

Professor Marek Kwiek  
Center for Public Policy Studies, Director  
UNESCO Chair in Institutional Research and Higher Education Policy  
University of Poznan, Poland  
kwiekm@amu.edu.pl

## **The Prestige Economy of Higher Education Journals: A Quantitative Approach**

*(preprint)*

### **Abstract**

This study addresses stratification in the global higher education research community and the changing geography of country affiliations in the six elite journals. Full- and part-timers are contrasted, and the distribution of country affiliations is analyzed from a longitudinal perspective. The findings indicate that about 3.3% of academics publishing in elite and core journals have authored at least 5 articles; these constitute the publishing core of the research community while the eight in ten who have authored one article constitute its periphery. *Higher Education* and *Studies in Higher Education* emerge as global elite journals, with an increasing share of non-Anglo-Saxon authors. Global trends include the diminishing role of American researchers and the increasing role of researchers from Continental Europe and East Asia. The prestige maximization model and principal-agent theory provide the theoretical framework for the study, which examines 6,334 articles published in the six elite journals during the period 1996–2018 in the context of 21,442 articles in 41 core journals.

### **1. Introduction**

Seeking prestige by publishing in top academic journals is central to the so-called “prestige economy” in higher education (Blackmore and Kandiko 2011; Rosinger et al. 2016; Kandiko Howson et al. 2018). At all levels—from national system to institution to department to individual academic—the global academic community competes in prestige markets, where “‘prestige’ indicates a particular kind of market, one in which what is recognized and traded does not necessarily have a direct financial value” (Blackmore 2016: 10). Prestige can be accumulated and is associated with university research rather than teaching or service missions (Marginson 2014; Melguizo and Strober 2007; Leslie and Slaughter 1997). Through their research, institutions and academics are heavily engaged in prestige-maximizing activities (Taylor et al. 2016; Rosinger et al. 2016) such as publishing in top journals or seeking selective grants.

The prestige economy of elite higher education research journals is a function of scarcity; the upper 10% of journals will always be limited in number, although the slots they offer may increase over time. Space is a scarce resource only for top

journals, with very high rejection rates of 90% and more. Indeed, “prestige requires scarcity” (Blackmore 2018: 234), and the number of scientists wishing to publish in top-tier journals outnumbers the number of slots available at any given time, as in the case of prestigious grants and fellowships. A scarce social good’s worth is increased by the mere fact that others cannot easily possess it (Blackmore 2018: 245), and the top table of prestigious journals in every field is always crowded, rewarding only the few. Each field has its own top-tier journals and the idea of “the tyranny of the top five” (Heckman and Moktan 2018) is applicable far beyond economics. However, not all institutions or academics are involved to the same extent in the prestige game; some institutions do not seek prestige, and some academics do not publish (Kwiek 2019a).

As the vast international literature of the last decade shows, academic success across a wide range of disciplines in today’s competitive, resource-seeking environment depends largely on publishing in the most prestigious journals. Consequently, while the top higher education journals focused on here struggle increasingly with a flood of submissions, journals closer to the bottom of the “pecking order” fight to attract authors. The reason is simple: location matters for individuals, institutions, and countries subject to incessant ranking, assessment, and selection procedures. In the prestige economy, academic careers have become quantifiable in ways that were “not imaginable several decades ago” (Kandiko Howson et al. 2018: 1).

The present study explores changes in the global higher education research community by examining publishing trends in six prestigious journals. In particular, a perplexing distinction between full-timers and part-timers (first referred to by Santos and Horta 2018) and the distribution of country affiliations are investigated from a novel longitudinal perspective (1996–2018). Global change in the academic community is reflected in the changing distribution of country affiliations over time. The diminishing influence of American researchers is marked by a corresponding increase in research from other regions, especially Continental Europe and East Asia.

The present research focuses on the higher strata of global journals. In total, 6,334 articles published in the six elite journals during the period 1996–2018 were studied in the context of 21,442 articles from 41 core journals. Elite journals have been variously described as “core” (Bayer 1983), “key” (Hutchinson and Lovell 2004), and “leading” (Tight 2014), with first, second, and third tiers in this informal “pecking order” (Bayer 1983: 103) or “caste system” (Bray and Major 2011).

Highly cited publications in prestigious journals are important in national systems with competitive career structures and stringent systems of research evaluation (Whitley and Gläser 2007). Evaluation is commonly based on Web of Science or Scopus journal classifications as proxies of scientific quality, and in many countries, new reward systems assess individual and institutional research performance in terms of journal prestige as well as number of papers published. Financial incentives further affect decisions about where and how frequently to submit articles for publication (Bak and Kim 2019: 219ff.). There is extensive evidence that publication in top-tier journals is the main predictor of faculty pay in research-intensive universities (Gomez-Mejia and

Balkin 1992: 942; Heckman and Moktan 2018). There is also evidence of a feedback effect, as the journal in which a paper is published has a powerful influence on citation rates; in other words, positioning within the vertically stratified publishing system tends to determine a paper's impact. In this regard, a journal-related Matthew Effect lends papers "an added value over and above their intrinsic quality" (Larivière and Gingras 2010: 424).

Promotion, recognition, and salaries are all linked to publishing in top-tier journals in a wide range of academic disciplines, and the emergence of new academic journals offers higher education researchers more options for enhancing their visibility. However, choosing to "save time and ... reach the same population faster and potentially obtain as many citations" (Larivière et al. 2014: 654) is only part of the logic of career success within the prestige economy, as publication in elite journals remains the key determinant of scientific recognition. In the field of economics, for example, "publishing in T5 (top five journals) is the most effective means of improving one's chances of obtaining tenure in all of the top 35 U.S. economics departments" (Heckman and Moktan 2018: 6).

The present study addresses two research questions from cross-sectional and longitudinal perspectives. (1) How is the global higher education research community stratified in terms of intensity of engagement in publishing in elite journals? (2) What changes can be seen in the geography of country affiliations in elite journals? Change is conceptualized at the level of the individual academic in question (1) and at the level of country affiliations in question (2). After outlining the theoretical background, the paper describes the data sources and methodology. Empirical results are then reported, followed by a discussion and conclusions.

## **2. Theoretical Background: Elite academic journals and knowledge production**

Two substantial strands of research help to explain the powerful grip of elite journals on academics, institutions, and national systems.

(1) *The prestige maximization model of higher education institutions*. Within the broader theories of academic capitalism and resource dependence, this model links the role of publication in prestigious journals to salary and reward systems.

(2) *Principal-agent theory* explains how publishing in prestigious journals aligns the interests of individual academics (as agents) with those of their institutions and sponsoring organizations, including national governments (as principals).

### ***2.1. The prestige maximization model of higher education institutions and elite journals***

According to this model, research-intensive universities as well as their departments and individual academics, act largely as “prestige maximizers” (Melguizo and Strober 2007: 634), striving constantly to maximize their prestige. Just as companies are “profit maximizers,” universities predominantly seek prestige at the intersection of the monetary and prestige economies. While the monetary economy provides the necessary finance, disciplinary and professional communities “confer social and cultural capital in the prestige economy” (Blackmore and Kandiko 2011: 405). Prestige can also be used to leverage resources, principally through research grants, and institutions, departments and individual academics modify their behaviors—including publishing patterns—to that end, competing for external resources in quasi-markets (Taylor et al. 2013).

In these competitive quasi-markets, publication in elite journals has played an increasing role, especially following the development and codification of research evaluation systems in Europe (Whitley and Gläser 2007). However, not all journals are equal, with an “overriding preference for those engaging in activities that contribute to high status among universities” (Slaughter and Leslie 1997: 116). While institutions and individuals pursue a wide array of external resources (and, analogously, journals), not all contribute equally to prestige (Rosinger et al. 2016: 28–29; Taylor et al. 2016: 106–107), and there is a clear preference for elite journals and highly competitive research grants.

