. However, most of these journals are categorized in either communication and political science (such as the International Journal of Press/Politics) or in communication and psychology (such as Cyberpsychology, Behavior, and Social Networking). The graph also shows that it is not typical for communication scholars to publish in journals different from the usual suspects in communication, political science, and psychology.

The network of psychologists shows a rather different structure. The most productive psychology scholars typically do not publish in either communication or political science journals (Fig. 3). They focus instead on psychology journals or journals related to natural sciences, typically medicine and psychiatry.

Finally, political science demonstrates the most interdisciplinary network: the most prolific political scientists typically publish in political science journals and psychology journals (Fig. 4).

To test H1, we adjusted a χ^2 Goodness-of-fit test. The expected frequency for each field was 50, while for the pooled sample was 150. As shown in Table 6, results indicate that gender was not similarly distributed in each area and in the pooled sample. It's demonstrated that males are over-represented. Thus, H1a, H1b, H1c, and H1d were supported.

When it comes to geographical proportions (RQ3), our findings (Table 7) illustrate that the number of non-US scholars was statistically different, and higher, for political science ($\chi^2(1) = 6.760$, $p < 0.01$), psychology ($\chi^2(1) = 27.040$, $p < 0.001$), and in the pooled sample ($\chi^2(1) = 20.280$, $p < 0.001$), but not for communication ($\chi^2(1) = 0.000$, $p = 1.00$).

For answering if there are statistically significant differences between publication diversity scores in communication ($n = 100$; Mdn = 0.948), political science ($n = 100$; Mdn = 0.964), and psychology ($n = 100$; Mdn = 0.952), we ran a Kruskal–Wallis test (RQ4). Distributions of diversity scores were similar for the three fields, as assessed by visual inspection of a boxplot. Median diversity scores were statistically significant between groups, $\chi^2(2) = 6.561$, $p = 0.038$. Post hoc analyses were performed using Dunn's procedure (1964) with a Bonferroni correction for multiple comparisons. Results show a
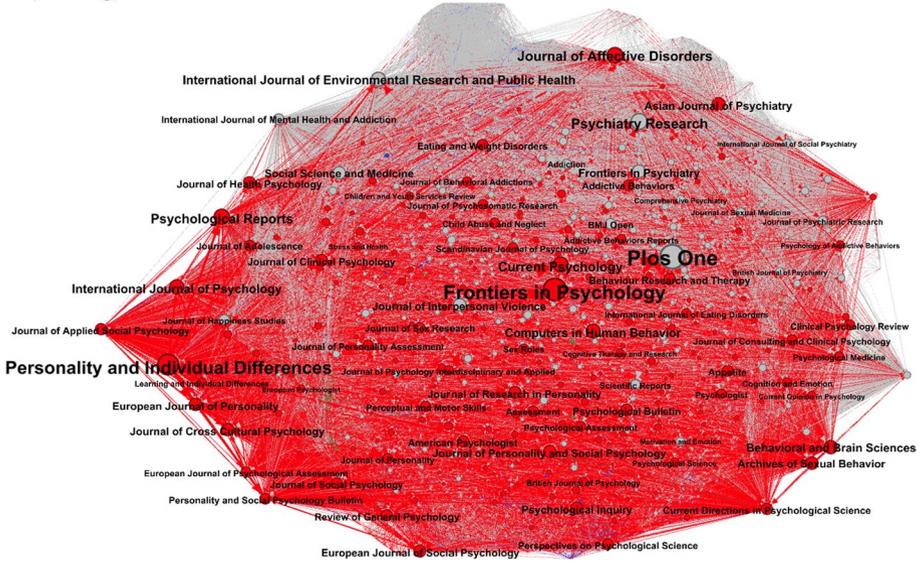
Psychology Network

