Data Article

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Prestige and independence-controlled publication performance of researchers at 14 Hungarian research institutions between 2014 and 2018 – a data paper

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Abstract: This data article describes a dataset showing the five-year performance of 471 researchers from 14 Hungarian research institutions, with a total of 3219 observations. Each observation represent items produced between the 1st January 2014 and the 31th December 2018 by a researcher employed in the sampled research institutions from one of six research output types. Due to a prestige and independence-controlled categorization of research output, and the scarcity of easily accessible, well-structured data curated for research performance evaluation, this dataset can play an important role in new research evaluation policies at Hungarian research institutions aiming to enhance global competitiveness by fostering scientific excellence and innovation.

Keywords: research institutions; publication trends; science policy; scientometrics; Research Assessment: Hungary

Ideas and Aims

Academic performance evaluation has become a key issue in almost all Central and Eastern European countries (Dobbins & Kwiek, 2017; Dobos et al., 2020); among them Hungary (Sasvári & Urbanovics, 2019; 2021), and the topic will continue to challenge policymakers both at the national and institutional level for many years to come. In the Western academic tradition, the measurement of academic performance is orienting toward research indicators (Ennew & Greenaway, 2012; Kaulisch & Enders, 2005). The Western idea of personal academic excellence is closely tied to publishing (and being cited) in top tier journals present in global bibliographic databases, which in turn has a direct effect on academic promotions and winning competitive grants (Bormann, 2017; Demeter, 2020; Ronda-Pupo & Katz, 2018). Staff excellence is also part of the wider context in which research-intensive higher education institutions amass reputational capital within the framework of transnational comparisons solidified in university ranking tables, attracting and securing further agents for knowledge production and earning advantages for their countries and region in the global

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knowledge economy (Inzelt et al., 2014; Locke et al., 2018). Until recently—and mainly due to historical reasons—academic excellence in Central and Eastern European (CEE) countries was less tied to scientometric indicators and more plagued by informalities compared to the U.S. and Western Europe. Despite having numerous recent examples from the region where central and institutional-level quality control measures were reformed based on output evaluation practices currently in application at Western European institutions, most of the region's academic life (including in Hungary) is still characterized by its communist-socialist legacy (Dobbins 2011; 2015; Dobbins & Kwiek, 2017). This means that most Higher Education Institutions in these countries are still primarily teaching-oriented with a lighter research load, while the highest quality research is produced in the national Academy of Sciences. However, in some, if not most, subfields of humanities and the social sciences, quality control at these Academies is still weak, or not applied with sufficient consistency to motivate performance (Asheulova & Dushina, 2014; Havas & Fáber, 2020).

The dataset presented in this paper was constructed with multiple ideas and aims in mind. The basic ideas behind its compilation are that Hungary needs to develop a national science evaluation policy which prioritizes prestigious research output and international visibility in humanities and social sciences (and in that sense, to become closer to the current standards of core countries in academic knowledge production). At the same time, administrative measures must be taken to decrease the corruptive effects of informalities; that is, various practices mediated through social networks capable to affect and even secure science evaluation outcomes normally based on publicly available, official rules, criterias or policies. In this paper, while acknowledging the constructive power of informalities in the case of an ineffective system held down by obsolate structures and practices, especially in an Eastern European regional context (Darden 2008, Ledeneva 2013), the authors use informalities as a normatively negative term associated with favoritism, cronyism and nepotism. Such informalities provide special privileges to relatives, friends and people with similar ideological/religious convictions and those in one's personal or institutional academic network during the evaluation of their scientific performance.

It is an imperative that in order to minimize the effect of gaming the system, the above two ideas cannot be treated separately, as producing prestigious research as a result of informalities would defeat the very idea of scientific excellence. Therefore, individual- and institutional-level metrics of research output must be controlled for independence. A distinction from publishing only or mainly in reputable journals of national and regional origins is necessary to assure that the research output-based merit of individual researchers or research institutes remain unaffected by the effects of symbolic and social capital most commonly acquired by and at the disposal of Hungarian academics. This would also bring the practice of padding indexed institutional or departmental journals with papers produced by authors connected to the same institution/department to an end and using the journal as a depository where results are published without going through a truly independent peer review process.

In recent times, there were some heavily criticized government-initiated shifts and changes in the Hungarian academic landscape, which continues still today. Government attacks on "liberal" academics and academic circles unsympathetic toward the Orbán government started in the early 2010s (Habermas and Nida-Rümelin 2011), evoking similarly hostile public criticism from government-critical intellectual circles toward academics connected to, or leaning toward the Orbán-regime. Mid-decade Hungarian governmental science policy mainly aimed at favoring applied research in STEM disciplines. The government tried to financially motivate students into economically strategic fields and reserving state funding for such majors, at the expense of other disciplines including humanities, law, and management studies (Marcus 2014). At the same time, new research institutions, grants and scholarships popped up as alternatives to existing, established research institutions and funding, with the aim of building

government-favorable discourses and providing scientific legitimation for the right-wing governing party's political agendas (Karáth 2018, Tóth 2019). Reaching this political goal could not have been done by other means, since social sciences have a long history of being left-leaning, progressive (Rothman et al., 2010; Gross 2013) and irreligious (Ecklund & Scheitle 2007; Yancey et. al. 2015) not only in Hungary, but at a general level in Western academe. This asymmetry leads to political bias, which, according to a model proposed by Honeycutt and Jussim (2020), can affect who becomes an academic social scientist, what questions are asked, how key constructs are measured, how findings are interpreted, what ideas or findings are suppressed, what literature are considered relevant, valuable or important (and therefore, cited), and whether or not the research findings and conclusions will be canonized in a particular field. In this ideologically sensitive environment, "scientific literature itself becomes politically biased, regardless of whether individual researchers harbor such biases" (2020:81). Therefore, it was reasonable to think that new research institutions, and new, state-funded research will provide topics, research questions, subjects, results and interpretations more apt to support government narratives, and to raise a new generation of social scientists with political values different from what is prevalent in the current academic community.

Some constelations of political bias can actually help produce prestigious research, masking the inadequate quality of the research in question. Such a situation has been recently referenced in the context of research quality and evaluation by the current president of the Hungarian Academy of Sciences (HAS), Tamás Freund. Known as a religious, moderately conservative figure with good connections in the Hungarian government, Freund criticized those social scientists employed in the networks of HAS whose performance, if measured by international standards, is inadequate. They can only prevail hiding behind the mask of government criticism, states Freund, and it is not rare that a manuscript from a weakly performing social scientist would be rejected by a prestigeous international journal based on professional reasons, yet they accept it with open arms if wrapped in criticism of the Orbán-government (Balázs 2019, Őry 2020).

Freund is also actively trying to manage government expectations by playing a role in the restructuring of HAS, a process by which its former research network (15 research institutes) and all of their assets were relocated to the newly founded Eötvös Loránd Research Network with (among others) the promise of better quality control and more just, performance-based allocation of research funding. It is evident that these reforms can only be beneficial for the Hungarian research environment, political motivations aside, if they help establish and enforce merit-based motivational and sanctioning mechanisms, applied independently from political values expressed by the individual researcher, or stance taken in public discourses at the institute level.

In light of the sometimes unnecessarily politicized debates about who is an excellent researcher, who merits grants, positions or who should be responsible for managing departments or research institutes, there is a genuine need for evidence-based policymaking. The presented dataset, which is informative on its own, can be a valuable tool for evidence-based policymaking in the form of providing an overview of the recent research output of both new research institutions of the System of National Cooperation (SoNC), and old ones from the research network of the HAS, as well as their particular researchers employed.

The data can be analyzed further, advancing the implementations of various rewards and sanctions based on quality research output (or the lack thereof). Meticulously researched national science policies are also apt to advance positive, negative, centripetal, and centrifugal mobility within universities and research institutions. In this context, positive mobility means attracting highly skilled foreign academics motivated to produce research of similar quality to what can be expected based on their recent output. Negative mobility means creating a research and institutional environment in which national researchers capable (and willing) to publish

their results at a top international level are symbolically and financially compensated for their efforts, preferably at a degree which makes them less likely to relocate to a foreign country to further an academic career. Centripetal mobility is meant to designate a process during which high-performing members of the academic community so far marginalized or excluded from access to funding and various forms of symbolic appreciations in academia, are attracted and repositioned closer to the center, to a degree which reflects their relative scientific merits in that specific community. Finally, as the counterpart to the above, centrifugal mobility is to force unproductive/low-output researchers currently in high academic positions to the symbolic periphery of a given research institution (or a research-intensive higher education institution), where their clout, salaries and access to funding, as well as their responsibilities and expected results are adjusted to their academic merits.