The model highlights individual prestige generation through publications, research grants, patents and awards as critical resources for research-intensive universities. In this “competitive status economy” (Marginson 2014: 107), research is a powerful source of differentiation and rank ordering, and prestige is a major driver of what Slaughter and Leslie (1997) called “academic capitalism,” which is now global (see Cantwell and Kauppinen 2014). Across Europe, in “reputational work organizations” such as universities (Whitley 2000: 25), the credibility cycle that enables European scientists to progress within their field (Latour and Woolgar 1986: 201–208) involves the conversion of prestigious articles into recognition, leading to individual competitive grant-based funding, which is further converted into new data, arguments, and articles. Publication in elite journals and funding from prestigious agencies are crucial components of this credibility cycle (which refers to all academic cohorts; see Cruz-Castro and Sanz-Menéndes 2010 who study the relationship between performance and rewards for early career researchers). Publication in top-tier journals increases European scientists’ chances of securing an academic position, moving faster up the career ladder, and attracting external funding as part of the global scientific elite. The prestige economy valorizes external research resources and favors publication in top journals, leading to segmentation within universities, separating high- and low-resource departments and shaping careers accordingly (Rosinger et al. 2016).

This model views prestige principally as a rival good, based on relative rather than absolute measures—a zero-sum game, in which “what winners win, losers lose” (Hirsch 1976: 52)—as academia becomes ever more competitive, driven by government policies that deliberately emphasize “prestige, at all levels from the national system to the individual” (Blackmore 2016: 1). Like individual academics, universities compete in prestige markets grounded in the traditional ethos of academic work, where publication is highly valued. In particular, the model posits a strong link

between individual and institutional prestige: “In maximizing their individual prestige, faculty members simultaneously maximize the prestige of their departments and institutions” (Melguizo and Strober 2007: 635). It follows that individuals who help to enhance their institution’s prestige are rewarded with higher salaries (Bak and Kim 2019), as more publications in prestigious outlets and more prestigious research grants elevate institutional prestige. (The theory of departmental prestige proposed by Burris (2004) refers predominantly to a large US system – with a long list of prestigious departments of sociology across the country, and possible mobility between them). The model explicitly assumes purposeful behavior on the part of all actors in pursuit of their own self-interest and prestige. In particular, it assumes the existence of competitive markets in higher education (Melguizo and Strober 2007: 635).

The theory of academic capitalism posits that Anglo-Saxon universities reorient themselves to win this game (Taylor et al. 2016); research commonly takes priority over instruction, and the increase in public research funding further consolidates the prestige economy (Rosinger et al. 2016; Kandiko Howson et al. 2018). Across the world, national, institutional, and departmental policies and research assessment exercises prioritize prestigious journals. As prestige maximizers, universities (and individual academics) have to compete for critical resources, and according to the theory of academic capitalism, publication in elite journals is a key dimension of this competition (Slaughter and Leslie 1997: 114) as a key mechanism in the advance of science.

### ***2.3. Principal-agent theory and elite journals***

In the present context, principal-agent theory illuminates the use of prestige-related metrics for academic journal stratification in national and institutional research evaluation systems (Whitley and Gläser 2007). These metrics are increasingly used by governments and their agencies, national funding bodies, and academic institutions. While the theory has previously been used primarily in studies of corporations (Pratt and Zeckhauser 1985), it has also been applied to the higher education (Kivistö 2008) and science sectors (Braun and Guston 2003; van der Meulen 1998). In the relationship between the university as agent and the state and its agencies as principal, publication in prestigious journals is a key indicator of productivity and a critical element in the competition for research funding.

The principal-agent literature deals specifically with the social relationship of delegation. This involves an exchange of resources between actors, in which the agent accepts the principal’s resources and undertakes to further the interests of the principal (Braun and Guston 2003). In the present case, the agents are universities and individual scientists, and the principals are governments and national funding bodies, representing the interests of both the state and the academic community. Once the principal delegates authority by engaging the agent to perform certain tasks on their behalf, they often have difficulty in controlling the agent, whose goals may differ from their own. For instance, scientists may choose to publish in journals that afford easier access, or they may engage excessively in consulting.

In such relationships, informational asymmetries between principals and agents are accompanied by goal conflicts (Kivistö 2008). The theory assumes that each party acts out of self-interest, giving rise to the so-called “agency problem” when interests conflict. Where agents engage in self-serving behaviors, principals develop mechanisms for monitoring agents’ actions or for rewarding them when they conform to certain requirements. As an outsider, it is almost impossible for the principal to understand the agent’s products (Braun and Guston 2003: 303-304)—in this case, scientific publications—or to assess their impact on the science community and the wider society. According to the model, the principal must utilize “an array of oversight, compensatory, and punitive initiatives to ensure the agent acts in the principal’s best interest” (Lane and Kivistö 2008: 145).

In the present context, the principal must ensure that academics produce high quality research. From this perspective, journal research quality would generally need to be verified, other than in the case of top-tier journals. In other words, as principals always look for the least costly and most efficient ways of supervising agents, it is easier to equate prestigious journals with high-quality research. The metric of publication in top-tier journals enables principals at all levels (national, institutional, departmental) to defend their distribution of rewards, in both academic progression systems and competitive public funding for research.

As a “screening device” in principals’ relationship with agents, top-tier publications serve as a common performance metric across all disciplines (Gomez-Mejia and Balkin 1992: 925); “a principal merely has to count publications that can be assumed to be of high quality. In contrast, if total publications are used, the principal must assess the publications’ quality, which requires reading and understanding them—a more costly and uncertain process” (Gomez-Mejia and Balkin 1992: 947). Additionally, publishing in top tier journals enjoys extensive normative consensus within the academic community as a performance metric that reduces intra-professional conflicts. The traditional logic of meritocracy in science means it is accepted that, in the prestige publication game, some scientists necessarily win while others lose. Publication in their discipline’s best journals is, for many academic researchers, “the equivalent of making the big leagues in sports or performing at Carnegie Hall in the arts. While many scholars aspire to publish in the best journals, however, only some realize the aspiration” (Fender et al. 2005: 93).

Because social stratification and competition are major drivers of university research, measuring—and, crucially, comparing—performance at various levels has always been part of the academic ethos. The metric of publication in top journals makes it easier for both principals and (somewhat paradoxically) agents in the ongoing struggle for scientific recognition and academic reputation (Marginson 2014; Kwiek 2019a). For individual scientists and their institutions, publication in top journals equates with success. As Heckman and Moktan explained, the top five (T5) journals in economics set a “professional standard,” and “faculty meetings about hiring, promotion, tenure, and prize committee discussions assess candidates by the number of T5 articles they

have published or have in the pipeline and the rapidity with which they were generated” (2018: 4). Most “excellence initiatives” across the globe channel additional research funding to selected universities, affirming the value of publication in top journals to principals across institutions and disciplines while the value of other publications remains unproven.

In exploring the increasing role of top-tier journals in academic knowledge production, agency theory offers a useful way of understanding the appeal of these journals, both to principals (in terms of cost effectiveness, intuitive fairness, and simplification of research funding) and to agents, whose academic success is underwritten by publication in top journals. As opposed to a close reading of all published papers for departmental or national-level peer review of individual or institutional output and performance, the number of top-tier publications needs little monitoring or quality assessment (Heckman and Moktan 2018).

### 3. Data Sources and Methodology

In focusing on prestigious “generic” rather than “topic-specific” higher education journals (Tight 2018), the central question of the present study is how these should be selected. Of the two available options—a list based on subjective perceptions of prestige (i.e., peer review) or a list based on objective bibliometric criteria (i.e., citations)—the latter is favored here. Following recent proposals by Tight (2018), Horta (2018), Budd and Magnuson (2010) and others, the following journal selection procedure was adopted here. First, in order to define core journals, a list was compiled of all journals in the Scopus database whose title included the terms “higher education” or “tertiary education” (see Horta 2018; Jung and Horta 2013), and their major bibliometric parameters were analyzed. Scopus is the largest global abstract and citation database of peer-reviewed scientific journals, books and conference proceedings, indexing 38,060 academic journals (December 2019).