Fig. 3 Psychology network. Green＝Communication, Red＝Psychology, Blue＝Sociology & Political Science, Grey＝Other)
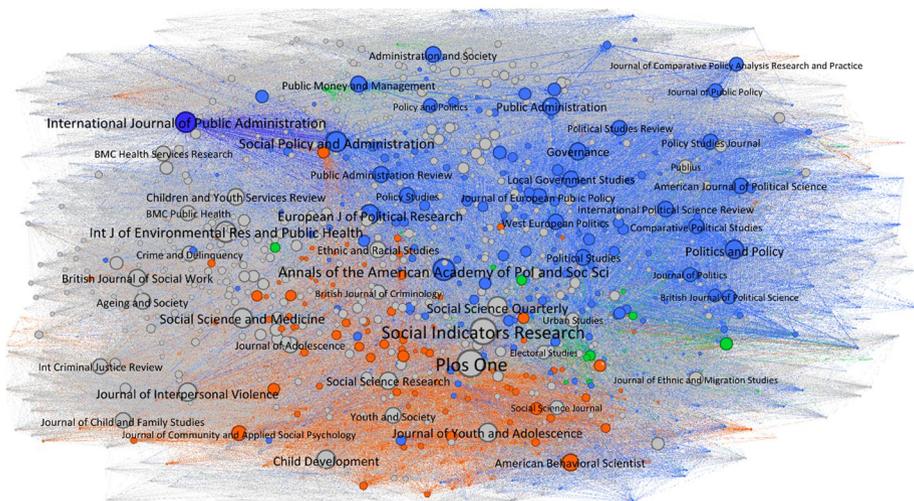
Political Science Network

Fig. 4 Political science network. Green＝Communication, Red＝Psychology, Blue＝Sociology & Political Science, Grey＝Other)

Table 6 Distribution of the Most Productive Scholars Across Fields According to Their Gender

	Male	Female	Expected	Residual	$\chi^2(df)$
Communication	65	35	50	± 15	9000(1)**
Political Science	82	18	50	± 32	40,960(1)***
Psychology	84	16	50	± 34	46,240(1)***
Pooled sample	231	69	150	± 81	87,480(1)***

*p < 0.05
**p < 0.01
***p < 0.001

Table 7 Distribution of geographical locations among the most productive scholars

	U.S.	non-US	Expected	Residual	$\chi^2(df)$
Communication	50	50	50	0	.000(1)
Political Science	37	63	50	± 13	6.760(1)**
Psychology	24	76	50	± 26	27.040(1)***
Pooled sample	111	189	150	± 39	20.280(1)***

*p < .05
**p < 0.01
***p < 0.001

Table 8 Gender differences in diversity scores across fields and in the pooled sample

	Male (Mdn)	Female (Mdn)	Field	U	Z	p
Communication	.948	.947	.948	1046.500	− 0.658	0.511
Political Science	.963	.968	.964	574.500	− 1.467	0.142
Psychology	.949	.954	.952	652.500	− 0.183	0.855
Pooled sample	.954	.956	.954	7319.500	− 1.028	0.304

marginal difference between communication and political sciences ($p = 0.055$). Differences between communication and psychology ($p = 1.000$) and psychology and political sciences ($p = 0.122$) were not statistically significant.

For answering RQ5, we ran a Mann–Whitney U Test (differences in diversity scores between males and females). Distributions of diversity scores among females and males were similar across fields. As reflected in Table 8, there were no significant differences in diversity scores between males and females in any area, neither on the pooled sample, $U = 7319.500$, $z = − 1.028$, $p = 0.308$.

To answer if there are statistically significant differences between geographical locations in publication diversity in (a) communication, (b) political science, (c) psychology, and (d) in the pooled sample (RQ6), we also ran a Mann–Whitney U Test. Distributions of diversity scores among geographical regions were similar across fields. There were no significant differences in diversity scores between U.S. and non-US scholars in none of the areas, neither on the pooled sample, $U = 5920$, $z = − 1.336$, $p = 0.181$ (Table 9).

Table 9 Geographical differences in diversity scores across fields and in the pooled sample

	U.S. (Mdn)	Non-US (Mdn)	Field	U	Z	p
Communication	.940	.959	.948	1026.500	− 1.541	.123
Political Science	.960	.967	.964	1024	− 1.010	.312
Psychology	.954	.951	.952	831	− .654	.513
Pooled sample	.948	.957	.954	9520	− 1.336	.181

For answering RQ7 we ran a more stringent analysis, based on a bootstrapped two-way ANOVA (1000 bootstrap samples, bias corrected and accelerated [BCa]). According to our findings, neither in each individual field nor the pooled sample, there was a significant interaction effect of gender and geographical location over diversity scores: a) Communication, $F(0.790, 1) = 0.008$, $p = 0.376$, partial $\eta^2 = 0.008$), (b) Psychology, $F(1, 96) = 0.256$, $p = 0.614$, partial $\eta^2 = 0.003$, c) Political Science, $F(1, 96) = 0.076$, $p = 0.784$, d) pooled sample, $F(1, 296) = 0.126$, $p = 0.722$, partial $\eta^2 = 0.000$ (Table 10).