The authors believe that the above can lead to a more just, performance-based distribution of positions, responsibilities and available funding which enhance global competitiveness by fostering scientific excellence and innovation at the national level. We wish to contribute to this process by providing the dataset below.

Methods

Categorization of the analyzed institutions

We collected data from governmental and academic research institutes covering politically sensitive soft science fields. Based on their thematic coverage, we selected eight recently founded governmental, and six independent, traditional academic institutions from the network of the Hungarian Academy of Sciences with overlapping research profiles. Regarding the "research" and "academic" character of these institutions, we relied on their self-definition as reported in their official documents and communications available online. An institution was categorized as governmental if and only if the governmental founding and funding of the institution was well documented in public sources. Institutes were categorized independent for denoting their lack of dependency from the current Hungarian government and does not encompass meanings referring to lack of dependency from any other funding entity beside the current Hungarian government. The authors were in agreement in categorization decisions in every case.

Data collection

Data collection and categorization was conducted from the 13th July to the 29th August, 2019. An online search in Google.hu identified governmental research institutions and we then located and read through their websites. After confirming their self-definition as research institutions, a list of institutional staff was obtained from the websites, from which those employed full time primarily to do research were selected (all other, i.e. administrative, or training staff, were deselected). During the search, 11 governmental research institutions was found, but only seven had the name of their research staff openly available on the institutional website. The remaining four were contacted through their listed contact email addresses and were asked for this information in official letters. One of them provided the list of their research staff at request, one declined based on data confidentiality concerns, and two did not reply at all.

In total, the research staff of eight governmental institutions[1] in the sample, with 78 researchers total were included. We then selected six independent institutions with a total of 393 academic staff from the research network of the Hungarian Academy of Sciences,[2] their profiles covering approximately the same areas. Research staff employed in these institutions were retrieved from their respective institutional websites by applying the same screening criteria. All academic institutions listed their research staff on their webpages.

The publication output of each researcher found on these lists was collected and organized in Microsoft Excel. First, we checked the researcher's profile in Elsevier's SCOPUS, which was preferred for an overview of publication output over Clarivate Analytics' Web of Science because of the former's better coverage of the social sciences. We used SCOPUS Author Search to confirm whether the researcher is present in SCOPUS at all. Due to differences in Western and Hungarian name ordering, for a researcher "Firstname Lastname" we both looked for "F. Lastname" and "Firstname L.". We received multiple hits multiple times, in these cases we checked for matching institutional affiliations, then accessed these profiles independently. Not all researchers had a profile in SCOPUS, and some of them had multiple partial profiles under different IDs. To ensure the reliability of our data we double-checked the information provided by SCOPUS by comparing them with their MTMT (Hungarian Scientific Bibliography Database) profile, which is the main Hungarian database for keeping the publication record of academic staff members, and its usage is mandatory for all Hungarian academics. Items present in only one of these databases, or items categorized differently in SCOPUS and in MTMT were confirmed individually for their respective item type.

Data categorization

In order to be able to assess the publication output of the analyzed institutions' research staff, we used a novel categorization for highlighting the independence and the quality of published items. For independence, we made a distinction between items published with national (Hungarian), regional (Central and Eastern-European) and extra-regional (other parts of the world) publishers. For quality, we first narrowed the list of publications to peer-reviewed ones, meaning only original articles, review articles, chapters in edited books and monographs were considered. We double checked the article types offered by SCOPUS every time by looking at the actual item on the publisher's website. In the occasions the database misrepresented the categorization of publications (for example, labeling a 2-page book review as research article, or a book chapter as an article), the authors recategorized the item in question. After controlling for internationally, peer reviewed content and article type, we adopted SCIMAGO's quartile-type classification (Q1 – Q4) to the collected articles published in extra-regional journals: The first quartile (Q1) was for papers published in journals indexed in the top 25 percent of SCIMAGO-indexed journals of a specific science field, Q2 represents journals between the top 25 percent and the top 50 percent, and so on. We have labeled the newly constructed categories as "ExtR Q1", "ExtR Q2", "ExtR Q3" and "ExtR Q4".

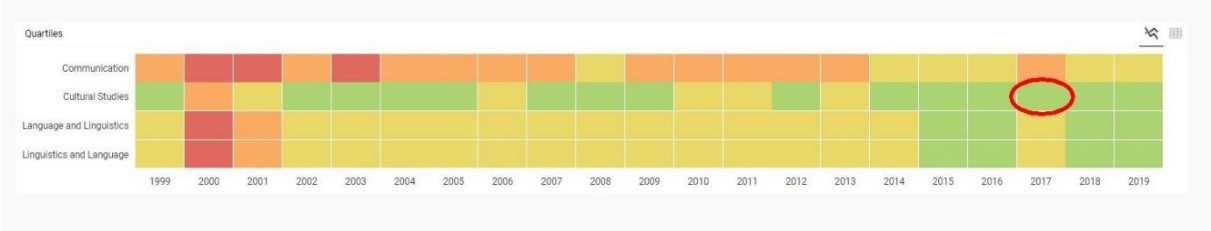
We always used the journal's SCIMAGO classification of the same year in which the articles were published. If a journal was assigned to more than one field, we used its best

[1] Namely; Tamás Molnár Research Centre (labeled: SoNC Tamás Molnár RC), Research Institute of Art Theory and Methodology at the Hungarian Academy of Arts (SoNC HAA RIATM), VERITAS Research Institute and Archives (SoNC VERITAS), Research Institute and Archives for the History of Regime Change (SoNC RETÖRKI), Pallas Athene Geopolitical Research Institute (SoNC Pallas Athene GRI), Migration Research Institute (SoNC Migration RI), Center for Fundamental Rights (SoNC CFR), and Research Institute for National Policy (SoNC RINP).

[2] Namely, Institute for Political Science (labeled: HAS IPS), Institute of Art History (HAS IAH), Research Institute for Linguistics (HAS RIL), Institute for Sociology (HAS IS), Institute for Legal Studies (HAS ILS) and Institute of History (HAS IH)

quartile for classification purposes. For example, a 2017 article published in *Social Semiotics* (ISSN: 1470-1219), would have been classified as a ExtR Q1 article, based on its publisher (Taylor and Francis, UK) and its Q1 position in Cultural studies:

Figure 1: Scimago classification values assigned to journal articles



Source: scimagojr.com

Articles published in SCOPUS-indexed journals from the wider CEE region, or specifically from Hungary went to the "Regional - CEE" and "National - HUN" categories, independently from the quartile their journals belonged to in SCIMAGO. We have not used further quality classification for SCOPUS-indexed chapters and monographs either; they were simply categorized under "Chapters" and "Monographs". Monographs were only counted if they were published by a non-Hungarian academic publisher.

Data collected from SCOPUS and compared with MTMT were categorized for each individual researcher in the pattern shown in Table 1 (Numerical values represent the number of publications coded into the respective categories):

Table 1: Data Categorization pattern

Name	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	National – HUN	Chapters	Monographs
Szabó János	0	0	1	0	0	2	0	0

Source: Own compilation

In the case of independent academic institutions, we also categorized the level of individual staff members in the Hungarian academic hierarchy. As a result, we listed the staff members to three exclusive categories. The first (highest) category consists of research professors and scientific advisors. The second (middle) category consists of senior research fellows and research fellows, while the third (lowest) category entails assistant research fellows.

Data Reliability

With the aid of a second coder, we calculated Cohen's kappa for each output category. From a list of 471, 50 names were selected randomly using Random.org's True Random Number Generator. After familiarizing with the coding protocol, the second coder categorized the publication output of these 50 researchers on 15 January, 2021, which were then compared with the original results.

Table 2: Intercoder Reliability Summary: Cohen's Kappa Scores

	Percent Agreement	**Cohen's Kappa**	N Agreements	N Disagreements	N Cases
ExtR Q1	100%	**1**	50	0	50
ExtR Q2	100%	**1**	50	0	50
ExtR Q3	98%	**0.79**	49	1	50
ExtR Q4	100%	**1**	50	0	50
Regional - CEE	94%	**0.645**	47	3	50
National - HUN	86%	**0.441**	43	7	50
Chapters	98%	**0.898**	49	1	50
Monographs	94%	**0.231**	47	3	50

Source: Own compilation

According to the Landis and Koch (1977) interpretation scale, coders were in "almost perfect" agreement in four variables (ExtR Q1, Q2, Q4 and Chapters), "substantial" agreement in two variables (ExtR Q3 and Regional - CEE), "moderate" agreement in one variable (National - HUN) and "fair" agreement in one variable (Monographs). In general, percent agreement was high with all variables (lowest percent agreement was 86% in the case of National - HUN) but Kappa came out relatively low. This considerable reduction in the level of congruence occurred due to the high ratio of 0-0 pairs: Many times and with the majority of researchers, there was no publication output to observe in the above categories between 2014 and 2018, greatly increasing the level of chance agreements.