Scopus affords the best overview of the structure of world science, including most of the journals in the Thomson Reuters Web of Science (Moya et al., 2007; Larivière and Sugimoto 2018). Traditionally, the “best” or most prestigious journals in a given field have been defined as the most read or most cited, and the metrics used here capture these criteria. For present purposes, elite journals were selected and analyzed in the wider context of 41 core journals that focus exclusively (rather than merely “regularly” or “occasionally”) (Tight 2018) on higher education research. The selected elite journals are all top-ranked in the list of 41 and are among the highest ranking “generic” journals in higher education (see list in Table 9, Electronic Supplementary Data). The analyses were performed using R software, and ggplot2 package was used for the visualizations.

The data were retrieved from Scopus during the period August 10–15, 2019. The total number of included articles was 21,442 (including 6,334 from the six journals), and the total number of citations in 2009–2018 was 356,465 (including 187,108 citations of articles from the six journals). The metadata for retrieved documents were restricted in

terms of publication stage (final only) and publication type (articles only). The metadata included author ID, document ID, institutional and country affiliation, and all references. In the next step, the metadata were retrieved for all citations. Scopus assigns a unique individual identification number to each document, and to each person identified as an author in the document's byline. For the analyzed documents, 27,878 unique authors were found. As Scopus automatically merges and aggregates data for a single individual even if their names are written differently—for example, “Ziskin, M.,” “Ziskin, Mary B.,” and “Ziskin, M.B.” have the same Scopus ID—the final list included 26,881 unique authors.

Different country affiliations for the same person may indicate parallel employment or mobility over time during the period studied. In the dataset, 1,397 (or 5.2%) authors with individual ID had more than one affiliation, representing 3,225 affiliations in total. These were removed from the analyses of country affiliation.

The six elite journals selected for analysis were *Higher Education* (HE), *Studies in Higher Education* (SHE), *Higher Education Research and Development* (HERD), the *Journal of Higher Education* (JHE), *Research in Higher Education* (ResHE), and the *Review of Higher Education* (RevHE). Importantly, all have appeared in previous research of this kind; as the top three American journals, JHE, ResHE, and RevHE have been extensively studied in recent decades (Hutchinson and Lovell 2004; Budd and Magnuson 2010; Silverman 1987). The list used here is based on sophisticated bibliometric measures of citation numbers and citation-driven prestige in a global dataset and is identical to those used in previous studies (e.g., Tight 2014).

## 4. Results

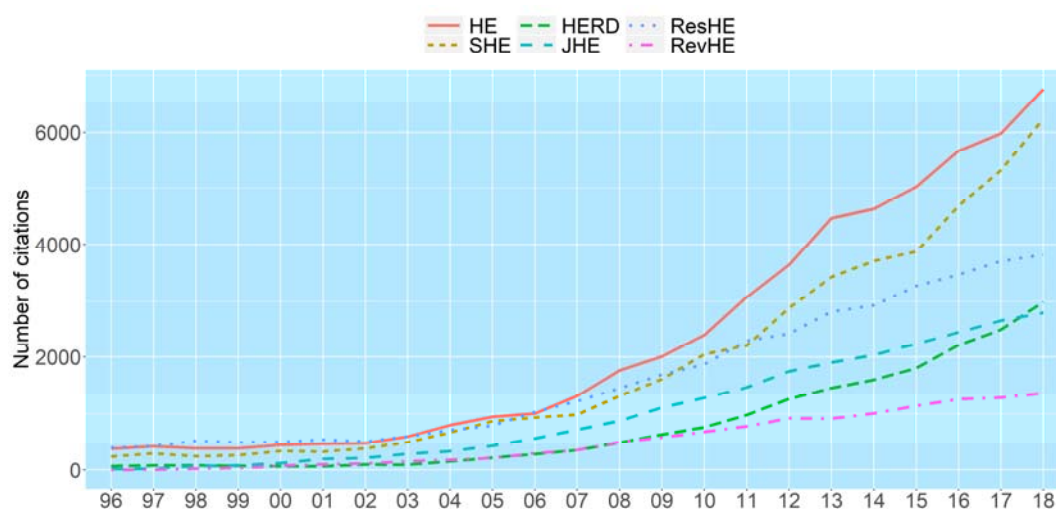
For the period studied, the total number of articles published in the six journals was 6,334; as the two biggest producers, HE and SHE accounted for more than half of this number (see Table 1). Over the last two decades, the number of papers published annually in the six journals increased almost threefold, from 100–150 per year in 1996–2000 to 400–470 per year in 2014–2018; the total number of citations was 187,708. Three journals accounted for 71.31% of all citations: HE (c. 53,000), SHE (c. 43,500 citations), and ResHE (c. 37,000). The gap between the three most highly cited journals and the remaining three has continued to widen (Figure 1). However, as CiteScore 2018 shows, the six journals achieved similar citation rates per article; in 2018, HE returned the highest CiteScore. (A CiteScore of 10 means that articles published in a given journal over the three previous years received an average of ten citations in the current year.) The citation gap therefore seems related to the increasing number of publications rather than to a steep hierarchy among the six top journals. Specifically, three citation-related parameters were considered for the reference year of 2018 (Table 1): number of citations to articles published 1996–2018; journal citation impact (as measured by CiteScore); and journal rank or percentile (in a field of 1,038 journals). Expressed as percentiles, both CiteScore and journal rank are simple and transparent measures that address the criticisms of Impact Factor in recent decades (Larivière and Sugimoto 2018).



**Table 1.** Cross-sectional analysis: six elite journals (selected Scopus metrics, 2018).

Journal	Cite Score 2018	Citations 2018	Citations 1996–2018	Articles 2018	Articles 1996–2018	Highest percentile (rank in Education 2018)
HE	3.42	6759	53,038	122	1,946	95.0% (43/1038)
SHE	3.28	6239	43,358	155	1,465	95.0% (52/1038)
HERD	2.58	2985	18,293	99	1,039	91.0% (93/1038)
JHE	3.04	2792	23,590	24	529	93.0% (70/1038)
ResHE	2.97	3821	37,450	44	1,018	93.0% (72/1038)
RevHE	2.28	1361	11,979	25	337	86.0% (138/1038)
Total	-	23,957	187,708	469	6,334	-

The changing role of the six journals over time is apparent in the changing percentages of citations they attract and of documents published as compared to the remaining journals. Between 1996 and 2018 their share of citations fell substantially (from 69.18% to 49.40%), with a decreasing share of documents (from 31.79% to 27.52%). The changes were even more marked in the case of the big three; while their share of citations fell by 46.84%, their share of articles decreased by 28.88%. The distribution of citations over time indicates a growing gap between the increasingly cited top three (HE SHE and ResHE) and the remaining three top journals.

**Figure 1.** Longitudinal analysis: number of citations received to articles published by journal and year (Scopus dataset 1996–2018).

However the Herfindahl-Hirschman index (HHI) reveals the diminishing role of elite journals as citation producers in the field of higher education research. This measure of market concentration which is used in antitrust analysis and competition law (Laine 1995) is calculated by summing the squares of market share of all firms in a particular market ranging from 0 for a highly competitive market to 10000 for a pure monopoly. In the present case HHI refers to the concentration of journals and their citations for the sample of 41 core journals and their citations. The changing HHI reflects changes in the concentration of citations to articles from core journals. Taking each journal as a separate entity the analysis indicates that concentration has declined substantially over

the last quarter of a century (from a HHI of c. 1600 to below 1000). If the six elite journals are treated as a single entity concentration decreases even more (from c. 5000 to c. 3000). These changes confirm that the citation-based market of higher education journals is becoming less concentrated and that the role of the six journals in this market is in decline. However while the major journals' monopoly of citations has weakened substantially (Larivière et al. 2014) their role is stronger than ever in terms of academic career progression promotion and salary—a topic to which we shall return.

**Table 2.** Herfindahl-Hirschman Index (HHI) 1996–2018: citation concentration in higher education research journals. HHI (1) refers to each journal as a separate entity (41 entities); HHI (2) refers to six elite journals as a single entity (36 entities).