Table 10 Bootstrap for the estimated marginal means of the interaction between gender and geographical location over diversity scores

Geographical location	Gender	Mean	BCa 95% CI
Communication			
USA	Male	.914 (.021)	.860 – .948
Non-USA	Female	.926 (.014)	.890 – .951
USA	Male	.909 (.027)	.839 – .947
Non-USA	Female	.959 (.007)	.943 – .974
Political Science			
USA	Male	.874 (.037)	.786 – .942
Non-USA	Female	.897 (.024)	.844 – .944
USA	Male	.964 (.007)	.949 – .982
Non-USA	Female	.963 (.011)	.937 – .989
Psychology			
USA	Male	.933 (.012)	.904 – .956
Non-USA	Female	.920 (.013)	.889 – .944
USA	Male	.973 (.008)	.959 – .989
Non-USA	Female	.929 (.014)	.898 – .955
Pooled			
USA	Male	.904 (.016)	.867 – .934
Non-USA	Female	.914 (.010)	.890 – .935
USA	Male	.927 (.021)	.873 – .955
Non-USA	Female	.959 (.006)	.935 – .963

Standard errors in brackets, bootstrap results are based on 1000 bootstrap samples, bias-corrected and accelerated

Discussion

Building on research revolving around the most productive scholars in three interrelated disciplines and their publication trajectories, our study provides a complex approach on how gender, geopolitical, and publication diversity are related across different academic fields. Our first two research questions sought to shed light on the publication patterns of the 100 most productive scholars in Communication, Political Science and Psychology. Our main contribution regarding these scholars' publication patterns relies on demonstrating academic interconnectedness (Leydersdorff & Probst, 2009), yet not necessarily bilateral relations.

First, our findings show that communication scholars are more prone to publish in psychology and political science journals than the other way around. In contrast, psychologists' publications are targeted to both psychology and life science periodicals, typically neglecting either communication or political science journals. This last finding is aligned with previous research findings suggesting that the field of psychology is distancing from soft sciences and turning instead to nature and life sciences areas (Benjafield, 2020; Wieczorek et al., 2021). Political science is the most open field, with blurred disciplinary boundaries (Leydersdorff & Probst, 2009), and is equally open to psychology, communication, and other disciplines. In short, while there is a bilateral relation between political science and communication, these fields generally have unilateral connections to psychology.

Our second contribution relates to gender and geopolitical inequalities in publication diversity. In line with the corresponding literature (Aguinis et al., 2018; Fox & Nikivincze, 2021), we hypothesized that the proportion of male scholars would be significantly higher amongst the most prolific scholars in both the full sample and in the individual fields. Indeed, we found a significant overrepresentation of male scholars with a 77% male dominance in the pooled sample; the gender bias reached the highest point in the case of Psychology (85% male scholars) and Political Science (82% male scholars), while Communication showed a more balanced, but still biased gender representation with 65% male scholars. Thus, in each discipline, and especially in psychology and political science, it is significantly less likely that female scholars were listed among the most productive academics. Again, in line with former research, these findings show gender bias when it comes to academic productivity (Cole & Zuckermann, 1984; Fox & Nikivincze, 2021; Xie & Shauman, 2003).

Geopolitically, we found a notable Americanization among the most prolific scholars, especially in Communication (Delgado & Rapiso 2013; Goyanes & Demeter, 2020), while the picture in Psychology and Political Science is more balanced. In this regard, while former studies typically analyzed the representation of geopolitical regions in the authorship of a different set of journals (Demeter, 2019; Lauf, 2005), our study focused on geographical proportions among the most prolific scholars. We found that non-American scholars outnumber US-based researchers except in the field of Communication. However, readers should be aware of the codification scheme. With a different coding protocol (for instance, at country level), findings will side for the US.

Finally, testing gender, geopolitical, and field differences in publication diversity, our findings suggest that the most productive scholars have much more in common than differences across fields. Indeed, neither the field, gender, geographic location, or the interaction between gender and geographic location significantly affects publication diversity. In the three areas under examination, the publication records of the most

productive scholars are exceptionally diverse. With these results, our paper contributes to the ongoing discussion on publication bias by suggesting a more complex description of inequalities amongst the most prolific scholars. We found that differences in gender, location, or discipline among the most productive CSIC scholars are no longer critical in publication diversity: once listed among the most productive scholars, female and non-American researchers hold similar publication diversity scores to males and American peers.