We have decided to publish only data with at least substantial inter-coder agreement ($\kappa \geq 0.61$) as we wanted to avoid criticism regarding the level of confidence that should be placed in the accuracy of the dataset.

Data

Summary statistics for the six HAS and eight governmental research institution are presented in Tables 3-16 and Figure 2-15. The categorized data can be downloaded from Appendix A as supplementary material.

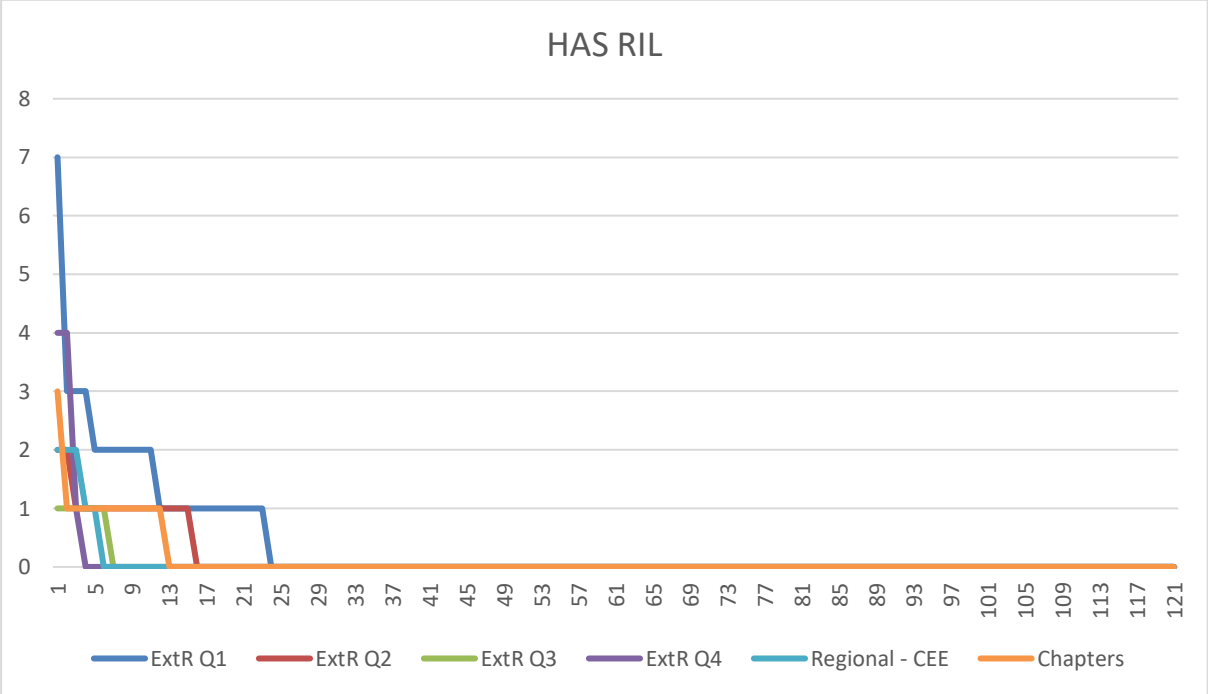
Table 3: 2014-2018 publication output statistics of HAS RIL researchers (n=121)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**42**	**17**	**6**	**9**	**8**	**14**
Mode	0	0	0	0	0	0
Average	0,3471	0,1404	0,0495	0,0743	0,0661	0,1157

Average per year	0,0694	0,028	0,0099	0,0148	0,0132	0,0231
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	1	1	0	0	0	0
p100(Maximum)	7	2	1	4	2	3
SD	0,9155	0,3921	0,217	0,5169	0,3336	0,3897
skewness	4,1584	2,8882	4,2018	7,3761	5,2475	4,4431

Source: Own compilation

Figure 2: 2014-2018 publication output histogram of HAS RIL researchers (n=121)



Source: Own compilation

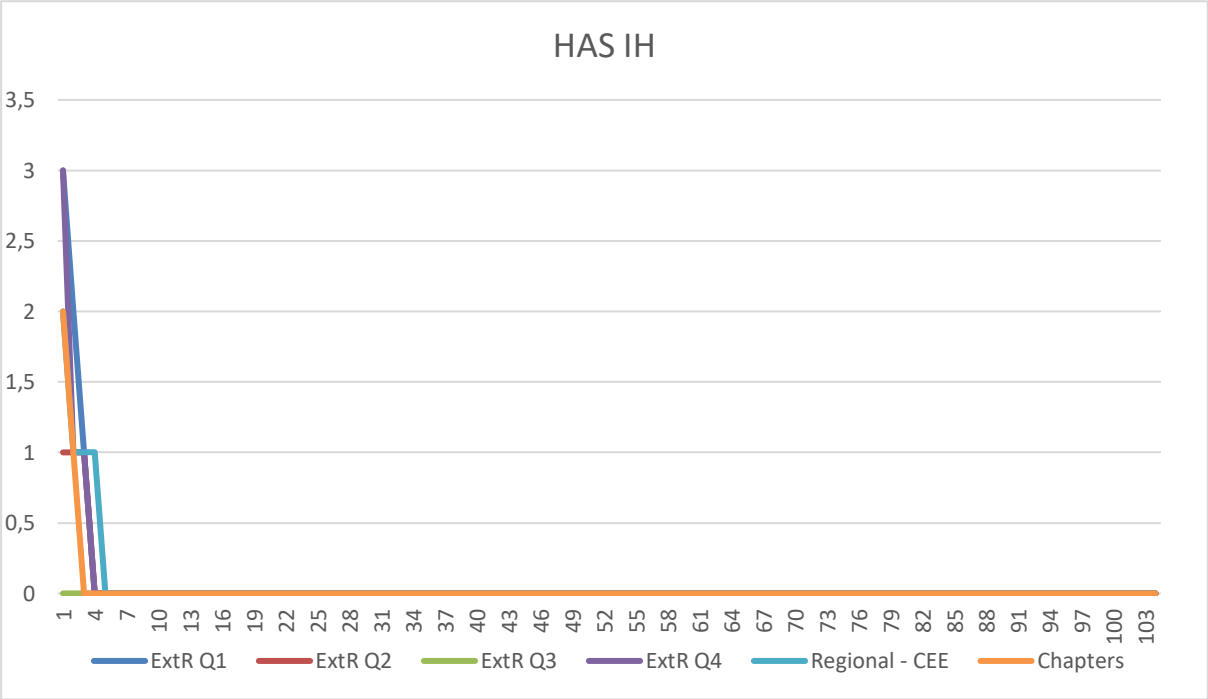
Table 4: 2014-2018 publication output statistics of HAS IH researchers (n=104)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**6**	**3**	**0**	**5**	**5**	**3**
Mode	0	0	0	0	0	0
Average	0,0576	0,0288	0	0,048	0,048	0,0288
Average per year	0,0115	0,0057	0	0,0096	0,0096	0,0057
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0

p75	0	0	0	0	0	0
p90	0	0	0	0	0	0
p100(Maximum)	3	1	0	3	2	2
SD	0,3623	0,1673	0	0,3216	0,2549	0,2173
Skewness	6,8948	5,712	N/A	8,0442	5,8959	8,1445

Source: Own compilation

Figure 3: 2014-2018 publication output histogram of HAS IH researchers (n=104)