Year	HHI (1)	HHI (2)	Year	HHI (1)	HHI (2)	Year	HHI (1)	HHI (2)
1996	1596	4934	2004	1314	4324	2012	1013	3359
1997	1616	5012	2005	1255	3942	2013	966	3049
1998	1527	4973	2006	1131	3695	2014	1008	3206
1999	1492	4885	2007	1054	3664	2015	956	3105
2000	1353	4264	2008	1042	3563	2016	982	3113
2001	1290	4287	2009	1006	3401	2017	991	3064
2002	1217	3967	2010	996	3231	2018	997	3006
2003	1251	4139	2011	964	3311			

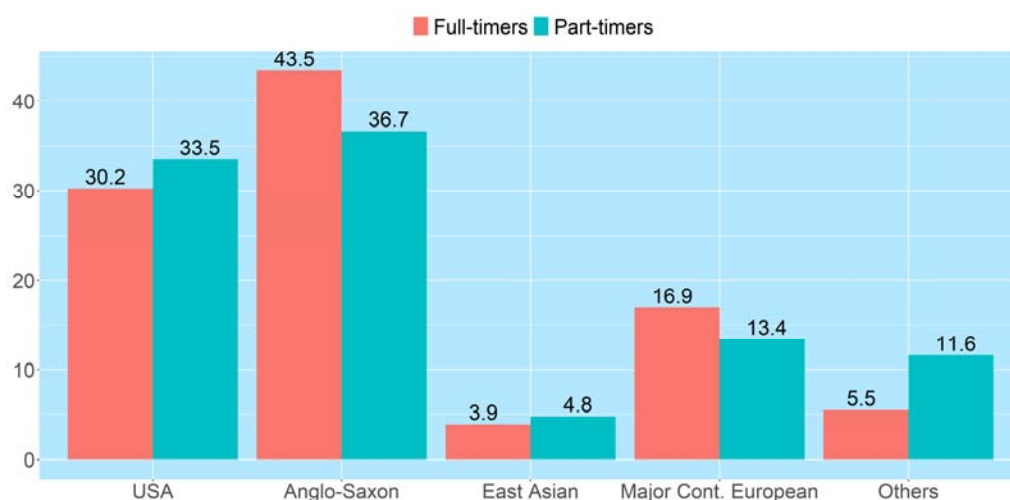
#### **4.1. Stratification of the global higher education research community: full-timers and part-timers in elite and core journals**

This section analyzes the stratification of the global higher education research community as measured by articles published in the six elite and 41 core journals for the period 1996–2018, based on all publications as either sole author or co-author. In total, 8,226 academics (co)-authored at least one paper in the six elite journals during that period. The number of full-timers (defined here as those who authored or co-authored at least 5 papers in elite journals) was 274 (or 3.3% of all authors with individual Scopus Authors' IDs) (see Table 3). The total number of academics associated with the 21,442 articles in the 41 core journals is 26,881, of whom 878 (3.3%) were full-timers. Most of those who contributed to the six elite journals (6,485 or 78.8%) published just one article—in other words, they were part-timers—while full-timers who authored or co-authored at least five articles account for about one in thirty. Across the 41 core journals, 21,389 (79.6%) published a single article.

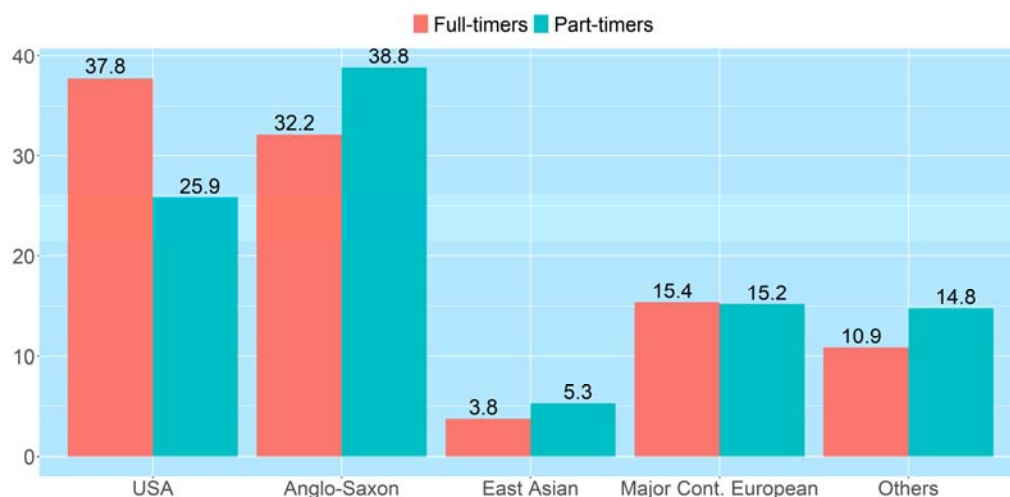
**Table 3.** Cross-sectional analysis: productivity distribution of individual authors (based on Scopus Author IDs) in terms of contributions to elite and core higher education journals (1996–2018) (frequency and percent).

Articles per author	6 elite journals		41 core journals	
	N	Cumulative %	N	Cumulative %
20 and more	7	0.1	25	0.1
10	66	0.8	185	0.7
5	274	3.3	878	3.3
4	439	5.3	1354	5.1
3	744	9.0	2328	8.7
2	1741	21.2	5492	20.5
1	8226	100.0	26881	100.0
<b>Total</b>	8226	100.0	26881	100.0

Analysis of country affiliations shows that, of those who published in elite journals (Figure 2), full-timers came from three clusters of countries: the USA (30.2%), other Anglo-Saxon countries (43%), and major European systems (in descending order of number of articles: Netherlands, Spain, Finland, Germany, Sweden, Norway, Portugal, Belgium, Italy, Denmark). In the cluster of all other countries, full-timers accounted for 5.5%. The share of part-timers was slightly higher for the USA and lower elsewhere, although the cluster of all other countries increased its share to 11.6%. For the 41 core journals (Figure 3) or the global higher education research community, the picture mirrors the elite segment, with the exception of America, where full-timers increased by a third (to 40.3%), and other Anglo-Saxon countries, where the share of full-timers decreased by almost 10%. For the cluster of East Asian, major European, and all other countries, shares for the two journal sets were roughly similar.

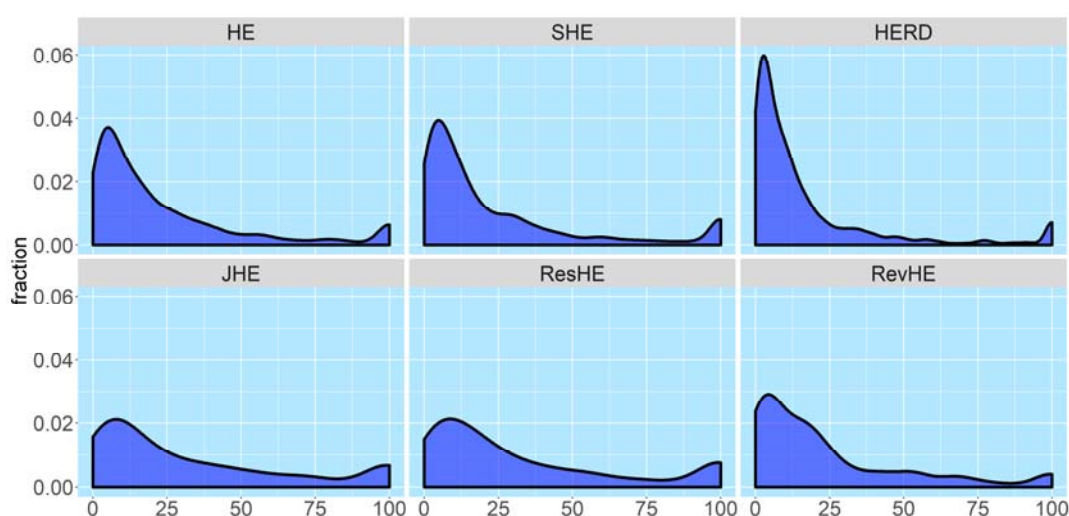


**Figure 2.** Full-timers (5 papers published) and part-timers (1 paper published) in 6 elite journals (full counting method, 1996–2018) by cluster of countries (%).