Limitations

All the findings above, albeit important, carry several limitations inherent to the study, which reveal some constraints but offer opportunities for future research directions. First, to determine the most productive authors, we used SciVal, which works with Scopus data. Alternatively, future studies may focus on Web of Science data, which might define a different set of authors and disciplinary categorization. We chose Scopus/SciVal because it is much more inclusive than the Web of Science. Still, future research should decide if the main patterns of diversity and interdisciplinarity between the three disciplines remain with data from the Web of Science.

The second limitation of the study is that count data come from journal titles on the author level. Consequently, if two prolific scholars authored a given paper, it yields two. Notwithstanding, future research focusing on paper-level diversities can extend our results by showing the frequencies of published papers instead of reporting authors' choices. Moreover, our findings suggest that the most interdisciplinary field is political science. Authors in this discipline publish significantly in both psychology and journals that are not indexed in the three disciplines under analysis. This result might be partially explained by the fact that Scopus and Scimago categorize political science ambiguously, as they consider two main categories: "political science and international relations" and "sociology and political science." However, these categorizations cannot fully explain the publication trajectories of the most prolific political science scholars, as many of the most popular journals in which they have published are not indexed in any categories related to political science.

Finally, some of the most productive scholars might be ranked as such due to a potential large number of published other-than-research papers, such as book chapters, editorials, book reviews or research notes. However, our analysis only considered research papers. Thus, it might be possible, although not very plausible, that some of the most productive scholars have limitedly published research articles. Future research might address this limitation by, for instance, focusing on a smaller sample, implementing a manual content analysis.

References

Abramo, G., D'Angelo, C. A., & Murgia, G. (2013). Gender differences in research collaboration. *Journal of Informetrics, 7*(4), 811–822.

Abramo, G., D'Angelo, C. A., & Zhang, L. (2018). A comparison of two approaches for measuring interdisciplinary research output: The disciplinary diversity of authors vs the disciplinary diversity of the reference list. *Journal of Informetrics, 12*(4), 1182–1193.

Aguinis, H., Ji, Y. H., & Joo, H. (2018). Gender productivity gap among star performers in STEM and other scientific fields. *Journal of Applied Psychology, 103*(12), 1283.

Ang, P. H., Knobloch-Westerwick, S., Aguaded, I., Muñoz-Uribe, J.-F., Wasserman, H., & Athique, A. (2019). Intellectual Balkanization or Globalization: The Future of Communication Research Publishing. *Journalism & Mass Communication Quarterly, 96*(4), 963–979. https://doi.org/10.1177/10776 99019878461

Arnett, J. J. (2008). The neglected 95%: Why American psychology needs to become less American. *American Psychologist, 63*, 602–614.

Bajwa, N.u.H., & König, C.J. (2019). How much is research in the top journals of industrial/organizational psychology dominated by authors from the U.S.? *Scientometrics, 120*, 1147–1161. https://doi.org/10.1007/s11192-019-03180-2

Baruch, Y. (2001). Global or North American? A geographical based comparative analysis of publications in top management journals. *International Journal of Cross Cultural Management, 1*(1), 109–126.

Begeny, J. C., Levy, R. A., Hida, R., Norwalk, K., Field, S., Suzuki, H., et al. (2018). Geographically representative scholarship and internationalization in school and educational psychology: A bibliometric analysis of eight journals from 2002–2016. *Journal of School Psychology, 70*, 44–63. https://doi.org/10.1016/j.jsp.2018.07.001

Benjafield, J. G. (2020). Vocabulary sharing among subjects belonging to the hierarchy of sciences. *Scientometrics, 125*, 1965–1982.

Bolkan, S., Griffin, D. J., Holmgren, J. L., & Hickson, M. (2012). Prolific scholarship in communication studies: five years in review. *Communication Education, 61*(4), 380–394.

Bonitz, M., Bruckner, E., & Scharnhorst, A. (1997). Characteristics and impact of the Matthew effect for countries. *Scientometrics, 40*(3), 407–422.

Breuning, M., & Sanders, K. (2007). Gender and journal authorship in eight prestigious political science journals. *P.S.: Political Science & Politics, 40*(2), 347–351.

