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Geographical representation of editorial boards: a review in the field of library and information sciences

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Abstract
Diversity of editorial boards of academic journals has recently become one of the most frequently discussed topics in scientific communication. Diversity of editorial board is considered to be an important element affecting the journal, the field and the region in terms of the number and diversity of publications. In parallel with this increasing awareness in the academic circles, many studies on diversity in the literature at both the field and journal levels have been carried out. In this study, the editorial boards of academic journals in the field of Library and Information Sciences were analyzed in terms of accommodating geographical representation, and the effect of such diversity, if any, on the number of publications was investigated. The data set consisted of the journals in the mentioned field in the SCImago web page Journal Rankings. The analyzes were carried out based on 6126 persons registered to 212 journals, including chief editors. The findings of the study showed that 75.11% of all members of editorial boards were from North American and European countries. While Asian countries (Central and South Asia, and East and Southeast Asia) were represented by 13.16% in journals in the field of Library and Information Sciences. A linear correlation was found between the regions where the chief editors of the journals were registered and the assignments of the editorial boards. Moreover, a linear correlation was found between the editors of journals (chief editors and other editors assigned to boards) and the scientific outputs (citable documents, citations, and h-index) in terms of regional relationship. The consistency of the results with those of other studies in the literature clearly demonstrates a need for more transparent processes in academic publishing. A policy to ensure a fair and diverse representation in boards of journals features numerous multifaceted positive effects.

Keywords Academic journal · Geographical representation · Diversity of editorial board · Library and Information Sciences—LIS · SCImago

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Introduction

In scientific communication, academic journals are the most widespread media in which researchers share novel research results. Electronic publishing has boosted the momentum of transmission and sharing of information. According to the Delta Think, the open access market had a phenomenal year of growth in 2020 and they estimated it to have been worth around $1.1bn in 2021 (Delta Think, 2021). Nevertheless, SCImago[1] directory contains 25,231 electronic journal registries. In addition to the increase in the number of academic journals, electronic publishing has also led to rapid elimination of limitations in scientific communication processes. Thus, diversity of authors as well as editors and peer reviewers in academic journals has become a current issue. Diversity in scientific communication environments has particularly become a commonly discussed topic to eliminate the existing or emerging biases.

Journals have been exerting efforts to gain influence by including researchers from various countries in their editorial and peer review boards (Aroujo et al.,2021; Küçük et al., 2008). In order for journals to have more readers and more influence, they need to be on an international level, and also have an international profile of authors (Lauf, 2005, p.140). Because, this also affects the position of countries in certain rankings in the science race. Editorial and review boards, which are one of the important components of the publication stage of journals, are responsible for the acceptance of articles to the journal until the final stage of the publication process. Their qualities as the first and last decision-makers in the publication of an article are also of critical importance. Due to their crucial positions in the journal board, they have a universal role in attracting and accepting qualified publications. This takes the problems of editors to another level, leading to increased responsibilities of journals in attracting the best articles and in the impact factor race (Baccini & Barabesi, 2009, p.367). The importance of the topic manifests itself in the literature mainly by focusing on the characteristics of editorial boards, while few have been on the topic of reflecting geographical diversity in scientific outcomes (Aroujo et al., 2021). COPE (Committee on Publication Ethics) conducted a more holistic study, and revealed the initial study results showing that diversity of the editorial boards (gender, ethnicity, different career steps and geographical diversity, etc.) has an impact on reaching wider audience, providing representation to different disciplines, and providing space for various authors and studies (Porter, 2021). The CSE (Council of Science Editors) had the themes of diversity and inclusion in publishing on their agenda in the annual meeting held in 2019 (CSE, 2019).

The aim of this study was to monitor the geographical regional distribution of editorial boards of journals published in the world in the field of Information and Document Management. In addition, the relationship between the scientific outputs and editorial board profile as well as regional distribution of chief editors in editorial boards were investigated. In this regard, editorial and review boards of 255 journals in the field of Library and Information Sciences (LIS) on SCImago (The SCImago Journal & Country Rank) web page were examined. The research was based on the following queries:

1- To what extent are various countries and regions represented on the editorial boards of the SCImago LIS journals?

[1] https://www.SCImagojr.com/index.php.

2- To what extent are various countries and regions represented on the editorial boards of the sub-categories of the SCImago LIS journals?
3- Is the regional affiliation of a journal's editor in chief related to the regional affiliations of the journal's editorial board members?
4- Is the extent of a country representation on the boards of LIS journals related to the scientific outputs of the same country?
5- Is the extent of a country representation on the boards of LIS journals related to the research and development expenditure of the same country?

Literature review

There are studies in the literature evaluating the diversity of editorial boards of academic journals in many aspects. Some of the studies focused on journals published in a particular discipline, while some of the studies were conducted at journal level. Diversity in editorial boards are evaluated comprehensively based on data such as gender, institution, ethnicity, native language, field of expertise, educational status, and number of publications in such studies.

In this study, the geographical diversity of academic journals was analyzed through the journals in the field of LIS. There are studies in the literature evaluating editorial boards of journals in the field of LIS (Bonnevie, 2003; Campos-Arceiz et al., 2018; García-Carpintero et al., 2010; Jarvelin & Vakkari, 1990; Lariviere et al., 2012; Tsay, 2011). The diversity of editorial boards can affect journals in different ways. For example, a substantial correlation was found between the geographic diversity in the editorial board and presence of publications produced by international authors in a study on individual characteristics of the members of editorial boards of five journals in the field (Uzun, 2004). Another study analyzing 468 members of editorial boards of 16 leading journals in the field also showed North American and European dominance (Willett, 2013). It is also understood that the editorial boards have an effect on the publication rates and the distribution of the publications in the country.