Source: Own compilation

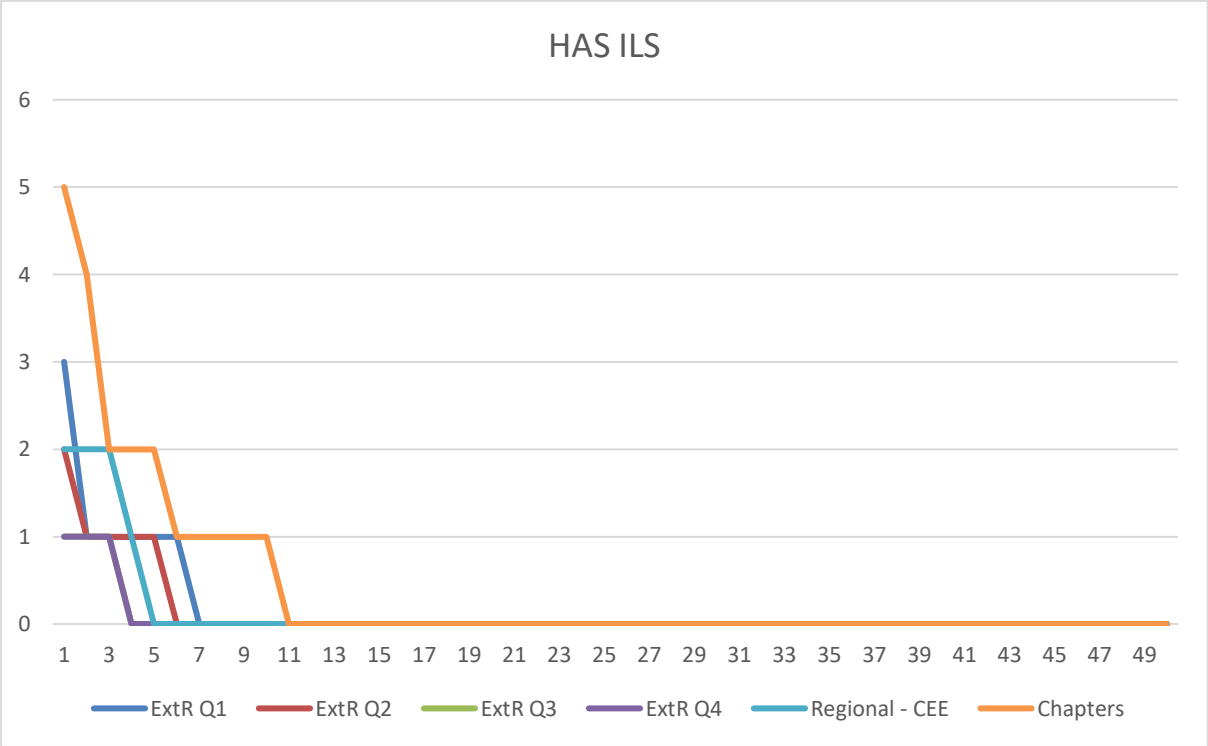
Table 5: 2014-2018 publication output statistics of HAS ILS researchers (n=50)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**8**	**6**	**3**	**3**	**7**	**20**
Mode	0	0	0	0	0	0
Average	0,16	0,12	0,06	0,06	0,14	0,4
Average per year	0,032	0,024	0,012	0,012	0,028	0,08
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	1	0,1	0	0	0	1,1
p100(Maximum)	3	2	1	1	2	5

SD	0,5043	0,3815	0,2374	0,2374	0,4903	1
Skewness	4,1290	3,449	3,821	3,821	3,4669	3,1925

Source: Own compilation

Figure 4: 2014-2018 publication output histogram of HAS ILS researchers (n=50)



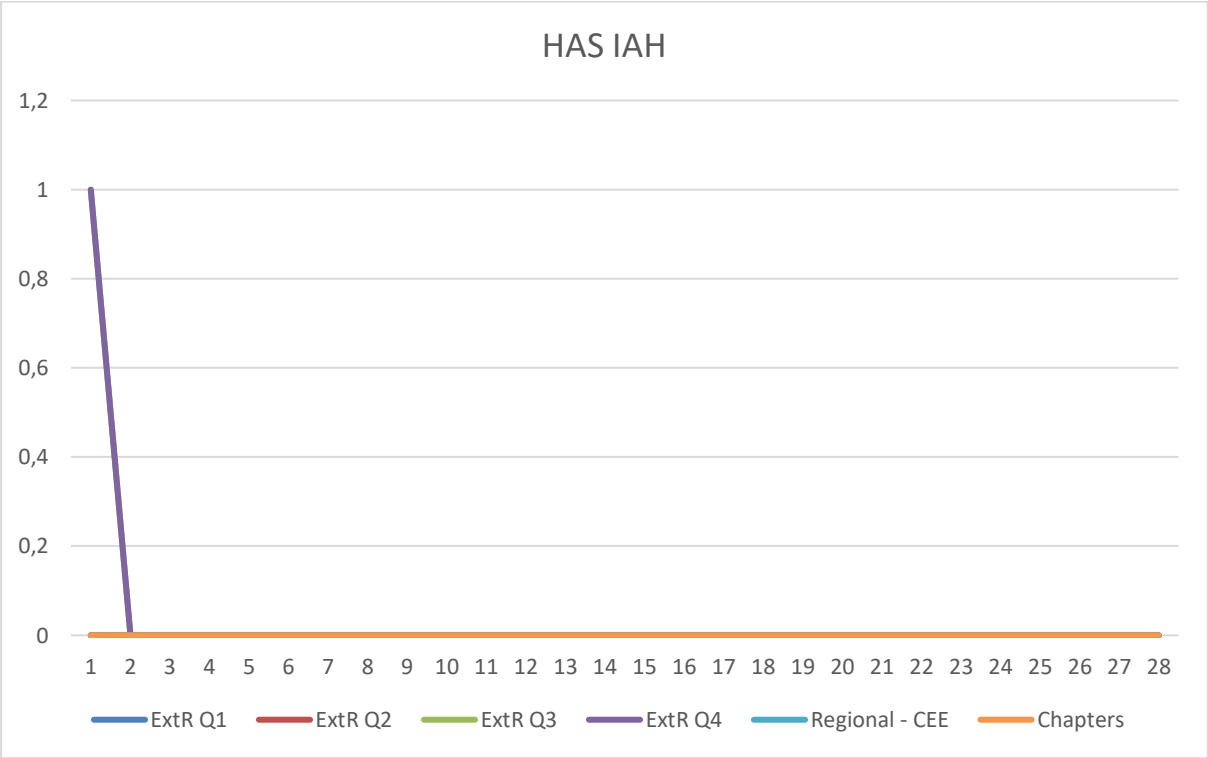
Source: Own compilation

Table 6: 2014-2018 publication output statistics of HAS IAH researchers (n=28)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**0**	**0**	**1**	**1**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0	0	0,0357	0,0357	0	0
Average per year	0	0	0,0071	0,0071	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0	0
p100(Maximum)	0	0	1	1	0	0
SD	0	0	0,1855	0,1855	0	0
Skewness	N/A	N/A	5,2915	5,2915	N/A	N/A

Source: Own compilation

Figure 5: 2014-2018 publication output histogram of HAS IAH researchers (n=28)



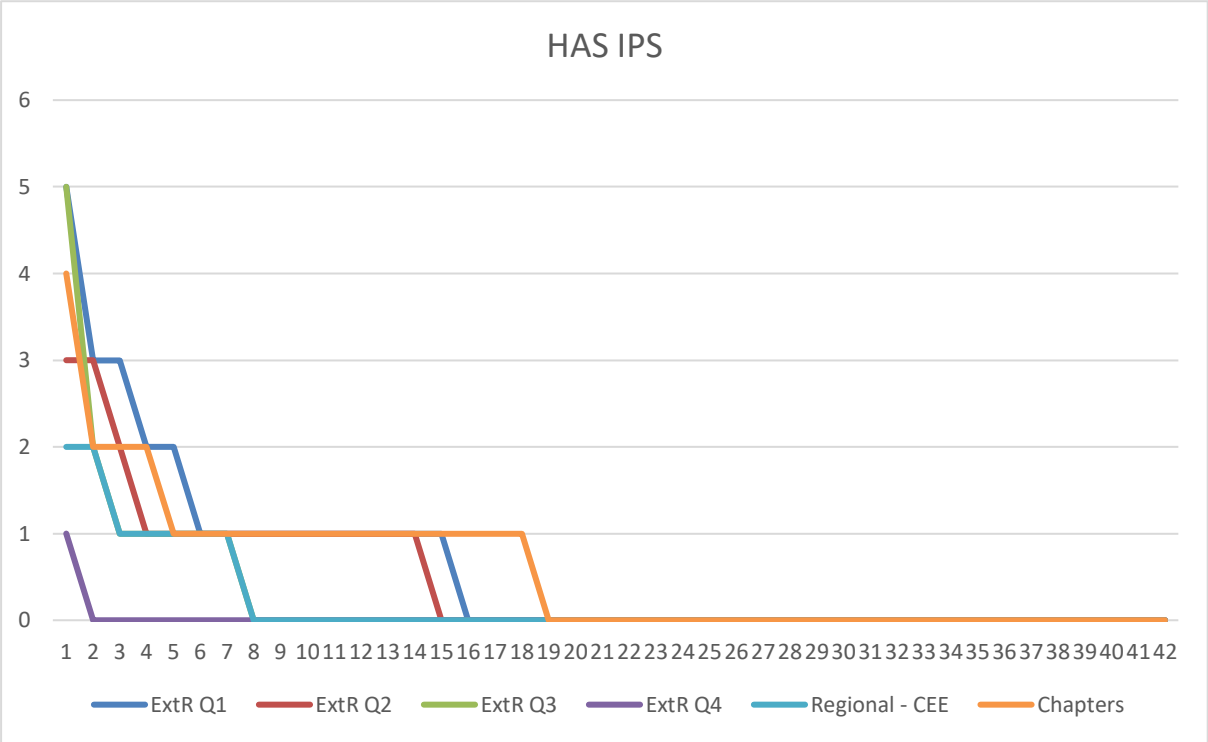
Source: Own compilation

Table 7:: 2014-2018 publication output statistics of HAS IPS researchers (n=42)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**25**	**19**	**12**	**1**	**9**	**24**
Mode	0	0	0	0	0	0
Average	0,5952	0,4523	0,2857	0,0238	0,2142	0,5714
Average per year	0,119	0,0904	0,0571	0,0047	0,0428	0,1142
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	1	1	0	0	0	1
p90	1,9	1	1	0	1	1
p100(Maximum)	5	3	5	1	2	4
SD	1,0478	0,7622	0,8531	0,1524	0,5134	0,8206
Skewness	2,4426	2,007	4,4076	6,4807	2,4582	2,0412