Briscoe-Palmer, S., & Mattocks, K. (2020). Race, Intersectionality, and Diversity in European Political Science. In: Boncourt, T., Engeli, E., & Garzia, D. (eds). *Political Science in Europe. Achievements, Challenges, Prospects.* Rowman & Littlefield International. Pp. 199–217.

Brown, N., Horiuchi, Y., Htun, M. N., & Samuels, D. J. (2020). Gender gaps in perceptions of political science journals. *P.S.: Political Science & Politics, 53*(1), 114–121.

Burroughs, N. F., Christophel, D., Addy, J. C., & McGreal, E. A. (1989). Top published authors in communication studies 1915–1985. *Association for Communication Administration Bulletin, 67*, 37–45.

Byrnes, J. P., & McNamara, C. C. (2001). Evaluating doctoral programs in the developmental sciences. *Developmental Review, 21*, 326–354.

Carter, D., Simkins, B., & Simpson, W. (2003). Corporate governance, board diversity, and firm value. *Financial Review, 38*, 33–53.

Chakraborty, T., Tammana, V., & Ganguly, N. (2015). Understanding and modeling diverse scientific careers of researchers. *Journal of Informetrics, 9*(1), 69–78.

Chan, H. F., & Torgler, B. (2020). Gender differences in performance of top cited scientists by field and country. *Scientometrics, 125*(3), 2421–2447.

Cole, J., & Zuckerman, H. (1984). The productivity puzzle: Persistenceand change in patterns of publication among men and womenscientists. In M. W. Steinkamp & M. L. Maehr (Eds.), *Advances in Motivation and Achievement* (Vol. 2, pp. 217–258). JAI Press, Greenwich.

Curry, M. J., & Lillis, T. (2018). *Global academic publishing. Policies, perspectives, and pedagogies.* Bristol: Multilingual Matters.

Delgado, E., & Repiso, R. (2013). El impacto de las revistas de comunicación: Comparando Google Scholar Metrics Web of Science y Scopus. *Comunicar, 21*(41), 45–52.

Demeter, M., & Goyanes, M. (2021). A world-systemic analysis of knowledge production in international communication and media studies: the epistemic hierarchy of research approaches. *The Journal of International Communication, 27*(1), 38–58.

Dhanani, A., & Jones, M. J. (2017). Editorial boards of accounting journals: Gender diversity and internationalisation. *Accounting, Auditing & Accountability Journal, 30*(5), 1008–1040.

Duch, J., Zeng, X. H. T., Sales-Pardo, M., Radicchi, F., Otis, S., Woodruff, T. K., & Nunes Amaral, L. A. (2012). The possible role of resource requirements and academic career-choice risk on gender differences in publication rate and impact. *PLoS ONE, 7*(12), e51332. https://doi.org/10.1371/journal.pone.0051332

Demeter, M. (2019). The world-systemic dynamics of knowledge production: The distribution of transnational academic capital in the social sciences. *Journal of World-Systems Research, 25*(1), 112–144.

Efranmanesh, M., Tahira, M., & Abrizah, A. (2017). The publication success of 102 nations in Scopus and the performance of their Scopus-indexed journals. *Publishing Research Quarterly, 33*(4), 421–433.

Eloy, J. A., Svider, P., Chandrasekhar, S. S., Husain, Q., Mauro, K. M., Setzen, M., & Baredes, S. (2013). Gender disparities in scholarly productivity within academic otolaryngology departments. *Otolaryngology Head and Neck Surgery, 148*(2), 215–222.

Fox, M. F., & Nikivincze, I. (2021). Being highly prolific in academic science: Characteristics of individuals and their departments. *Higher Education, 81*, 1237–1255.

Freelon, D. (2013). Co-citation map of 9 comm journals, 2003–2013. Retrieved from http://dfreelon.org/2013/09/05/co-citation-map-of-9-comm-journals-2003–2013/

Gibbons, M., et al. (1994). *The new production of knowledge*. Sage.

Goyanes, M. (2020). Editorial boards in communication sciences journals: Plurality or standardization?. *International communication gazette, 82*(4), 342–364.

Goyanes, M., & De-Marcos, L. (2020). Academic influence and invisible colleges through editorial board interlocking in communication sciences: a social network analysis of leading journals. *Scientometrics, 123*(2), 791–811.