In recent years, analyze have been for the differences in subject subfields. In this study, regional representations of journals that published in the field of information science and librarianship are also examined according to sub-fields. Evaluating the role of editors in journal's subject orientation in the Information Science and Library Science (IS-LS), Xie at all (2020) used the information of 232 editors of 77 Management Information Systems, Information Science and Library Science journals. Although the editorial team in subfield journals differed in terms of regional diversity, there was no significant difference in internationalisation. It has been found that US editors have an obvious advantage three subfields' journals editorial boards. Therefore, subject dominance also comes from these regions. The impact factors of 88 journals published in the field of Management Information Systems and Library and Information Science were examined in terms of sub-field differences. In this study, it was also tried to understand the differences in terms of article and citation features, in terms of cited topics, in terms of author relations, and in terms of IF-based performance ranking. As a result, it has been understood that MIS and LIS sub-fields, as two different research communities, maintain these differences (Huang et al, 2019). Evaluating the impact of subject areas on the research with different elements can help to develop original perspectives in the evaluation of scientific outputs, therefore, an evaluation was made from this perspective in the study.

While membership of the editorial board is an important qualification, Walters, (2015) drew attention to a different problem in his study of 30 well-known field journals. The publication rates of the editorial group in the journal of which they serve as a part of board memeber, which also shows the effect of the editorial group on the publication process, were examined. In the study, this rate was found to be 36%, which is higher than expected. Walters, (2016) evaluated the authorship contribution of editorial board in another study on these journals. As a result, 52% of 1.079 editorial board members authored or co-authored at least one article in these 30 journals. Although there are studies conducted on the field within the scope of the subject, there are no studies investigating the relationship between geographical diversity of editorial boards and numbers of publications of all journals. In this regard, the study is considered to be important to see the actual effect of the increased awareness on the editorial boards of journals as well as to analyze all journals in the field.

Being on the editorial boards of prestigious journals in the academic community is an important element of academic recognition. Therefore, persons on editorial boards of journals directly or consequentially encourage their colleagues to publish their works in their journals (Willett, 2013). The research on journals in various disciplines showed that the diversity of editorial boards also had a diversifying effect on scientif outputs, and a positive correlation with journal rankings. Prominence of a certain group or region might jeopardize attraction of the journal for academics from different countries (Mindt et al., 2018; Araújo & Shideler, 2019; Cabanac, 2012; Harzing & Metz, 2013). Editorial diversity can also reveal biases and conflicts of interest for unpublished works caused by competition, and prevent corrupt relationships (Søreide et al., 2010; Youk & Park, 2019). Recent studies have also revealed that the co-author relationship between the editor-in-chief and the members of the editorial board of some journals creates a high level of connection. Ensuring diversity is also important for terminating these connections (Newhouse & Brandeau, 2021).

Although there has been an increased awareness of increasing geographical diversity in the editorial board of journals in scientific communication recently, studies have generally demonstrated low geographical diversity, while there is a clear US dominance. There is a clear dominance of European and North American countries in the field of medical training (Yip & Rashid, 2021), the USA in the fields of psychology and neurology (Palser et al., 2021), and again of the USA in accounting journals. (Dhanani & Jones, 2017). The members of boards of information systems (Cabanac, 2012), Anesthesia and Critical Care (Boldt & Maleck, 2000) and Chemistry (Braun & Diospatonyi, 2006) were found to be mostly from organizations based in the USA, while the geographical diversity in journals of administrative disciplines was found low despite the increase in recent years (Harzing & Metz, 2012). Similarly, journals of communication disciplines also lack a homogenous distribution in terms of national diversity (Trepte & Loths, 2020), whereas a majority of boards of the journals in categories Q1 and Q2 was found to be under the monopoly of the USA, UK, Canada, Australia and Germany (79%) (Goyanes, 2020).

It is also observed that journals conduct status analysis and strategic analysis with regard to to geographical diversity. The survey conducted in the journal Biological Invasion was aimed at understanding the diversity of the editorial board in terms of corporate connections and demographic identities, and contributing to its diversification. Most of the 107 participants were identified as US citizens, followed by Canadian and British citizens (Kuebbing et al., 2022). The publication board of Journal of International Business Studies (JIBS) was evaluated with five-year intervals, and it was observed that gender and geographical diversity increased over the years (Harzing & Metz, 2011). Similarly, 475 editorial board members of eight journals in Basket of Eight Journals were analyzed in terms of

gender, regional and ethnic diversity, resulting that the journal boards did not have a balanced distribution regionally, and had more Indian-origin members (18%) than expected. Although some journals seemed better than the rest, there was not a balanced distribution in terms of ethnicity in general (Beath et al., 2021).

There are also studies in the literature aimed at investigating the effect of geographical diversity in editorial boards on the geographical distribution of articles. Goyanes and Demeter (2020) concluded in their study analyzing all Communications journal published on SSCI WoS and SSCI lists in 2017 that the geographical diversity in editorial boards increased the diversity of countries from which the first authors and study data originated, thus study articles were likely to be diverse in that aspect. The results of the study investigating the Journal of Multicultural Discourses in terms of diversity of the editorial board and the publication outputs showed that the journal in question was relatively more diverse and inclusive compared to the other journals in the field, and there was a strong contribution from Africa and Asia despite the visible American and Western European dominance. The numbers and national diversity of works produced by coauthors were also evaluated in the study. In conclusion, there was a high tendency for cooperation from different parts of the world (Demeter, 2020). Albuquerque et al., (2020) found that editorial boards affect the diversity of scientific publications in their study using citation data and editorial boards' network data.

Method and data set

In this study, to visualise the geographic representation of editorial boards of journals in the LIS field, a search on the Subject Categories section of the Journal Rankings tab of the SCImago portal on 01.10.2021 was done and 255 sources for 2020 were listed. Of these sources; 232 were journals, 16 were proceedings, and seven were book series.