**Figure 3.** Full-timers (5 papers published) and part-timers (1 paper published) in 41 core journals (full counting method 1996–2018) by cluster of countries (%).

For articles from the six elite journals, the estimated kernel density of citation distribution is a relatively standard curve. Most articles attracted less than 25 citations while a limited number attracted 100 or more (see Figure 4). HERD exhibited the most unequal distribution of citations, with a large number of articles returning very low citation levels. From a cross-disciplinary perspective, the citation potential of elite higher education journals is relatively low when viewed through a bibliometric lens. CiteScore provides a useful comparison across disciplines (i.e., journal impact as average citations per document). While the 2018 CiteScore for the top six higher education journals was in the range 2.28–3.42, it was generally higher for the top 10 journals in other social science fields (Communication: 3.82–5.92; Law: 4.09–7.1; Public Administration: 3.22–8.42; Sociology and Political Science: 6.23–10.13; and Education: 5.45–12.31). The top 10 natural sciences journals achieved much higher CiteScores (e.g., Biochemistry: 18.73–25.59; Chemical Engineering: 13.5–29.72).



**Figure 4.** Kernel density estimate: citation distribution for articles from 6 elite journals (by journal, combined Scopus data for 1996–2018). The area under the scaled curve equals 1. The density estimate is based on a Gaussian kernel and a bandwidth of 2.

## 4.2. The changing geography of country affiliations of authors in the six elite journals

Based on authors' country affiliations, this section explores the following questions. How “international” are higher education journals traditionally regarded as the “international” elite? How “domestic” are journals traditionally considered “domestic”? How have their country profiles changed over time?

### 4.2.1. Cross-sectional analysis

In terms of authorship patterns, the existing literature distinguishes mainly between “national” (domestic American) and “global” (international) journals. Knowledge production in the elite higher education journals is geographically concentrated (see Table 4), with a skewed distribution across 91 contributing countries for the period 1996–2018. The top 10 countries in the dataset accounted for 81.80% of all affiliations, and the top 25 countries accounted for 95.2%. During the same period, the remaining 66 countries accounted for a mere 4.8% of affiliations.

The geography of elite higher education research highlights the distinction between the United States, other Anglo-Saxon countries, and the rest of the world. The hegemonic position of the three largest Anglo-Saxon contributors to elite higher education research (USA, Australia, and the UK) is startling, accounting for 63.7% of all affiliations. The remaining three (Canada, Ireland, and New Zealand) account for 9.0%, and other English-speaking countries such as South Africa, Hong Kong, and Singapore account for a further 4.6%. In total, then, Anglo-Saxon countries account for more than three-quarters of all affiliations (77.3%). Tight (2014) looked at first-author countries for 273 articles published in 2010; in contrast, the present study examines all affiliations of all authors of the 6,334 articles published in the period 1996–2018.

**Table 4.** Cross-sectional analysis: top 25 affiliations of authors of articles published in 6 elite journals by country (combined Scopus data, 1996–2018) for 91 countries (undefined affiliations removed from analysis).

Rank	Country	N	%	Rank	Country	N	%
1	United States	3,587	30.7	15	Belgium	131	1.1
2	Australia	2,216	19.0	16	China	123	1.1
3	United Kingdom	1,568	13.4	17	Italy	104	0.9
4	Netherlands	436	3.7	18	Denmark	85	0.7
5	Canada	402	3.4	19	Malaysia	82	0.7
6	New Zealand	352	3.0	20	South Korea	77	0.7
7	South Africa	304	2.6	21	Taiwan	74	0.6
8	Spain	269	2.3	22	Israel	66	0.6
9	Finland	217	1.9	23	Ireland	61	0.5
10	Germany	214	1.8	24	Japan	51	0.4
11	Sweden	200	1.7	25	Singapore	45	0.4
12	Hong Kong	185	1.6		Subtotal affiliations from top 25 countries	11,131	95.2
13	Norway	141	1.2		Subtotal affiliations from 66 other countries	557	4.8
14	Portugal	141	1.2		Total affiliations	11,688	100

Table 5 shows that while two journals (RevHE and JHE) accounted for 1.6–2% of non-American and non-Anglo-Saxon affiliations in the period 1996–2018, ResHE accounted for considerably more (9.3%). For JHE and RevHE, the share of US author affiliations was about 95–97% while this figure was lower for ResHE (85.4%). In this sense, JHE ResHE and RevHE are clearly national or domestic journals (in this case, American). The three other top six journals (HE, SHE, and HERD) differ sharply in terms of non-Anglo-Saxon affiliations, ranging from 19 to 54%. For HE alone, more than half of all authors (54.2%) had non Anglo-Saxon affiliations; SHE accounted for 36.7% and HERD for 18.9%. HE had a slightly higher share (13.7%) of US affiliations. Along with this novel analysis of the entire period 1996–2018, the longitudinal analysis below illuminates journal profile changes over the longer term, regardless of changing editors-in-chief or editorial board composition.

**Table 5.** Cross-sectional analysis: major affiliations of authors in articles published in the 6 elite journals by country, country cluster, and journal (combined Scopus data for 1996–2018).

Cluster	HE		SHE		HERD		JHE		ResHE		RevHE		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
USA	456	13.7	224	7.5	97	4.3	836	94.7	1428	85.4	546	96.8	3587	30.7
Anglo-Saxon	1066	32.1	1666	55.8	1740	76.8	29	3.3	89	5.3	9	1.6	4599	39.3
Major European	1001	30.2	648	21.7	202	8.9	11	1.2	87	5.2	0	0.0	1949	16.7
East Asian	279	8.4	186	6.2	88	3.9	3	0.3	32	1.9	4	0.7	592	5.1
Other	517	15.6	259	8.7	140	6.2	4	0.5	36	2.2	5	0.9	961	8.2
Total	3319	100	2983	100	2267	100	883	100	1672	100	564	100	11688	100

Aside from Anglo-Saxon affiliations, two world regions figured prominently in elite journals, accounting for about 21.8% of affiliations in 1996–2018: major Continental Western European countries (16.7%) and East Asia (including China, Hong Kong, Japan, South Korea, Malaysia, Singapore, and Taiwan) (5.1%). The contribution of all other countries was small but notable (8.2%).

To assess the changing concentration of authors' country affiliations, it is again useful to refer to the HHI index. A fall of almost half (from 2,207 to 1,166) clearly indicates gradual de-concentration over the period 1996–2018 (Table 6); in other words, the previous monopoly has weakened substantially.

**Table 6.** Herfindahl-Hirschman Index (HHI): concentration of authors' country affiliations by country (41 journals, 125 affiliations) by year.

Year	HHI	Year	HHI	Year	HHI	Year	HHI	Year	HHI
1996	2207	2001	1970	2006	1849	2011	1683	2016	1329
1997	2509	2002	2246	2007	2185	2012	1806	2017	1236
1998	2472	2003	1978	2008	1779	2013	1561	2018	1166
1999	2448	2004	2141	2009	1958	2014	1616		
2000	2604	2005	2299	2010	1743	2015	1432		