Source: Own compilation

Figure 6: 2014-2018 publication output histogram of HAS IPS researchers (n=42)



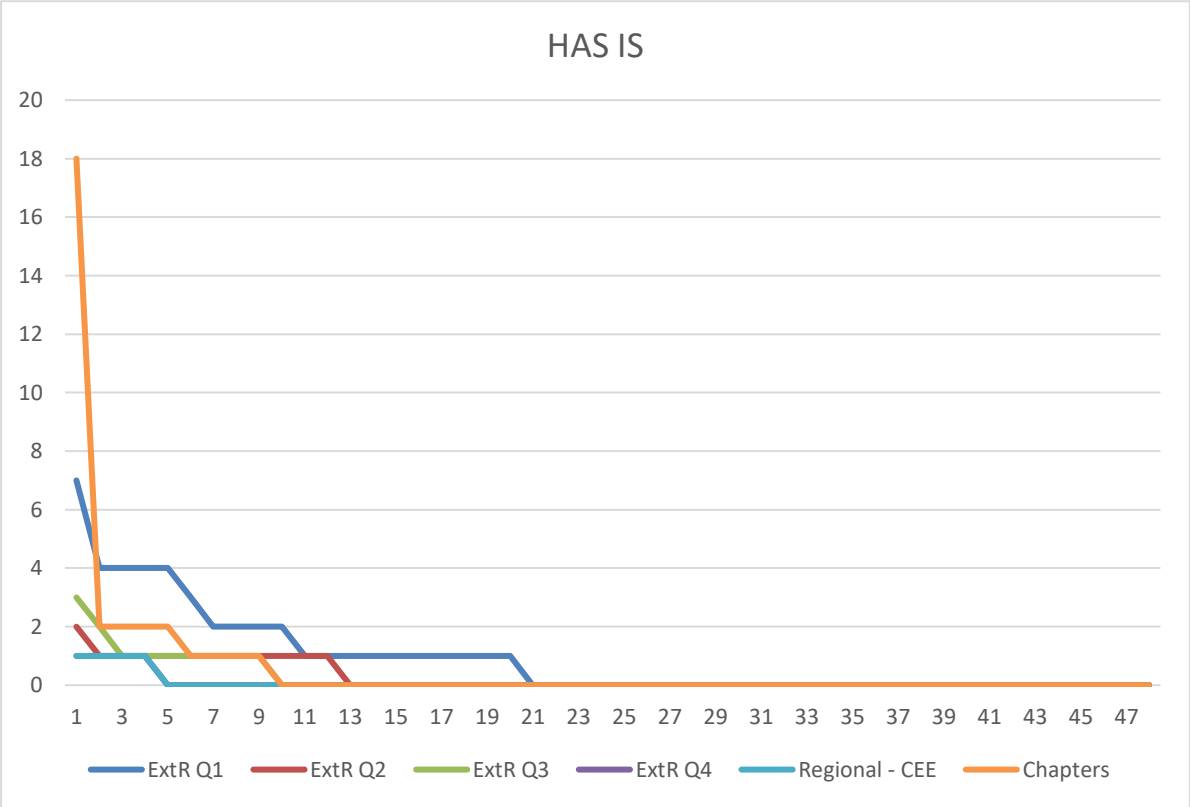
Source: Own compilation

Table 8: 2014-2018 publication output statistics of HAS IS researchers (n=48)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**44**	**13**	**12**	**4**	**4**	**30**
Mode	0	0	0	0	0	0
Average	0,9166	0,2708	0,25	0,0833	0,0833	0,625
Average per year	0,1833	0,0541	0,05	0,0166	0,0166	0,125
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	1	0,25	0	0	0	0
p90	3,3	1	1	0	0	1,3
p100(Maximum)	7	2	3	1	1	18
SD	1,4976	0,489	0,5951	0,2763	0,2763	2,603
Skewness	2,1447	1,6038	2,9087	3,1132	3,1132	6,3983

Source: Own compilation

Figure 7: 2014-2018 publication output histogram of HAS IS researchers (n=48)



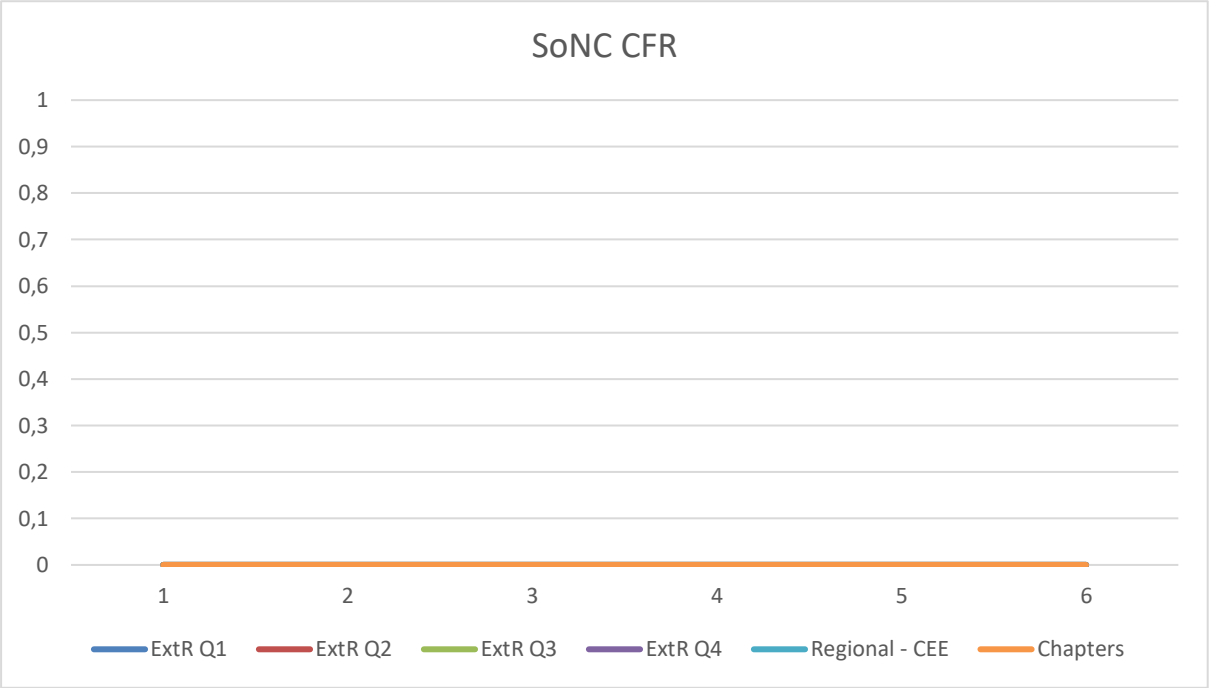
Source: Own compilation

Table 9: 2014-2018 publication output statistics of SoNC CFR researchers (n=6)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**0**	**0**	**0**	**0**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0	0	0	0	0	0
Average per year	0	0	0	0	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0	0
p100(Maximum)	0	0	0	0	0	0
SD	0	0	0	0	0	0
Skewness	N/A	N/A	N/A	N/A	N/A	N/A

Source: Own compilation

Figure 8: 2014-2018 publication output histogram of SoNC CFR researchers (n=6)