Country,[2] publisher, indexing dates of these sources were downloaded from the portal in question. The methodology used in the study carried out by Araújo et al., (2021) investigating the editorial representation of journals in Aquatic Science and Communications was employed in this study. Accordingly, countries were divided into nine regions (Sub-Saharan Africa, Northern Africa and Western Asia, Central and Southern Asia, Eastern and South-Eastern Asia, Latin America and The Caribbean, Australia/New Zealand, Oceania, Europe, and North America) in line with the United Nations 2019 World Population Prospect as the geographical representation was to be analyzed.

Proceedings and book series among 255 sources were excluded to collect data on geographical representation in editorial boards of journals. A data set consisting of the names, institutions, tasks and country information of the editor-in-chief (s) and each person on the editorial boards was created by visiting the websites of the remaining 232 journals. The editorial boards of journals were named differently in each journal which had various types of editors and boards. It was included all boards on the page of the journals (such as "editorial board", "editorial advisory board", "early career board", etc.) leaving only editors responsible for copyediting or management affairs. The journals with no information regarding their editorial boards available on their website, or whose website could

[2] SCImago has indexed the country information of the sources according to the publisher's location information (Scopus, n.d., p. 19). Nevertheless, this information is not always clear, especially in cases where most or all of the publisher's functions are carried out thousands of miles from the corporate offices.

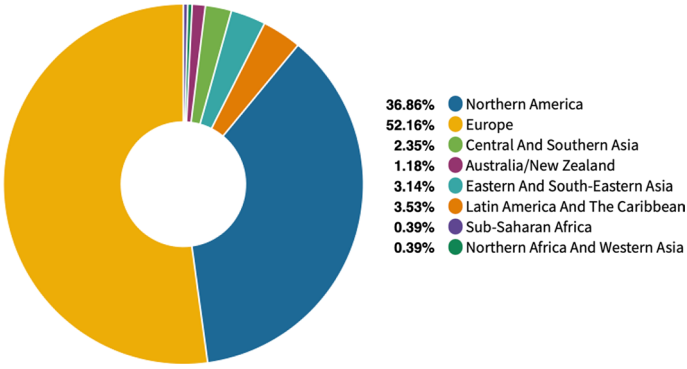

Fig. 1 Distribution of journals in the field of LIS by region on SCImago

not be accessed were excluded from the data set. The journals with no website information on SCImago portal were accessed through Google search engine, and a total of 212 journals were included in the evaluation. The information regarding the editors in journal boards that did not have organization and country details was obtained through their personal pages or organization websites. The analyzes were carried out based on 6126 persons registered to 212 journals, including chief editors. These persons were grouped according to the UN regional categorization in order to see the geographical representation being studied.

The factors affecting the distribution of people on the editorial board of journals by region are significant. Therefore, a simple linear regression analysis R (Version 1.2.5033) was carried out to see the effect of the number of editor in chief by regions on the number of editorial boards in the same region and to answer the second question of the study, as well. In additon to this analysis, The Sankey diagram was used to see the editorial board flows according to the regions of the editors-in-chief and the regions where the journal was published (registered in SCImago). The regions of the editor-in-chief for each journal were taken as the starting point, and the flows of editorial board appointments were visualized using this diagram. Since there was only one editor in 16 journals in the data used in the visualization, these journals were excluded from the data set. The second Sankey diagram was used to show the flowchart of appointments of editorial boards from the regions according to the country information registered on the SCImago portal to other regions.

The number of scientific outputs (citeable documents, citations, citations per document and h-index) of countries in 2020 on SCImago portal was retrieved to reveal a country representation on the boards of LIS journals related to the scientific outputs of the same country (the third research question). In order to analyse the effect of the editorial board members by country on the numbers scientific outputs of the country was tested by linear regression analysis in the R (Version 1.2.5033).

Results

According to the results from the search, more than half (52%) of the journals listed on SCImago in the field of LIS are from Europe. While 38 countries are included in the list, 90% of the journals are based by European and North American countries (see Fig. 1). This

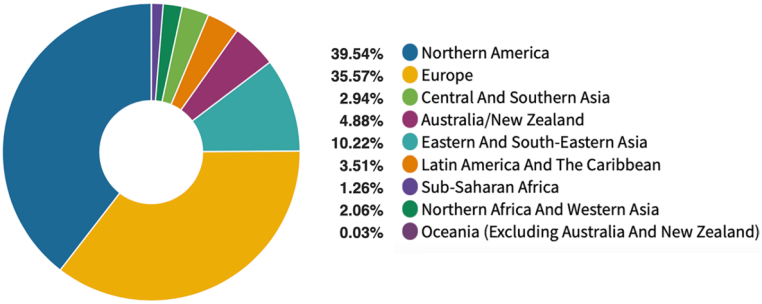

Fig. 2 Percentages of journal editorial boards by region

information refer to where the headquarters of the journals are located. Eighty-eight journals are based in the United States, followed by the United Kingdom with 70 journals. In the field of LIS, The Netherlands is more represented on the list with 18 journals than any other country except the USA and the UK. It is noteworthy that there is no China-based journal in this field. In regional context, there is one magazine from each of Sub-Saharan Africa and Northern Africa and Western Asia Regions on the list. The Ocenia region, on the other hand, is not represented.

With regard to publishers, the results of our study slightly differ from those of the previous studies in the literature. Araújo et al., (2021) stated that the journals in the analyzed fields were usually publishers that could be defined as mega publishers. The publications published by groups such as Elsevier, Springer, Wiley, Taylor & Francis, Emerald and Sage had a share of 26% among publications in the field of LIS. The proportion of Publications published by Emerald and based in the UK was 34% in this share. The proportion of publications originating from Universities and Institutes on the list was 22%. In this regard, the list could be considered to be heterogeneous in terms publishing in the field in question.

The editorial boards of journals were named differently in each journal which had various types of editors and boards (director, academic editor, etc.). There was hardly a standard designation for editors and boards in academic journals.