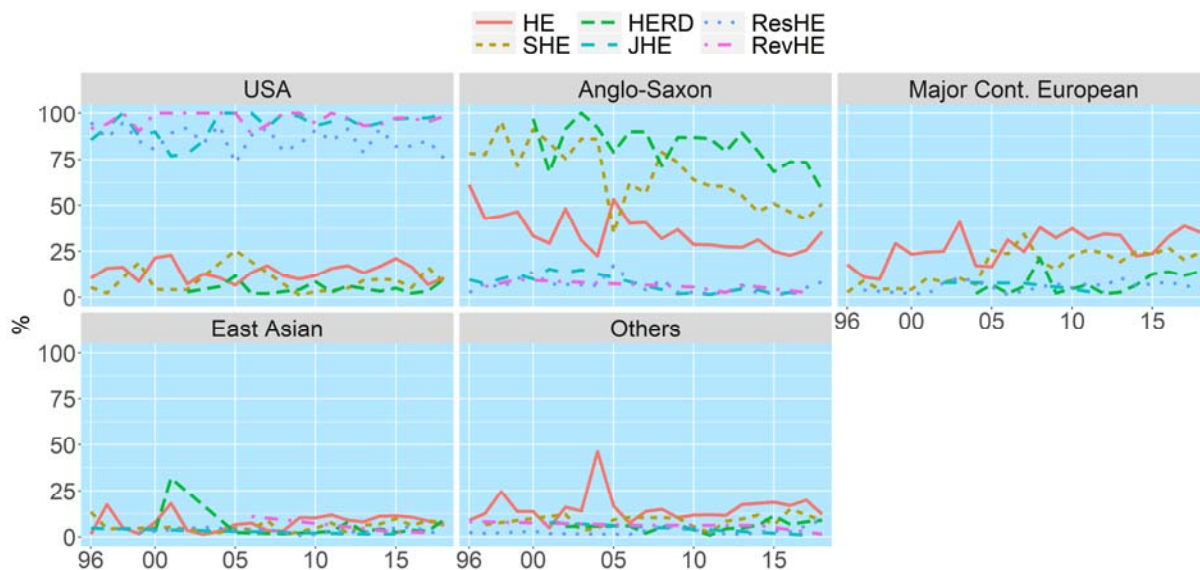
### 4.2.2. Longitudinal analysis

To the best of our knowledge, no previous study has examined changing authorship affiliation patterns in all six elite journals (or any one of them) in detail over time. Regarding the global expansion of higher education, it is of interest to examine the changing role of major Continental European and East Asian countries and to ask whether the increase in publication numbers in the six elite journals (from 154 in 1996 to 469 in 2018) is driven by newcomers to the field “catching up fast” (Tight 2014: 16) or by the USA and Anglo-Saxon countries.

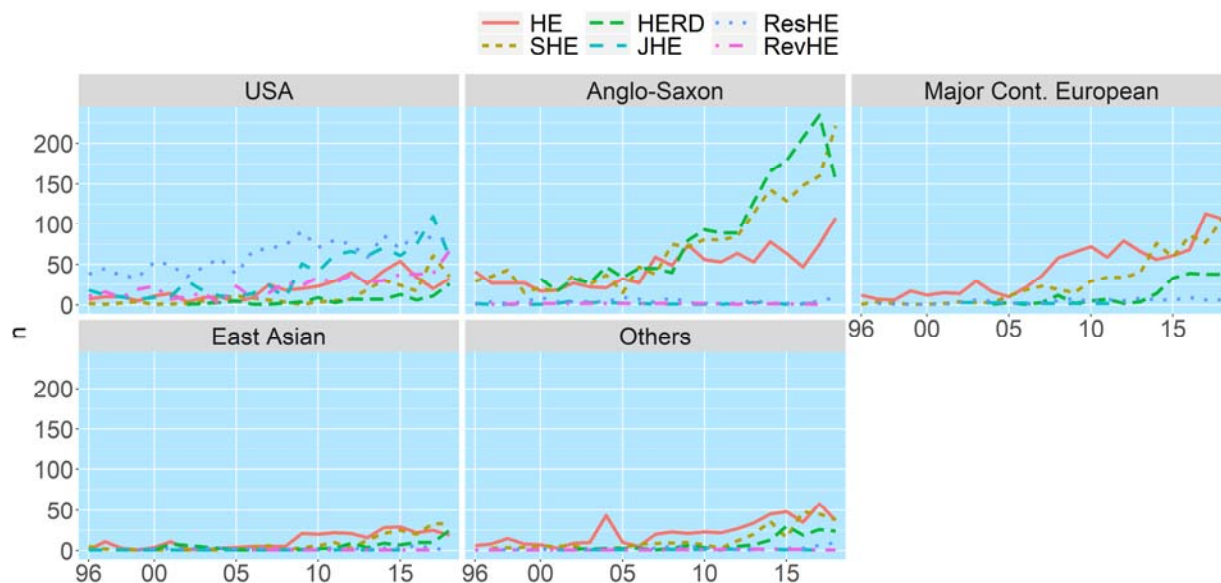
Changing authorship patterns in three subsequent periods (1996–2003, 2004–2011, and 2012–2018) were analyzed in detail over time in terms of affiliations and frequency. Table 7 (ESD) shows that the combined share of all Anglo-Saxon affiliations has decreased overall while the share of major Continental European major East Asian and all “other” affiliations has increased substantially. In the new geography of elite higher education, then, relative newcomers are gaining at the expense of traditionally dominant countries. The single biggest loser is the USA, with 42.5% of affiliations in 1996–2003 falling to 26.9% in 2012–2018. This reflects both the increasing share of non-American affiliations in general and the increasing yearly volume of HE and SHE publications (Figure 6), where US academics tend not to publish (Figure 5). Australia made the greatest gains, with 20% of all affiliations in 2012–2018, up from 15.3% in 1996–2003. However, Anglo-Saxon affiliations are down from about 80.8% in 1996–2003 to 66.3%. The biggest winner is Continental Europe, where contributions almost doubled (from 9.7 to 18.3%), with very high visibility in HE and SHE. The share of major East Asian affiliations also increased (from 3.9% to 5.9%), principally in HE and SHE. Perhaps the most interesting finding is the steady rise in all “other” affiliations beyond the three major global clusters (from 5.6 to 9.5%), with HE again dominant. Newcomers include Israel, Chile, Turkey, Iran, Switzerland, and Poland.

In terms of changing numbers of affiliations over time (Figures 6 and 7, Table 8), the data on elite journals are even more telling, possibly reflecting new collaboration patterns in global higher education research. Between the first period (1996–2003) and the third (2012–2018), the number of articles with US affiliations increased by a factor of three. However, Australia increased by a factor of about six; major European systems combined increased by a factor of about eight; East Asia increased by a factor of about seven; and the cluster of all other countries increased by a factor of about eight. In the third period (2012–2018), there were about 1800 US affiliations, 1500 European, 400 East Asian, and 650 from “others.” In the first period, the USA accounted for 641 as compared to 146, 59, and 85 respectively for the others. Growth between the two periods was phenomenal in some European countries, including Portugal (from 0 to 100 affiliations), Belgium (from 2 to 90), Denmark (from 1 to 72), Spain (from 13 to 178), and Germany (from 6 to 168).



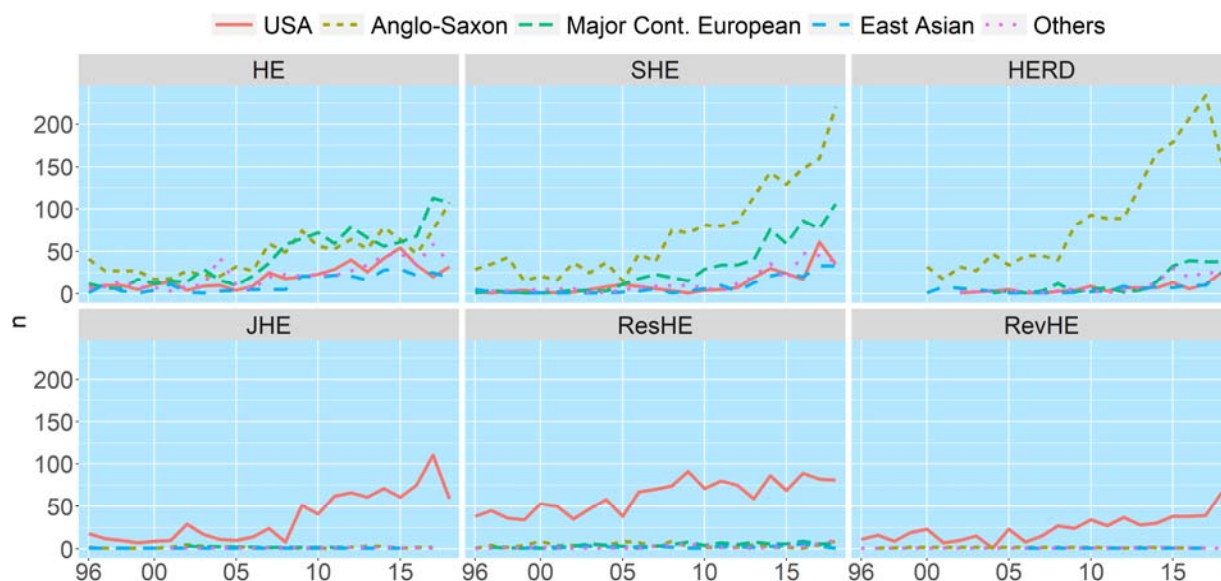


**Figure 5.** Longitudinal analysis: percentage of author affiliations for 5 major clusters of countries over time across the top 6 journals (Scopus data 1996–2018 by year, cluster, and journal); 91 country affiliations (%).