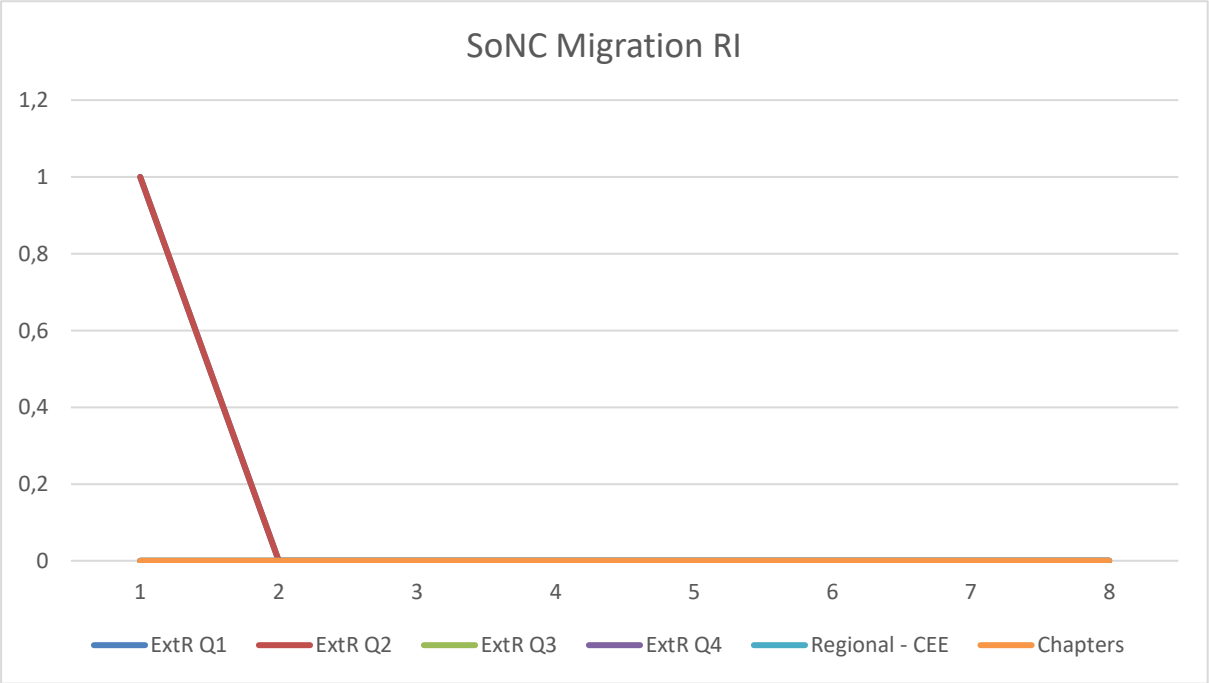
Source: Own compilation

Table 10: 2014-2018 publication output statistics of SoNC Migration RI researchers (n=8)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**1**	**1**	**0**	**0**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0,125	0,125	0	0	0	0
Average per year	0,025	0,025	0	0	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0,3	0,3	0	0	0	0
p100(Maximum)	1	1	0	0	0	0
SD	0,3307	0,3307	0	0	0	0
Skewness	2,8284	2,8284	N/A	N/A	N/A	N/A

Source: Own compilation

Figure 9: 2014-2018 publication output histogram of SoNC Migration RI researchers (n=8)



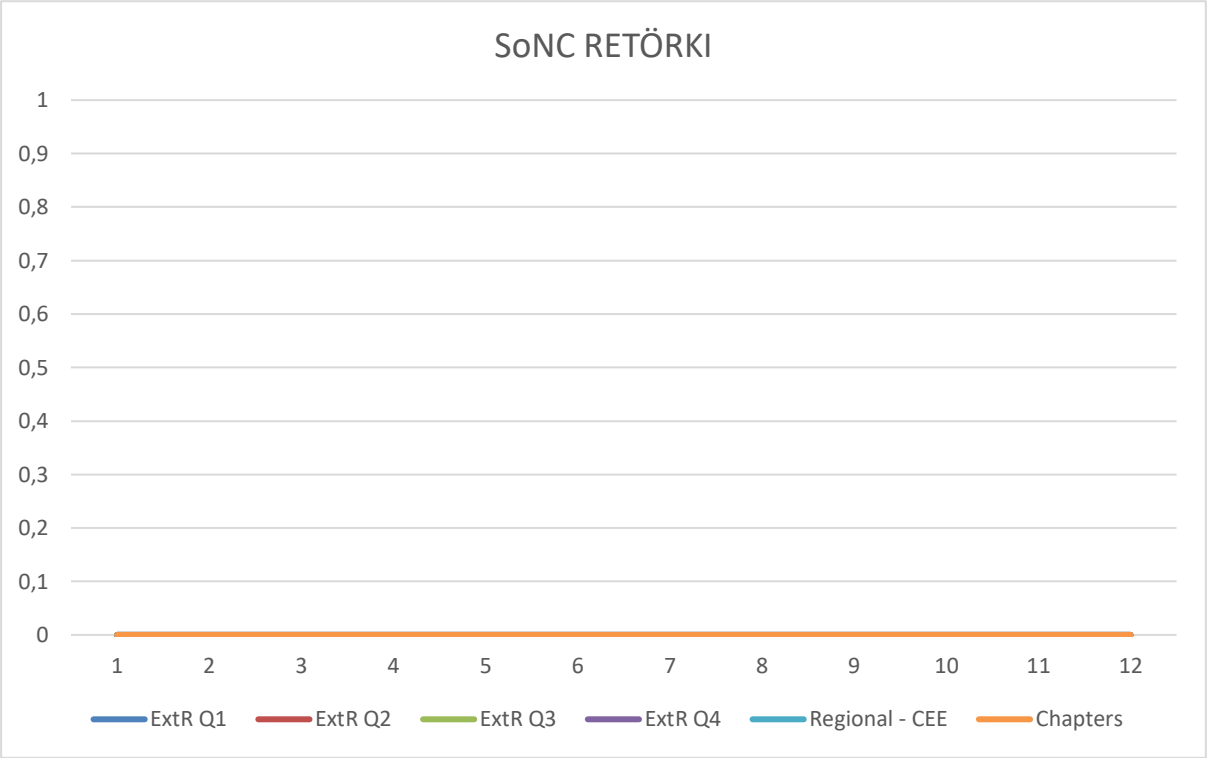
Source: Own compilation

Table 11: 2014-2018 publication output statistics of SoNC RETÖRKI researchers (n=12)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional - CEE	Chapters
Total	**0**	**0**	**0**	**0**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0	0	0	0	0	0
Average per year	0	0	0	0	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0	0
p100(Maximum)	0	0	0	0	0	0
SD	0	0	0	0	0	0
Skewness	N/A	N/A	N/A	N/A	N/A	N/A

Source: Own compilation

Figure 10: 2014-2018 publication output histogram of SoNC RETÖRKI researchers (n=12)



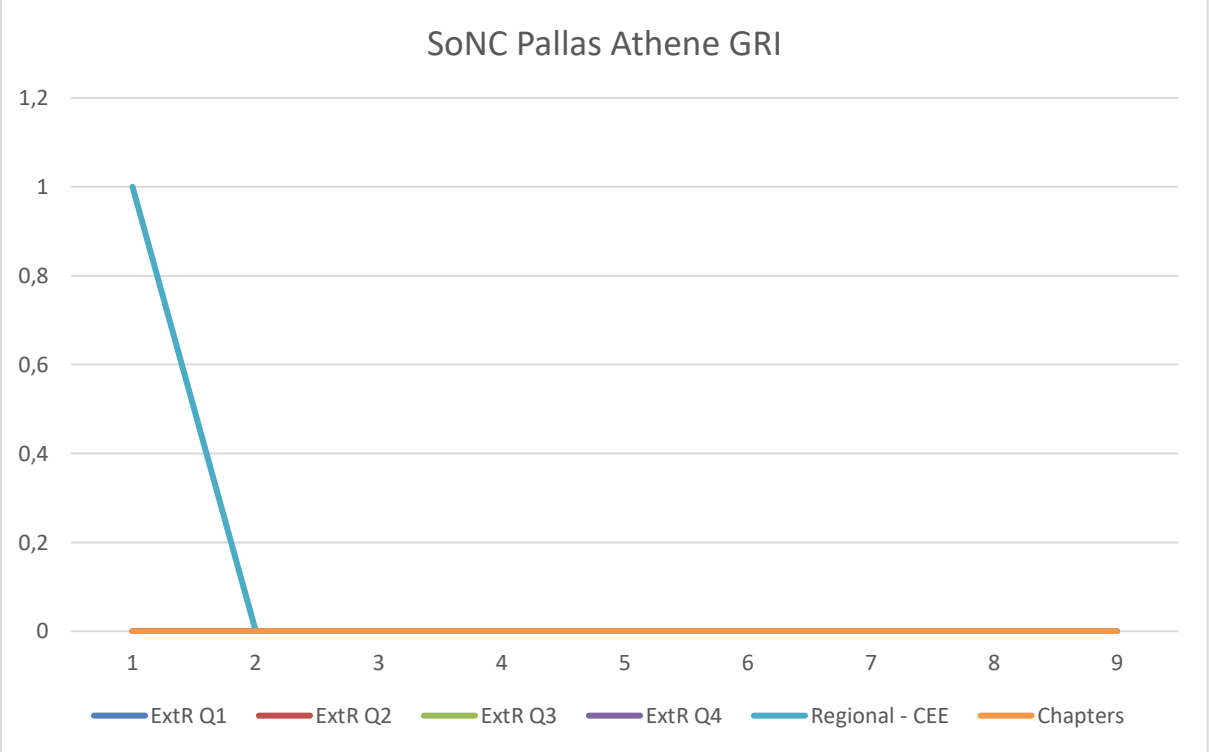
Source: Own compilation

Table 12: 2014-2018 publication output statistics of SoNC Pallas Athene GRI researchers (n=9)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**0**	**0**	**0**	**0**	**1**	**0**
Mode	0	0	0	0	0	0
Average	0	0	0	0	0,1111	0
Average per year	0	0	0	0	0,0222	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0,2	0
p100(Maximum)	0	0	0	0	1	0
SD	0	0	0	0	0,3142	0
Skewness	N/A	N/A	N/A	N/A	3	N/A