The editorial board of journals in the field of LIS consisted of maximum 315 members, and minimum 1 member. While the boards consisted of 29 persons on average, the median of the editorial boards of journals was 21 (Mean = 29 [SD 32], median = 21, range = 314). The editorial boards of 16 journals (7.55%) on the list consisted of one person. These data were found to be quite lower than the descriptive statistics (editorial boards of 40 or less) in the fields analyzed by Araújo, Shideler and Reamer'in (2021). In other words, the number of editorial boards was relatively less.

Of all members of editorial boards, 75.11% were from North American and European countries. This data is similar to the results of the study (Garcia-Carpintero et al., 2010) analysing the regional representation of the editorial boards of the best journals published in 20 disciplines and produced in 15 countries. While Asian countries (Central and South Asia, and East and Southeast Asia) were represented by 13.16% in journals in the field of LIS. The countries of Africa and Oceania, on the other hand, had the lowest representation rate (3.35%) (see Fig. 2). The low representation of the editorial board from Oceania and African countries was in line with no or little visibility with a few publications of journals from these regions on SCImago. Moreover, the third quarters of North America and Europe were large (75%) in the box plot of editorial boards (see Fig. 3). The low number of editorial boards in other regions is also represented on the box plot.

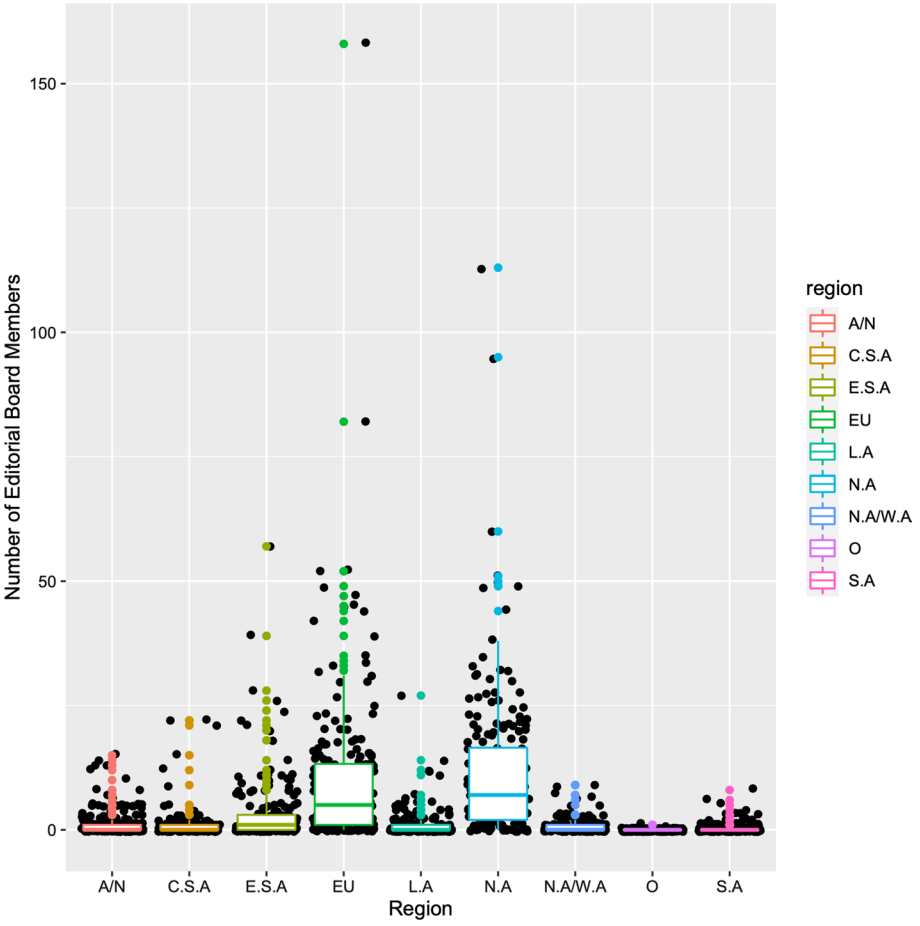

Fig. 3 Box plot of editorial board members by region

The geographical representation on editorial boards is similar when we look at the subcategories of LIS journals. Journals of the field are categorized as Management Information Systems—MIS, Information Science—IS, Library Science—LS and Scientometrics—SM, according to the lists in the study of Xie et al. (2020) and Huang et al., (2019). Since the journal list of the field was withdrawn from the Journal Citation Reports—JCR in both studies, it does not exactly match the journals that based the data set of this study. For this reason, journals that are not in the list of these studies are labeled as "other". According to this categorization, nine of the journals in the field of LIS in SCImago were grouped under MIS, 20 as IS, 22 under LS, and three under SM and the rest were categorized as *other*. The geographical representations of the editorial boards in the journals in the subcategories of LIS are shown in Fig. 4.

Based on the estimation that as the number of people in the editorial board increases, the probability of geographical representation will be more diverse, it was deemed appropriate to look at the editorial boards in countries with close number of journals. Accordingly, the two countries with the most journals on the SCImago list are the US (88) and