**Figure 6.** Longitudinal analysis: number of author affiliations for 6 elite journals (Scopus data 1996–2018; 91 country affiliations) by journal (frequency).





**Figure 7.** Longitudinal analysis: number of author affiliations for 6 elite journals (Scopus data 1996–2018); 91 country affiliations by cluster of countries (frequency).

In the three non-American elite journals (HE, SHE, HERD), the share of American affiliations has been low and generally decreasing while the share of other Anglo-Saxon affiliations has been moderate and decreasing (HE) or high and decreasing (SHE and HERD) (Figure 5). In East Asia, the field is growing in China, South Korea, Malaysia, and Hong Kong (although the latter has also seen decreasing growth) while Japan continues to play a marginal role.

## 5. Discussion and Conclusions

The distribution of citations is highly field-specific (Moed 2005); while some fields are highly citable, others are much less so (Sugimoto and Larivière 2018: 69–76). In the field of higher education research, expansion and contraction over time in different countries exerts a significant influence on citation patterns, as does the overall number of scholars active in the field, their global distribution by country, their preferred research language, and their individual publishing patterns (including preference for national or global outlets). The unprecedented growth of higher education research in major Continental European countries, Australia, the United Kingdom, and New Zealand can be explained by several factors, including delayed massification of higher education (as compared to the USA and Canada), growing international collaboration (Kwiek 2019b), and what Kandiko Howson (2018) characterize as the hyper-individualism of academics and metrification of the prestige economy of higher education supported by stringent research evaluation.

Yet despite this phenomenal global growth, higher education's lower citation potential as compared to other social science fields may have negative implications for academic career stability and future access to competitive research funding, especially in countries with strong metric-based research evaluation systems. This is unsurprising in light of the relatively limited number of scholars who are heavily involved in the

field and, in particular, the small proportion of full-time scholars both globally and in the United States, the top producer in the field. Full-timers generally produce most of the relevant research with high citation potential, but despite the massive global expansion of higher education and the corresponding growth of research, their number remains small.

**Table 8.** Longitudinal analysis: changing numbers of affiliations over time. Country affiliations of authors of articles published in the six elite journals (Scopus data for 1996–2018) 91 countries by six-year period by journal (frequency).

	HE			HERD			JHE			ResHE			RevHE			SHE			Six combined		
	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018	1996-2003	2004-2011	2012-2018
Australia	88	160	204	80	356	731	5	0	5	3	4	14	1	1	0	54	147	363	231	668	1 317
Canada	33	68	66	5	14	74	9	3	5	14	34	7	1	1	4	8	22	34	70	142	190
Ireland	0	12	10	0	1	8	0	0	0	0	0	1	0	0	0	0	4	25	0	17	44
New Zealand	2	10	29	8	47	189	0	0	0	0	0	0	1	0	0	2	32	32	13	89	250
United Kingdom	83	121	180	15	55	157	1	0	1	7	1	4	0	0	0	157	240	546	263	417	888
United States	70	138	248	1	26	70	112	221	503	338	549	541	110	159	277	10	21	193	641	1 114	1 832
Subtotal Anglo-Saxon	276	509	737	109	499	1 229	127	224	514	362	588	567	113	161	281	231	466	1 193	1 218	2 447	4 521
Belgium	2	15	26	0	4	20	0	0	0	0	4	6	0	0	0	0	16	38	2	39	90
Denmark	1	10	40	0	0	9	0	1	0	0	0	0	0	0	0	0	1	23	1	12	72
Finland	22	37	45	0	0	17	0	0	0	1	0	0	0	0	0	6	28	61	29	65	123
Germany	5	29	89	0	0	7	0	0	0	1	4	21	0	0	0	0	7	51	6	40	168
Greece	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	5	6
Italy	2	27	41	0	0	0	0	2	0	0	0	1	0	0	0	0	7	24	2	36	66
Netherlands	50	86	101	0	8	37	3	0	2	5	11	14	0	0	0	5	29	85	63	134	239
Norway	16	27	45	0	1	4	0	0	0	0	3	1	0	0	0	4	15	25	20	46	75
Portugal	0	22	54	0	0	8	0	0	0	0	0	1	0	0	0	0	9	47	0	31	110
Spain	7	54	74	0	0	35	0	3	0	6	6	2	0	0	0	0	15	67	13	78	178
Sweden	7	28	32	0	21	31	0	0	0	0	0	0	0	0	0	3	23	55	10	72	118
Subtotal Cont. Europ.	112	338	551	0	34	168	3	6	2	13	28	46	0	0	0	18	152	478	146	558	1 245
China	2	6	50	0	1	24	0	0	1	0	0	2	0	0	3	0	1	33	2	8	113
Hong Kong	13	29	33	9	3	26	0	0	0	3	8	4	0	0	0	9	23	25	34	63	88
Japan	16	8	12	0	1	3	0	0	0	2	0	0	0	0	0	0	0	9	18	9	24
Malaysia	1	10	16	0	0	2	0	0	0	0	0	2	0	0	0	0	4	47	1	14	67
South Korea	0	16	29	0	0	5	1	0	1	0	2	5	0	1	0	0	1	16	1	20	56
Tajwan	2	16	20	0	0	14	0	0	0	1	0	3	0	0	0	0	0	18	3	16	55
Subtotal East Asian	34	85	160	9	5	74	1	0	2	6	10	16	0	1	3	9	29	148	59	130	403
Subtotal Others	66	167	284	2	14	124	1	0	3	5	14	17	1	1	3	10	34	215	85	230	646
Total	488	1 099	1 732	120	552	1 595	132	230	521	386	640	646	114	163	287	268	681	2 034	1 508	3 365	6 815

Viewed through publications in 41 core journals over the last quarter of a century, the global higher education research community comprises about 27,000 individual academics. However, the scale of their participation through publication remains disappointingly low in the context of the social and economic phenomenon of global higher education expansion. Analysis of elite and core journals effectively demonstrates that for the vast majority of researchers in the field, higher education is not their prime research interest. Alternatively, they do not regard (elite and core) higher education journals as their prime locus. Of 26,881 academics publishing in core journals, 878 (about 3.3%) have authored or co-authored at least 5 articles in the last quarter of a century, including 274 (of 8,226) in elite journals (3.3%). These constitute the publishing core of the global higher education research community. Based on a total author count, eight in ten academics remain on the publishing periphery, having authored or co-authored a single article in elite (78.8%) or core journals (79.5%).

About three-quarters of these full-timers come from the USA or from other Anglo-Saxon systems while 26.4% (elite) and 25.4% (core) come from elsewhere. Part-timers fall into a similar pattern: 29.8% in elite journals and 32.3% in core journals come from these countries. As expected, US and Anglo-Saxon dominance is stronger in elite journals, which tend to be longer established. In contrast, the omnipresence of part-timers with a single publication in elite and core journals contributes to the status of higher education research as a lower-citation field than other areas of social science. Publication-driven scholarly conversation is clearly hindered by the omnipresence of infrequent contributors; the ensuing low engagement with theory (Clegg 2012) may also contribute to perceptions of the field as fragile (Jung and Horta 2013) and immature (Tight 2014). Other than the CiteScore analyses, longitudinal data-driven cross-disciplinary comparison with other social fields is beyond the scope of this study, but the issue seems especially relevant in multidisciplinary fields.