Goyanes, M., & Demeter, M. (2020). How the geographic diversity of editorial boards affects what is published in JCR-ranked communication journals. *Journalism & mass communication quarterly, 97*(4), 1123–1148.

Goyanes, M., & Demeter, M. (2021). Dr. Excellent: The Systemic and Personal Conditions for Being an Academic Star in Communication Studies. *Kome: An International Journal of Pure Communication Inquiry*, 1–16.

Goyanes, M., Demeter, M., Grané, A., Albarrán-Lozano, I., & Gil de Zúñiga, H. (2020). A mathematical approach to assess research diversity: Operationalization and applicability in communication sciences, political science, and beyond. *Scientometrics, 125*(3), 2299–2322.

Günther, E., & Domahidi, E. (2017). What communication scholars write about: An analysis of 80 years of research in high-impact journals. *International Journal of Communication, 11*, 3051–3071.

Heilbron, J., Sorá, G., & Boncourt, T. (2018). *The social and human sciences in global power relations*. Palgrave Macmillan.

Hickson, M., Stacks, D. W., & Amsbary, J. H. (1989). An analysis of prolific scholarship in speech communication, 1915–1985: Toward a yardstick for measuring research productivity. *Communication Education, 38*, 230–236.

Hickson, M., Stacks, D. W., & Amsbary, J. H. (1993). Active prolific scholars in communication studies: Analysis of research productivity II. *Communication Education, 42*(3), 224–233.

Hill, M. O. (1973). Diversity and evenness: a unifying notation and its consequences. *Ecology, 54*(2), 427–432.

Jamali, H. R., Abbasi, A., & Bornmann, L. (2020). Research diversification and its relationship with publication counts and impact: A case study based on Australian professors. *Journal of Information Science, 46*(1), 131–144. https://doi.org/10.1177/0165551519837191

Jones, L. V., Lindzey, G., & Coggeshall, P. E. (1982). *An assessment of research-doctorate programs in the United States: Social and behavioral sciences*. National Academy Press.

Jones, J., Carlton, J., Fong, L. G., Torres, J. H., et al. (2010). Productivity in educational psychology journals from 2003 to 2008. *Contemporary Educational Psychology, 35*(1), 11–16.

Joy, S. (2006). What Should I Be Doing, and Where Are They Doing It? Scholarly Productivity of Academic Psychologists. *Perspectives on Psychological Science, 1*(4), 346–364.

Khalifa, R., & Quattrone, P. (2008). The governance of accounting academia: Issues for a debate. *European Accounting Review, 17*(1), 65–86.

Knobloch-Westerwick, S. C., Glynn, J., & Huge, M. (2013). The matilda effect in science communication: an experiment on gender bias in publication quality perceptions and collaboration interest. *Science Communication, 35*(5), 603–625. https://doi.org/10.1177/1075547012472684

Knobloch-Westerwick, S., & Glynn, C. J. (2013). The Matilda effect –Role congruity effects on scholarly communication: A citation analysis of Communication Research and Journal of Communication articles. *Communication Research, 40*(1), 3–26. https://doi.org/10.1177/0093650211418339

Lauf, E. (2005). National diversity of major international journals in the field of communication. *Journal of Communication, 55*, 19–151.

Leahey, E. (2006). Gender differences in productivity: Research specialization as a missing link. *Gender & Society, 20*(6), 754–780. https://doi.org/10.1177/0891243206293030

Lee, S., & Bozeman, B. (2005). The impact of research collaboration on scientific productivity. *Social Studies of Science, 35*(5), 673–702.

Leydesdorff, L., & Probst, C. (2009). The delineation of an interdisciplinary specialty in terms of a journal set: The case of communication studies. *Journal of the American Society for Information Science and Technology, 60*(8), 1709–1718.

Leydesdorff, L., Wagner, C. S., & Bornmann, L. (2019). Interdisciplinarity as diversity in citation patterns among journals: Rao-Stirling diversity, relative variety, and the Gini coefficient. *Journal of Informetrics, 13*(1), 255–269.

Martínez, R. S., Floyd, R. G., & Erichsen, L. W. (2011). Strategies and attributes of highly productive scholars and contributors to the school psychology literature: Recommendations for increasing scholarly productivity. *Journal of School Psychology, 49*(6), 691–720.

Mayer, S. J., & Rathmann, J. M. K. (2018). How does research productivity relate to gender? Analyzing gender differences for multiple publication dimensions. *Scientometrics, 117*, 1663–1693.