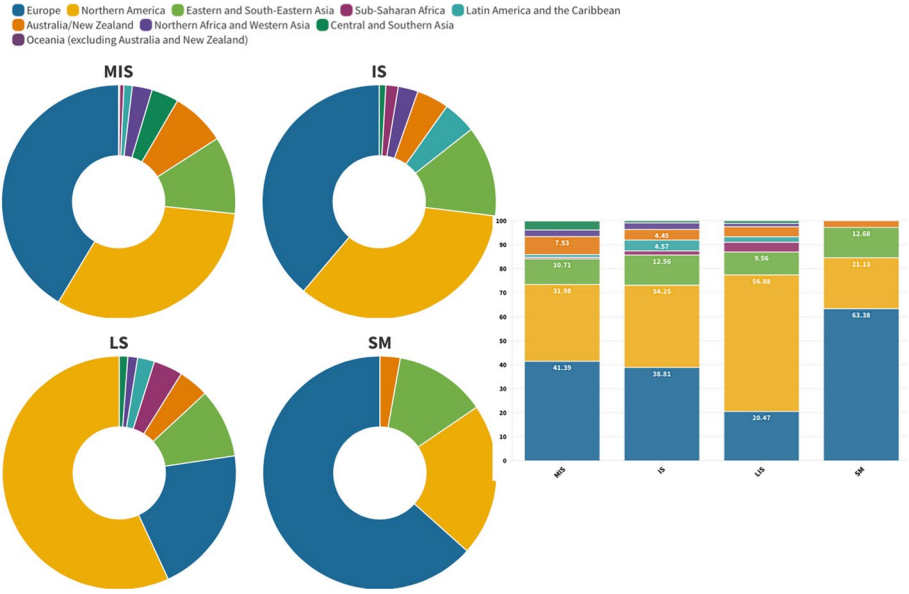

Fig. 4 The geographical representation of the journal editorial boards by the sub-categories of the LIS

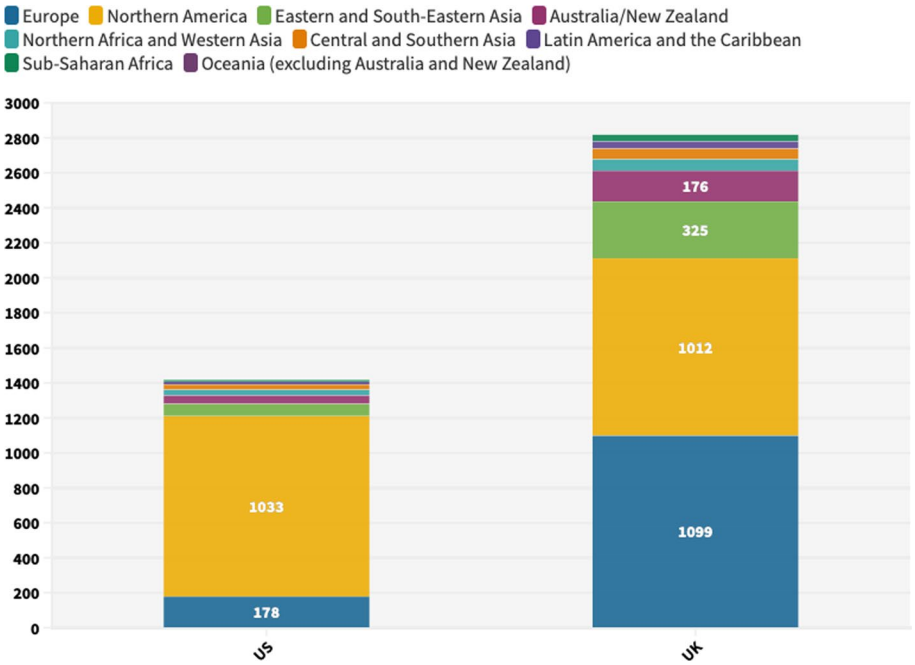

Fig. 5 The geographical representation of the editorial boards in the journals originated from US and UK

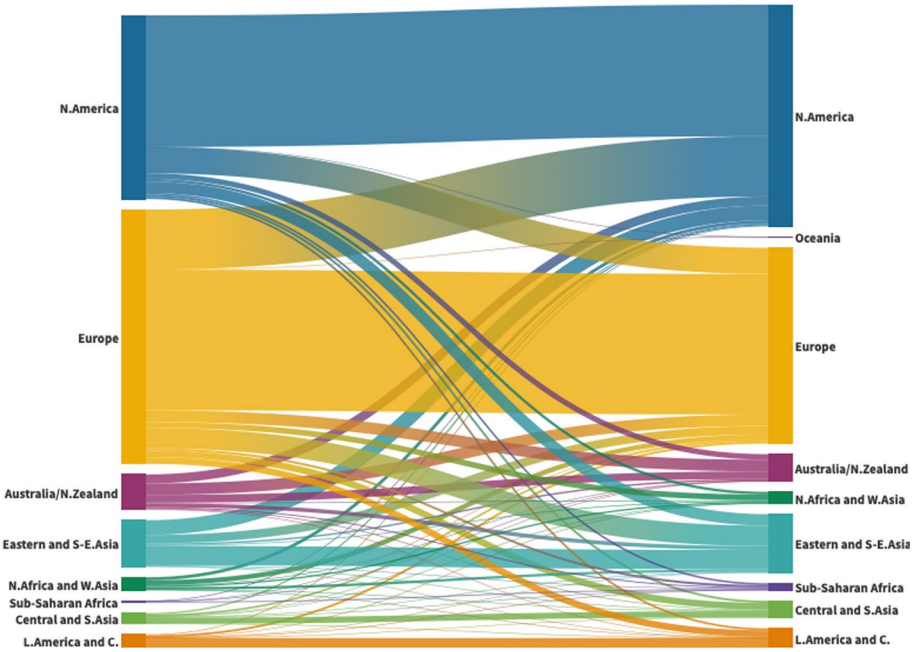

Fig. 6 The flowchart for appointments of editorial board positons by the editors-in-chief of journals by regions

the UK (70). When different types of sources and inaccessible sources were excluded, the number of journals in both countries became 65. In the review of the editorial boards of these journals, there are a total of 1419 board members in the US journals, while there are 2820 board members in the UK. The geographical distribution of the editorial boards of these two countries with the highest number of journals is shown in Fig. 5. According to these data, geographic representation on editorial boards in US journals appears to be more stringent. In the journals originating from both countries, the outlook is not much different from the general view.