The authorship patterns reported here have serious implications for the future of higher education research and its global and national communities. From a long-term perspective, the global higher education research community seems highly stratified; few scholars publish intensively in elite and core journals, and many publish just once. This perhaps indicates that most are policy-oriented practitioners, administrators, or teaching-focused, supporting Tight's description of the field as an "a-theoretical community of practice" and Santos and Horta's (2018) view that the field is populated by "part-timers," who do not see themselves necessarily as located within higher education studies and differ fundamentally from frequent contributors to them (Santos and Horta 2018). However higher education researchers may publish consistently (and may be consistently cited) beyond the field's elite and core journals—for example, in lower-tier non-indexed higher education journals or in other fields. They may have published in their national language in both types of journal, as well as in books in that language or in English. In any event, it remains the case that the field is relatively small, fragmented and under-globalized, possibly immature.

If part-timers are producing most of the published research, with a tiny proportion accounted for by full-timers (or, in Tight's (2018) terms, "regular" authors), it may

prove difficult to advance the level of scholarly conversation toward maturity. The present findings align with Jung and Horta's conclusions regarding the composition of the higher education community in Asia, where 66% of the 244 institutions engaged in higher education research published only one article between 1980 and 2012 while just 15% published two articles. They characterized this situation as “few institutions on the shoulders of fewer scholars” (2013: 411–412)—in some cases single scholars, which seems to fit the global picture as reported here.

The present findings confirm that only two global or international elite journals: (*Higher Education* and *Studies in Higher Education*) have attracted an increasing share of non-Anglo-Saxon and non-US authors (especially Europeans) over time. *Higher Education Research and Development* remains an Anglo-Saxon journal, with a small share of author affiliations from the rest of the world. Consequently, while the cluster of traditional elite journals remains stable, major bibliometric characteristics confirm that only two can be regarded as international in terms of authorship affiliations beyond the Anglo-Saxon world. One interesting question for future research is whether these trends reflect editors' and/or reviewers' policies or an aggregate of authors' decisions about where to send manuscripts. This issue could be explored through a combination of bibliometric studies, surveys and interviews.

The present research has several limitations. First, the analysis did not include books and book chapters but focused on refereed journal articles as “the gold standard” in higher education research (Tight 2018). While books and book chapters are clearly important for reputational standing in the social sciences, reliable global comparative data on book authorship and citation patterns are not currently available. Second, despite the widespread use of national languages in higher education research, the 6 elite and 41 core higher education journals are exclusively English-language, and the list does not extend to the many English-language journals outside the Scopus database. While a more wide-ranging list could be compiled, relevant detailed longitudinal bibliometric data (especially for citations) are not available. A parallel study might usefully explore the Web of Science database and its indexation system, but coverage of the social sciences is higher in Scopus (Sugimoto and Larivière 2018; Moya et al. 2007). Third, the influence of higher education research on its various stakeholders extends far beyond the citations used here as a proxy for impact. Nevertheless, citations provide “a glimpse of indebtedness” and situate “the present enunciation within the entirety of the conversation” (Budd and Magnuson 2010: 303)—in this case, the global higher education literature and beyond. Finally, this quantitative study might usefully be complemented by qualitative exploration, including open-ended survey and interview questions about the role of elite journals in academic career promotion and salaries from a cross-national perspective.

In today's highly competitive global science arena, the intimate links between top-tier journal publication and both individual and institutional success (Marginson 2014; Rosinger et al. 2016) are better understood in the context of the prestige maximization model and the principal-agent theory. These two research strands position publishing as a prestige-generating tool and as a useful if simplified index for principals

(governments, research councils and university leaders) in evaluating research conducted by their agents (academics). These perspectives serve to enhance understanding of the growing importance of top journals in global higher education research despite the de-concentration in technical terms of pure citations indicated by a declining Herfindahl-Hirschman Index over time.

In 1996-2018, the bulk of global higher education research published in elite journals was produced in the USA and other Anglo-Saxon countries (70.0%), Continental Europe (16.7%), and East Asia (5.1%). These are the major participants in the global research conversation, with gradually increasing participation from other world regions (8.2%). The changing distribution of country affiliations over the study period is indicative of wider processes affecting the global community. The dynamics of change point to the relative weakening of the field in the USA and its relative strengthening in Continental Europe, East Asia, and elsewhere. While the three national (domestic) elite journals (JHE, ResHE and RevHE) remain strongly American/Anglo-Saxon in terms of authorship patterns, the global profile of two non-American elite journals (HE and SHE) reflects the increase in non-Anglo-Saxon authorship affiliations.

Publishing (especially in top journals) and competitive external research funding increasingly determine institutional and departmental funding in research-intensive universities. High-publishing academics generate research funding while low-publishing academics attract little funding, and new researchers in the field of higher education “need to publish more (and more internationally) collaborate more (and more internationally) and raise more research funding” (Santos and Horta 2018: 675). In other words, seeking prestige is more important than ever before. Given the increasing links between academic success, highly cited publications, and competitive research funding, the role of elite journals in this new prestige economy can be expected to grow into the future.

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## Electronic Supplementary Data (ESD)





**Table 9.** A cross-sectional approach: the number of citations and articles 41 higher education journals, Scopus data, 2018 (in descending order, frequency and percent).

	Citations		Articles only	
	n	%	n	%
Higher Education	6 759	13.9	122	7.2
Studies in Higher Education	6 239	12.9	155	9.1
Internet and Higher Education	4 020	8.3	24	1.4
Research in Higher Education	3 821	7.9	44	2.6
Assessment and Evaluation in Higher Education	3 806	7.8	93	5.5
Higher Education Research and Development	2 985	6.1	99	5.8
Journal of Higher Education	2 792	5.8	24	1.4
International Journal of Sustainability in Higher Education	2 023	4.2	64	3.8
Teaching in Higher Education	2 011	4.1	62	3.6
Review of Higher Education	1 361	2.8	25	1.5
Journal of Geography in Higher Education	1 277	2.6	39	2.3
Journal of Higher Education Policy and Management	1 049	2.2	40	2.3
Journal of Further and Higher Education	1 048	2.2	78	4.6
Active Learning in Higher Education	941	1.9	42	2.5
Innovative Higher Education	888	1.8	31	1.8
Higher Education Policy	841	1.7	27	1.6
Higher Education Quarterly	727	1.5	27	1.6
Quality in Higher Education	722	1.5	18	1.1
Journal of Hispanic Higher Education	606	1.2	24	1.4
Journal of Diversity in Higher Education	598	1.2	42	2.5
Journal of Marketing for Higher Education	584	1.2	16	0.9
Tertiary Education and Management	560	1.2	28	1.6
Journal of Computing in Higher Education	516	1.1	30	1.8
International Journal of Educational Technology in Higher Ed.	482	1.0	48	2.8
Arts and Humanities in Higher Education	371	0.8	24	1.4
Industry and Higher Education	351	0.7	38	2.2
European Journal of Higher Education	188	0.4	17	1.0
Higher Education, Skills and Work-based Learning	170	0.4	35	2.1
Perspectives: Policy and Practice in Higher Education	164	0.3	16	0.9
Journal of Continuing Higher Education	157	0.3	23	1.3
Journal of Applied Research in Higher Education	128	0.3	44	2.6
Christian Higher Education	119	0.2	20	1.2
Journal of Higher Education Outreach and Engagement	77	0.2	30	1.8
NASPA Journal About Women in Higher Education	68	0.1	19	1.1
Art, Design & Communication in Higher Education	44	0.1	13	0.8
Higher Education Pedagogies	18	0.0	34	2.0
International Journal of Learning in Higher Education	17	0.0	14	0.8
Language Learning in Higher Education	8	0.0	28	1.6
International Journal of Higher Education	6	0.0	109	6.4
Higher Education Forum	5	0.0	30	1.8
Tuning Journal for Higher Education	0	0.0	8	0.5
Total	48 547	100	1 704	100