Source: Own compilation

Figure 11: 2014-2018 publication output histogram of SoNC Pallas Athene GRI researchers (n=9)



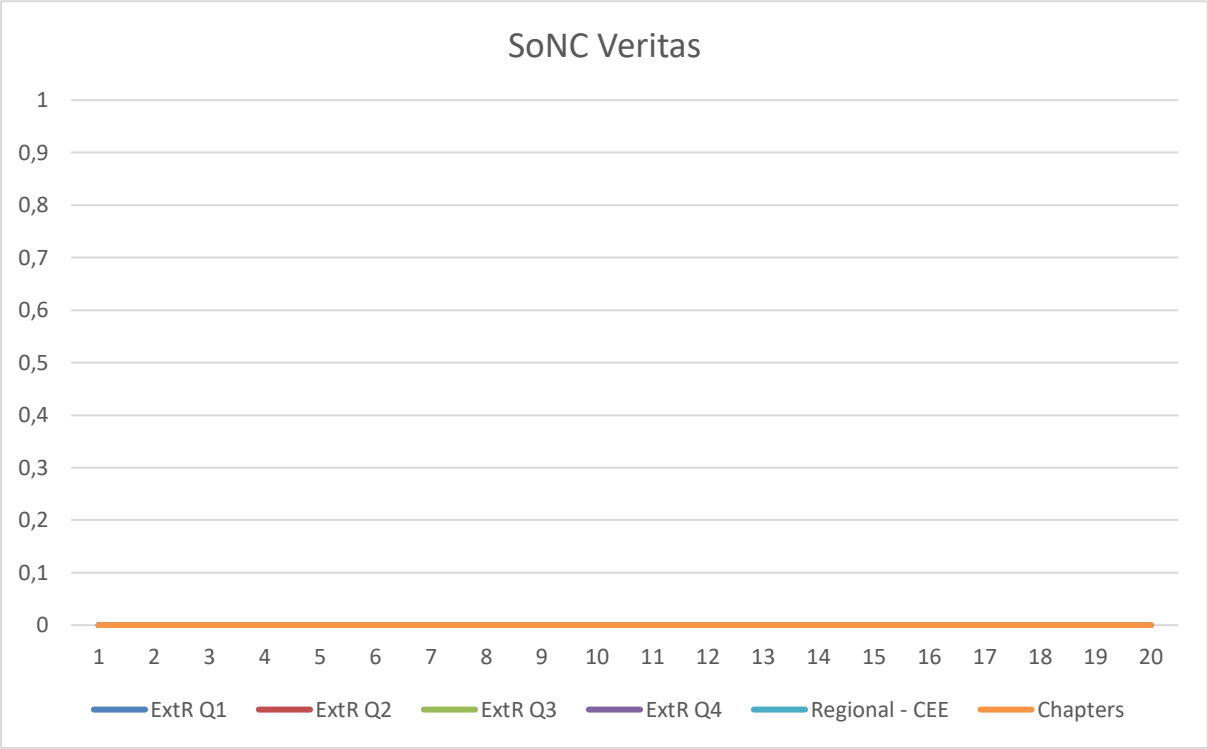
Source: Own compilation

Table 13: 2014-2018 publication output statistics SoNC VERITAS researchers (n=20)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**0**	**0**	**0**	**0**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0	0	0	0	0	0
Average per year	0	0	0	0	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0	0
p100(Maximum)	0	0	0	0	0	0
SD	0	0	0	0	0	0
Skewness	N/A	N/A	N/A	N/A	N/A	N/A

Source: Own compilation

Figure 12: 2014-2018 publication output histogram of SoNC VERITAS researchers (n=20)



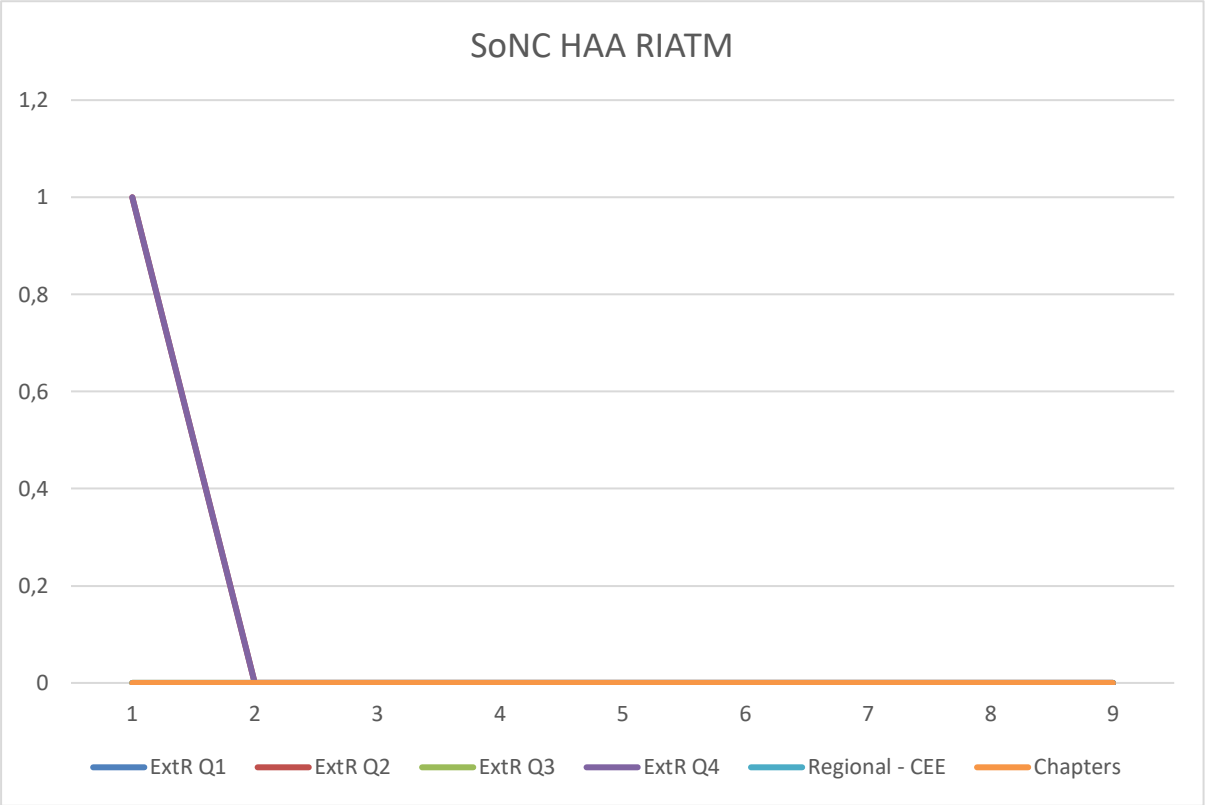
Source: Own compilation

Table 14: 2014-2018 publication output statistics of SoNC HAA RIATM researchers (n=9)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**0**	**1**	**0**	**1**	**0**	**0**
Mode	0	0	0	0	0	0
Average	0	0,1111	0	0,1111	0	0
Average per year	0	0,0222	0	0,0222	0	0
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0,2	0	0,2	0	0
p100(Maximum)	0	1	0	1	0	0
SD	0	0,3142	0	0,3142	0	0
Skewness	N/A	3	N/A	3	N/A	N/A

Source: Own compilation

Figure 13: 2014-2018 publication output histogram of SoNC HAA RIATM researchers (n=9)