In order to decipher the power of editors and the structure of editorial boards, it is essential to analyze the relations between editorial boards. A linear correlation was found in the regional relationship between the editors-in-chief of journals and the editors assigned to the journal boards of their regions. Meaning, editorial boards changed when the editor-in-chief changed (see Fig. 4). The distance between the editor-in-chief and members of the editorial board was close to the regression line in most regions; the linear regression analysis yielded significant results ($R^2 = 0.9785$). Nevertheless, the strong correlation between these two variables is unexceptional as size of region swamps the effects of all the other potential determinants of these two variables. The regions with the greatest number of active LIS scholars presumably also account for the greatest number of editors, board members, authors, and readers. The overlap of the countries of the editor-in-chief and those of members of the editorial board was also observed in the study of journals in the field of Management (Harzing & Metz, 2013).

Figure 6 shows the flowchart for appointment of editors by the editors-in-chief. At this flowchart, for instance, the editors-in-chief in Europe region are given nodes of appointment to editorial boards from Europe. This chart was created at the journal level, with each

Fig. 7 The flowchart for appointments of regional editorial boards of journals by regions of the journals registered in the SCImago

row showing the editorial board appointments of a single journal. Here, if an editor-in-chief from the same region selects a member of the editorial board from the same region, the flow occurs within the region, but if the editor-in-chief appoints to the editorial board from a different region, the arrow flows to the other region (from left to right). The width of the arrow at each node, respectively, indicates the maximum flow in quantity. According to the results of this graph, North America and Europe dominate the editorial flow all over the world as they host the largest number of editorial appointments. The nodes of North America, Europe and Latin America and the Caribbean flow mainly to themselves, the North American and European nodes receive appointments from editorial boards from all eight regions, but also make appointments from all other regions. East and Southeast Asia is the third region with flows to other regions after North America and Europe, and it also receives appointments from these two regions at the most. As a matter of fact, the regions with higher number of journals are more likely to dominate the flow.

The flowchart of editorial board appointments of journals registered in SCImago database by regions is shown in Fig. 7. It is based on the country of each journal registered in the SCImago database in this chart. Even though the distribution here also tends to be dominated by the North American and European regions, it is relatively more diversed compared to the other image (Fig. 7.). Due to the fact that the journals are of European origin, Europe is more advantageous than others in terms of editorial board appointments. Appointments are made to all regions from Europe, though there is a clear tendency towards assignments from own regions of the editorial boards. Almost half of the editorial boards of European-based journals are from Europe. Then, higher number of appointments are made to North America, and there are also the ones to Eastern and Southeastern Asia, Australia and Latin America.

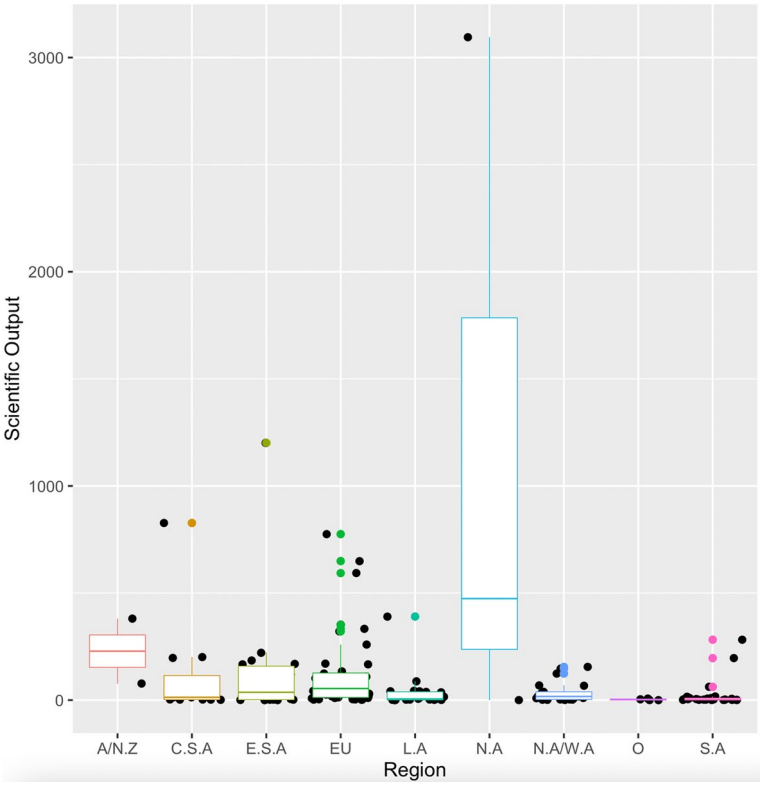

Fig. 8 Box plot of scientific outputs (citable documents) by regions

The scientific output data (citeable documents) of the countries for the year 2020 was downloaded from the web page of SCImago. North American and European countries counted for approximately 58% of the scientific outputs in the field of LIS. East and Southeast Asian countries constituted a portion of 16.33% in citeable scientific outputs. Together with the countries of Central and South Asia, Asian countries were represented by a total of 25.03%. This distribution was similar to the overall distribution of editorial boards. In the box plot showing the distribution of scientific outputs by region, the third quarter (75%) of almost all regions (North America, Europe and East and Southeast Asia, Central and East Asia) is large (See Chart). Figure 8). While Australia offered a more balanced distribution, the numbers of scientific outputs of Oceania and Sub-Saharan Africa were low.