Newman, M. E. (2004). Coauthorship networks and patterns of scientific collaboration. *Proceedings of the national academy of sciences, 101*(suppl 1), 5200–5205.

Nisonger, T. (2002). The relationship between international editorial board composition and citation measures in political science, business, and genetics journals. *Scientometrics, 54*(2), 257–268.

Neuendorf, K. A. (2017). *The content analysis guidebook*. Sage.

Pooley, J. D., & Park, D. W. (2013). The history of communication research. In P. Simonson, J. Peck, R. T. Craig, & J. Jackson (Eds.), *The handbook of communication history* (pp. 76–90). Routledge.

Rao, C. R. (1982). Diversity: Its measurement, decomposition, apportionment and analysis. *Sankhya: the Indian Journal of Statistics, Series A, 44*(1), 1–22.

Rossiter, M. W. (1993). The Matthew Matilda effect in science. *Social Studies of Science, 23*(2), 325–341.

Sandler, D., & Gladyrev, D. (2020). Analysis of the relations between scientometric and economic indicators of Russian universities' performance. *Business, Management and Economics Engineering, 18*(2), 331–343.

Santos, L., Cardoso, L., Araújo-Vila, N., & Fraiz-Brea, J. A. (2020). Sustainability perceptions in tourism and hospitality: A mixed-method bibliometric approach. *Sustainability, 12*, 8852.

Shore, L., Chung, B., Dean, M., Ehrhart, K., Jung, D., Randel, A., & Singh, G. (2009). Diversity in organizations: Where are we now and where are we going? *Human Resource Management Review, 19*, 117–133.

Smith, M. C., Plant, M., Carney, R. N., Arnold, C. S., Jackson, A., Johnson, L. S., Lange, H., Mathis, F. S., & Smith, T. J. (2003). Productivity of educational psychologists in educational journals, 1997–2001. *Contemporary Educational Psychology, 28*, 422–430.

Stacks, D. W., & Hocking, J. E. (1992). *Essentials of communication research*. HarperCollins.

Stirling, A. (2007). A general framework for analyzing diversity in science, technology and society. *Journal of the Royal Society, Interface, 4*(15), 707–719.

Teele, D. L., & Thelen, K. (2017). Gender in the journals: Publication patterns in political science. *P.S.: Political Science & Politics, 50*(2), 433–447.

Van Arensbergen, P., Van der Weijden, I., & Van den Besselaar, P. (2012). Gender differences in scientific productivity: A persisting phenomenon? *Scientometrics, 93*(3), 857–868.

Van Noorden, R. (2015). Interdisciplinary research by the numbers. *Nature, 525*(7569), 306–307.

Waisbord, S. (2019). *Communication: A post-discipline*. Polity Press.

Wang, G. (Ed.). (2011). *De-westernizing communication research: Altering questions and changing frameworks*. Routledge.

Wieczorek, O., Unger, S., Riebling, J., Erhard, L., Koß, C., & Heiberger, R. (2021). Mapping the field of psychology: Trends in research topics 1995–2015. *Scientometrics, 126*, 1–33.

Xie, Y., & Shauman, K. (2003). *Women in science: Career processes and outcomes*. Harvard University Press.

Zanoni, P., Janssens, M., Benschop, Y., & Nkomo, J. S. (2010). Unpacking diversity, grasping inequality: Rethinking difference through critical perspectives. *Organization, 17*(1), 1–21.

Zhang, L., Sun, B., & Chinchilla-Rodrıguez. (2018). Interdisciplinarity and collaboration: On the relationship between disciplinary diversity in departmental affiliations and reference lists. *Scientometrics, 117*(1), 271–291.

Authors and Affiliations

Manuel Goyanes[1,2] · Márton Demeter[3] · Zicheng Cheng[4] · Homero Gil de Zúñiga[2,4,5]

Márton Demeter
Demeter.Marton@uni-nke.hu

Zicheng Cheng
zvc5199@psu.edu

Homero Gil de Zúñiga
hgz@usal.es

[1]   Department of Communication, Carlos III University, Getafe, Madrid, Spain

[2]   Democracy Research Unit, University of Salamanca, Salamanca, Spain

[3]   National University of Public Service, Budapest, Hungary

[4]   Film Production & Media Studies Department, Pennsylvania State University, State College, PA, USA

[5]   Department of Communication, Universidad Diego Portales, Santiago, Chile