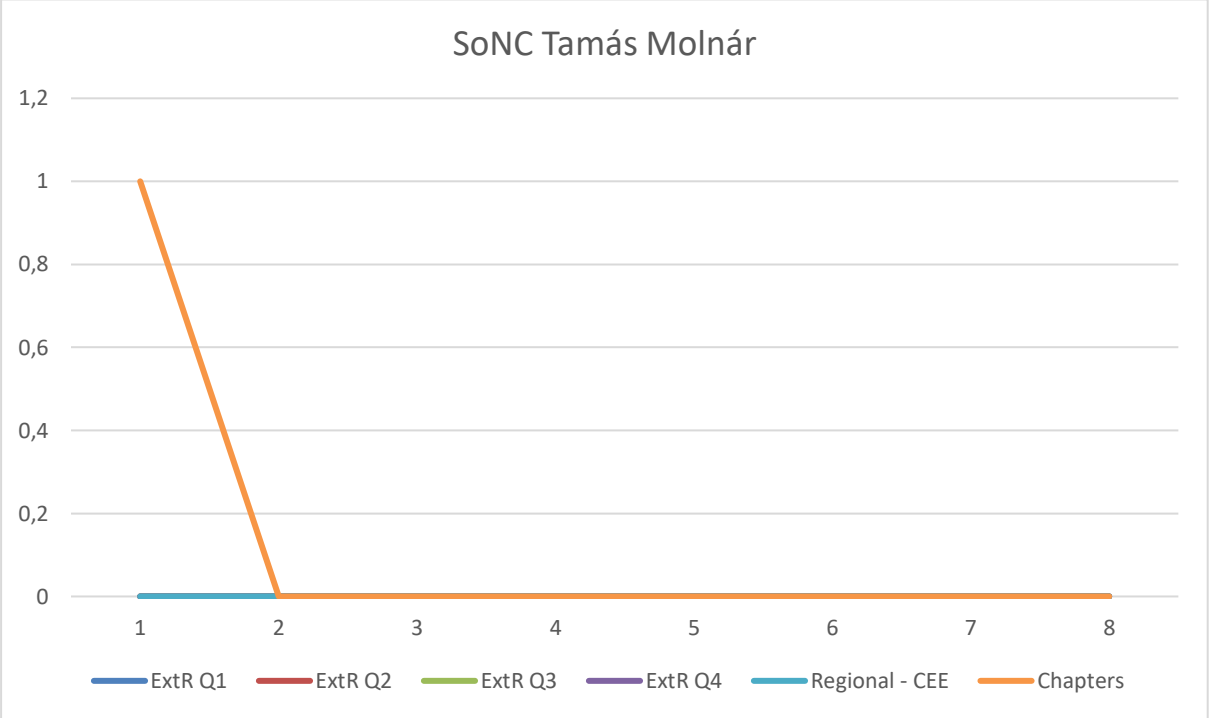
Source: Own compilation

Table 15: 2014-2018 publication output statistics of SoNC Tamás Molnár RC researchers (n=8)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**0**	**0**	**0**	**0**	**0**	**1**
Mode	0	0	0	0	0	0
Average	0	0	0	0	0	0,125
Average per year	0	0	0	0	0	0,025
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0	0	0	0	0	0,3
p100(Maximum)	0	0	0	0	0	1
SD	0	0	0	0	0	0,3307
Skewness	N/A	N/A	N/A	N/A	N/A	2,8284

Source: Own compilation

Figure 14: 2014-2018 publication output histogram of SoNC Tamás Molnár RC researchers (n=8)



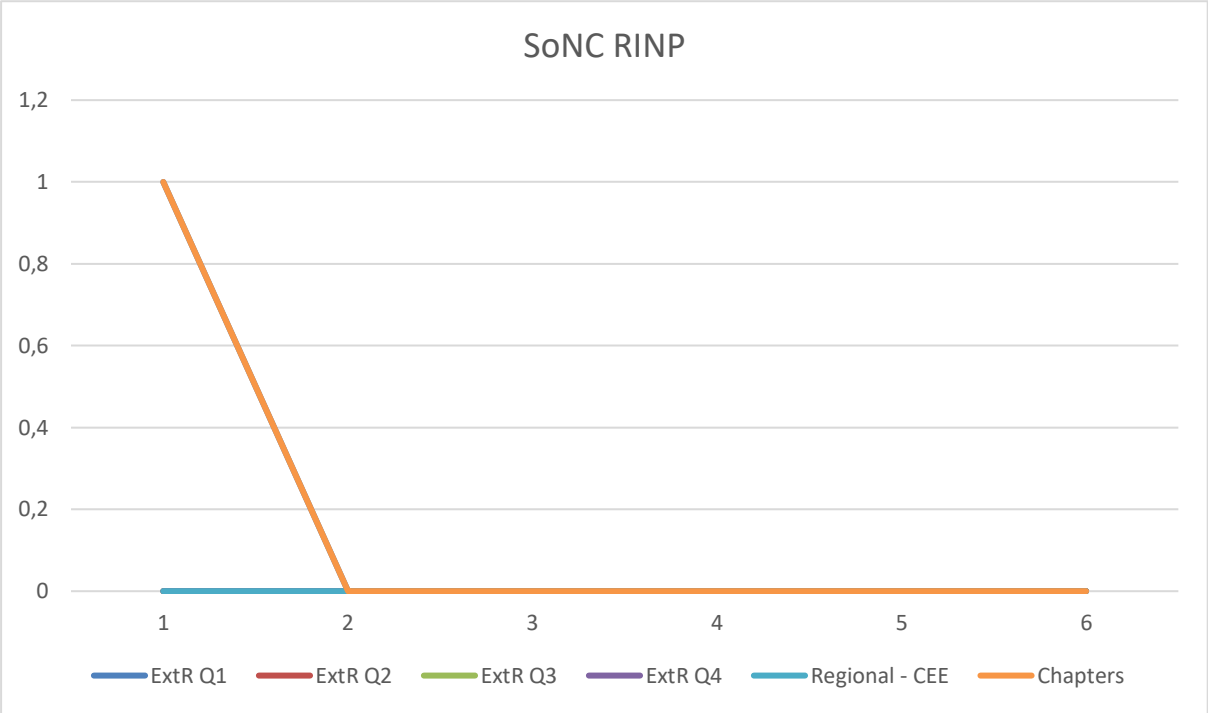
Source: Own compilation

Table 16: 2014-2018 publication output of SoNC RINP researchers (n=6)

	ExtR Q1	ExtR Q2	ExtR Q3	ExtR Q4	Regional – CEE	Chapters
Total	**1**	**0**	**0**	**0**	**0**	**1**
Mode	0	0	0	0	0	0
Average	0,166	0	0	0	0	0,1666
Average per year	0,0333	0	0	0	0	0,0333
p25	0	0	0	0	0	0
p50(Median)	0	0	0	0	0	0
p75	0	0	0	0	0	0
p90	0,5	0	0	0	0	0,5
p100(Maximum)	1	0	0	0	0	1
SD	0,3726	0	0	0	0	0,3274
Skewness	2,4494	N/A	N/A	N/A	N/A	2,4494

Source: Own compilation

Figure 15: 2014-2018 publication output histogram of SoNC RINP researchers (n=6)



Source: Own compilation

Limitations

Since the presented results mirror the research productivity of individual researchers employed in 2019, their applicability in measuring the performance of the researcher's home institution is limited: It is possible that an observed item was published by the researcher when they were not yet affiliated with the studied research institutions (i.e., a 2016 article by a researcher hired only in 2018), or that a researcher was no longer affiliated with the studied research institution at the time of the sampling procedure (i.e. if a researcher employed between 2010 and 2017 would have produced 2 ExtR Q2 articles in 2015).

Another limitation of the study is that we did not consider co-authorship thus a given paper is assigned to all its coauthors. Consequently, our findings show a more optimistic picture than the reality, since if we divide each published paper with the number of co-authors (or weight co-authored articles differently) then the calculated means will be decreased.

Additionally, both SCOPUS and MTMT are subject to minor data fluctuation, meaning that they can show both fewer and more items for a given time period if inspected across large time spans. This may be caused by database maintenance, delayed inclusion of publications, new journal indexation, author- or publisher-initiated changes in data or categorization, and various other factors. Since re-coding was done 16 months after the initial coding, most of these common data uncertainty effects are expected to be already mirrored by the intercoder reliability values. Still, others may occur later, and can affect the results of a future reproduction study.

The protocol proved to be strong in discerning extra-regional publications when applied to SCIMAGO Q1-Q4 articles but was less reliable when the coder had to decide whether non extra-regional articles should go to the Regional – CEE or the National – HUN category. We should also consider that our data coding protocol may have been less clear than necessary in the case of monographs and national publications. For example, the protocol could be improved

later by a clear description on how to check for a publisher's national affiliation, or an indication that national publications may include English language publications and regional publications may include Hungarian-language publications as well. We will improve these parts for future studies.

Appendix A: 2014-2018 Research Performance of HAS and SoNC researchers - Data Table

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