A linear correlation was found between the editorial board members of journals (editor in chief and other editors appointed to boards) and the scientific outputs (except h-index) in terms of country relationship (see Fig. 9). This confirms the opinion of Willet, (2013) that the people on the editorial board are in a position to openly or indirectly encourage their colleagues to publish in their journals. This also demonstrates that the significant correlation between the editorial board members and the number of publications found by Zsindely et al. (1982) characterizes the scientific research activities of countries. The editor-in-chief and editorial board members typically influence the country representation of publications in the journal. Dyachenko (2014), in his research on

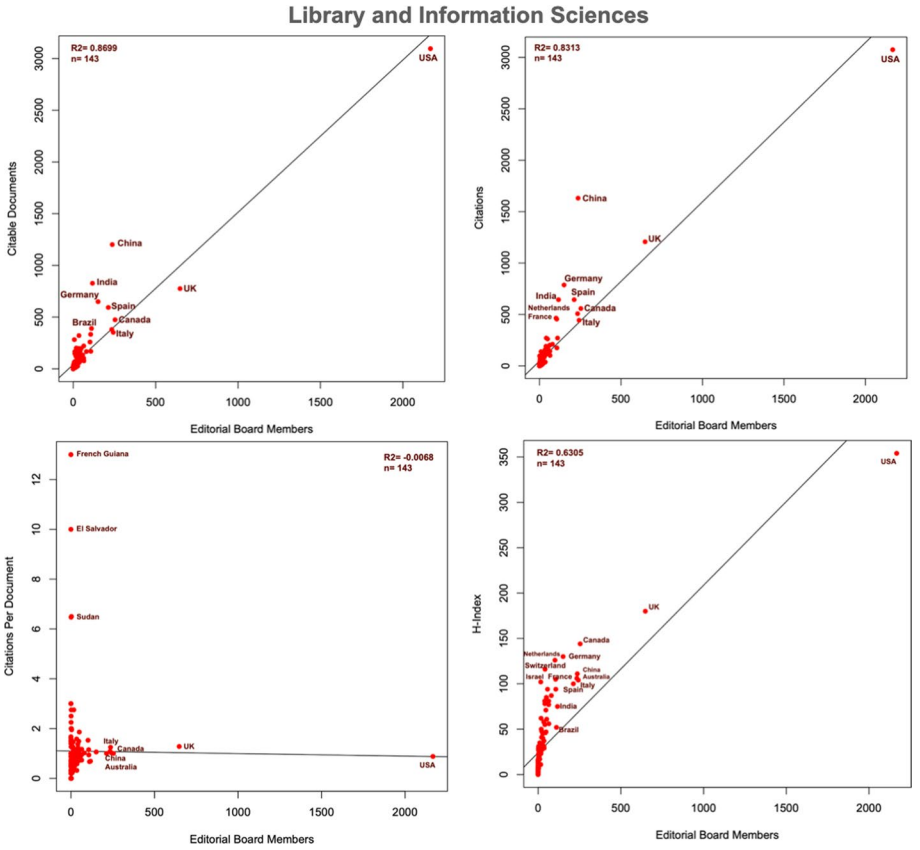

Fig. 9 The linear regression analysis of the countries of editorial board members in the field of LIS with scientific outputs (citable documents, citations, citations per document and h-index) of the same countiries

academic journals in six fields of science, found that the country with the most publications in all fields is the country where the editor-in-chief works (over 80% on average). The same situation was observed in the rate of the highest number of publications in the editorial board (90% on average). Goyane & Demeter (2020) in his analysis of 84 journals, reveals that geographical diversity in the editorial board, first author's country of origin, and country of data collection, leads to greater diversity. In other words, the country of the editorial board also determines the country of publication. Demeter (2020) concluded that in the field of cultural discourse studies, editorial diversity affects the diversity of publication output, and the probability of publication from the editor's region increases. The effect of each scientific outputs on the editorial boards of the journals can be viewed in Fig. 7. The prediction that the number of citable documents of a country was likely to be higher for country with higher representation in editorial boards of journals was found to be significant in the linear regression model established in this study ($R^2 = 0.8699$). Among the scientific outputs, the regression analysis of citations per document naturally is not meaningful, as the countries which had low number of citable documents have high point of citations per document. In the graphs, North Africa and West Asia, as well as the Central and South Asian region and Sub-Saharan

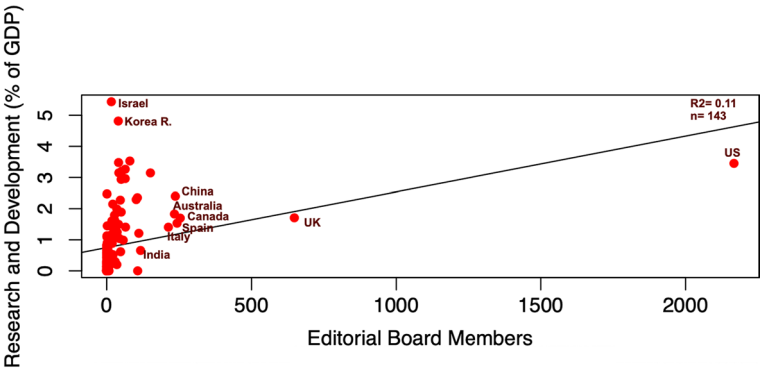

Fig. 10 The linear regression analysis of the countries of editorial board members in the field of LIS with R&D expenditure (% of GDP)

African countries are positioned on or close to the regression line. The other countries are far from the regression line.

It is seen that the significant variable which has an impact on the scientific output of the countries is the Research and Development—R&D activities of them. Research results have shown that there is a relationship between investments in R&D expenditure and the scientific output of the countries (Sart, 2020; Meo & Usmani, 2014). For this reason, the data of the ratio of countries allocated to R&D from the World Bank Open Data database were drawn and the usability of this data for the estimation of the editorial board representations of the journals was tested. In the regression analysis, the amount of direct R&D expenditure of the countries has a weak effect on the number of journal editorial boards (See Fig. 10).

The number of editorial boards of some countries exceeding the scientific output of those countries is considered as editorial surplus (Araújo & Shideler, 2019). Considering the ratios of the 20 countries with the highest scientific output in the field of LIS, and the ratios of the number of editorial boards in the analyzed field in 2020, the editorial board dominance in the USA and the UK is greater (see. Table 1). It was found that China, having the second highest number of scientific outputs following the USA, was represented less frequently on editorial plane and India has same situation, as well.

Conclusion

In the study, 212 journals in the field of LIS indexed in the SCImago database, and the editorial boards of 6126 people in these journals were evaluated in terms of their geographical representation. Geographical representation of editorial boards is an important element in terms of international qualification of scientific journals and diversification of scientific outputs. The results of the study showed that the editorial boards of journals were dominated by North America and Europe, especially the USA and the UK (Fig. 2). In addition, the higher number of journals originating from the USA and the UK found in the study is consistent with the results of previous studies. On the other hand, there are also many journals from the Netherlands in this field. The results regarding the publishers of journals were also consistent with other studies. Although mega

Table 1 The ratios of scientific outputs (citable documents) and editorial representation of countries and regions

Country	Scientific Output % (Citable Documents)	EBM %	Region	Scientific Output % (Citable Documents)	EBM Region %
USA	20.78	35.37	Northern America	23.97	39.54
China	8.06	3.87	Eastern and South-Eastern Asia	16.33	10.22
United Kingdom	5.20	10.45	Europe	33.58	35.57
India	5.55	1.91	Central and Southern Asia	8.70	2.94
Germany	4.36	2.46	Europe	33.58	35.57
Spain	3.98	3.48	Europe	33.58	35.57
Canada	3.18	4.15	Northern America	23.97	39.54
Australia	2.55	3.82	Australia/New Zealand	3.07	4.88
Italy	2.36	3.97	Europe	33.58	35.57
Brazil	2.62	1.81	Latin America and The Caribbean	4.88	3.51
France	2.24	1.73	Europe	33.58	35.57
Russian Federation	2.16	0.57	Europe	33.58	35.57
The Netherlands	1.74	1.67	Europe	33.58	35.57
Nigeria	1.89	0.11	Sub-Saharan Africa	4.29	1.26
Japan	1.48	1.04	Eastern and South-Eastern Asia	16.33	10.22
Switzerland	1.14	0.69	Europe	33.58	35.57
South Africa	1.32	0.78	Sub-Saharan Africa	4.29	1.26
Sweden	1.12	1.31	Europe	33.58	35.57
Iran	1.35	0.29	Central and Southern Asia	8.70	8.70
South Korea	1.24	0.39	Eastern and South-Eastern Asia	16.33	10.22

publishers have seem to cover these journals (Braun & Dio spatonyi, 2005a; Braun & Dio spatonyi, 2005b), it has seen that many of them are published by university publishing. It is a fact that the sector is managed by commercial publishers from the North and the West, as well as the academic community. Journals from other regions are endeavouring to be recognized internationally, and to become more visible by being indexed in major databases.

The results regarding the representation of regions in editorial boards of journals and addresses of editors-in-chief in the field of LIS were similar to those of the previous studies in the literature (Bacccini & Barabesi, 2011; Cronin, 2009; Willet, 2013). The results carried out in other fields also had similar results (Cummings & Hoebink, 2016; Okagbue et al., 2018). Although geographical representation was not observed in the editorial boards of journals in the results of previous studies (Araújo & Shideler, 2019; Ozbilgin, 2004; Trepte & Loths, 2020; Oh et al., 2019), it is believed that the situation will change positively with the awareness which will be expanded with these studies.

There is a geographical dominance in the editorial boards of journals in the field of LIS, and there is also an heterogeneous representation (Fig. 3). The influence of the country which the journals are published in and the editors-in-chief are from in determining the editorial boards indicates the need for more transparent processes in journals. The editorial boards of journals should be established in accordance with the

regional diversity policy in order to ensure an equitable representation. The policies and criteria to be set by publishers and journals to foster diversity will be a challenge in taking concrete steps forward.

Elimination of the existing regional supremacy in editorial boards of journals is also of prime importance for researchers. The main purpose of researchers is to communicate their studies to a wide audience. However, it is noted that the journals in dominant regions receive few publications from other regions (e.g. South, East). In fact, only 1.1% of the articles published on a global basis were from Africa (Michael, 2017). There are more processes involved in the scholarly publication such as the submission of papers, the selection of reviewers, the submission of comments and recommendations, and the editorial decision. Remedial studies discussing which factors have an impact on each process in the publication of fewer studies from these regions, whether there is any prejudice or how the prejudices should be eliminated should be carried out in the future. The effect of the frequency of representation of regions in editorial boards on scientific outputs was observed using the regression model. Undoubtedly, there are many factors that affect the number of scientific outputs. Although the higher number of scientific outputs of North American and European countries with high representation on editorial boards is not surprising, the high number of scientific outputs of China in the field of LIS is noteworthy (see Table 1).

The West-dominated geographical distribution in editorial boards might be one of the factors that trigger the bias towards the authors and readeers from other regions. Recognition of English as the dominant scientific language despite the fact that science is a universal language reinforces this prejudice. Scientific publications in languages other than English are not recognized in the literature, which polarizes scientific accumulation. In fact, the societies other than the West are expected to adapt to the scientific norms of the West, and the broad perspective and inclusiveness given by multiculturalism are excluded. The adoption of a multilingual scientific literature can have an inducing effect on ensuring diversity in all aspects. At this point, a multilingualism policy to be pursued by journals through accepting publications from different languages other than English in publishing can be considered as an element that will break the dominance of North America and Europe. However, this situation bring about a significant challange for the target group of the journals. To facilitate this situation, different solutions (e. g. extended summary) can be developed.

The main goal of journals is to attract more readers with highly qualified publications (Schlögl et al., 2005). Besancenot et al., (2012) stated that diversity in the editorial board was a prerequisite for publication quality and diversity. Therefore, decision makers (these may be editors-in-chief or publisher managers) in editorial board assignments should make appointments by considering representation in all aspects (such as regional, gender, location), among many other factors, without getting stuck in personal networks. Co-presence of diverse perspectives from various regions in editorial boards is fundamental for competitiveness of journals and countries.

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