

## **Publishers and their publication practices: the case of bulgarian indexed journals**

**Yulia Nedelcheva**, South-West University, Blagoevgrad, Bulgaria

**Miroslav Nedelchev**,\* Medical University, Sofia, Bulgaria

### **Abstract**

The objective of this paper is to reveal details of publishers and their publication practices. The research scope includes the all 81 Bulgarian journals which have an impact factor / ranking in the database of Scopus and Web of Science. Data for the academic staff of National Centre for Information and Documentation were used.

The results of research revealed that the publication practices of Bulgarian indexed journals are comparable to the international good practices. The national publication practices are consequence of the external environment – due to new legislation for academic career of researchers and the implementation of international publication norms by local journals. The present research is the first for Bulgaria and because of its pioneering nature, there is no basis for data comparison and tracking of dynamics.

**Keywords:** Scopus, Web of Science, publication ethics, publication cycle

### *Highlights:*

✓ *The data by UNESCO do not confirmed in Bulgarian policy for significant participation in the science and presence in world achievements.*

✓ *The publishers of Bulgarian indexed journals are focused predominantly on competitive scientific fields.*

✓ *The modern publication practices of Bulgarian indexed journals have reached the level of international good practices because of the legislation for academic career of researchers and the entry of international publishers.*

### **Introduction**

The concept of publication practices is a modern phenomenon – with increase of interest to publication practices, the interest in their research decreases due to the complexity of data collection for publishers and differences in the expectations of stakeholders. With the development of IT industry and thanks to the process of globalization, publishers began to unify their publication policy with global good practices.

In Bulgaria, the publication policies are based on two main factors: the new legislation for academic career of researchers and the entry of international publishers. In parallel with the shift in society, the science itself is being updated. The dynamics in publication of scientific results exceeds the dynamics of the society. The increase of the requirements and expectations to the scientific achievements are reflected in the new reality – intensified competition for project funds, legal requirements for academic career of researchers, control in the financing and accountability for scientific data. A new threshold is added to the challenges for each researcher – publication of scientific results in indexed journals.

The present paper contents five sections. In the first section is the related literature. The science landscape of Bulgaria are presented in the second section. The third section includes database used in conducting our research and sources of information. In the fourth section are the results of our research. The Discussion is an attempt both for interpretation of our results and for comparison to other researches. Conclusion summarises the results of our research and make recommendations to the publishers of indexed journals and to the researchers for future research.

## Literature review

The neoliberal thinking led to a demand for a new product – scientific results. The demand exceeds the quality of academic works (Barrios et al., 2017) and in the science emerges a new field – publication practices. The practices are addressing ethical responsibility to all players in the publication cycle (Wager & Kleinert, 2011).

The digital age in human evolution has changed the stereotypes of a “book” and introduced a new concept – a “publication” (Pichler, 2019). We will understand “publication” as a creative or critical work of a researcher whose results are published in a journal in compliance with good publishing practices.

The meanings of many traditional concepts in science have changed, as well as new concepts emerged. Established practice views a journal as part of science with four main functions (Zuckerman & Merton, 1971): registration, dissemination, certification and archive records. The new function of a journal is a participation in the academic career of a researcher.

Over the last 200 years, the number of scientific journals has increased by 3% per year (Johnson, Watkinson, & Mabe, 2018). The new journals are designed for multidisciplinary research, which further complicates the reveal of their publishing practices. The indexing of new journals leads to an increase in publications and for some countries, the number of papers published in scientific journals exceeds population growth (OECD and SCImago Research Group, 2016).

In revealing details of publishers and their practices, we will keep in mind that a journal is: a periodical, in which the articles are written by researchers, received positive feedback from reviewers, go through the requirements of publication ethics of the publisher and approved by the editor for publication. Thus presented, each journal is not only a part of the process of scientific communication, but also a part of the research itself (Johnson, Watkinson, & Mabe, 2018). Modern scientific journals are no longer a passive data transmitter and an intermediary among researchers and readers. The main role of scientific journals for disseminating information has been modernized to a mechanism for registering the science priorities of authors.

### BULGARIAN SCIENCE LANDSCAPE

Global R&D spending rose from \$ 522 billion (1996) to \$ 1.3 trillion (2009). Expenditure on science amounts to 1.8% of GDP (2015) and remains at 1.7% (2010). The growth rate of R&D spending exceeds the growth rate of GDP (Johnson, Watkinson, & Mabe, 2018). In industrialized countries most of the spending on R&D comes from the business society, while the state ranks after NGOs.

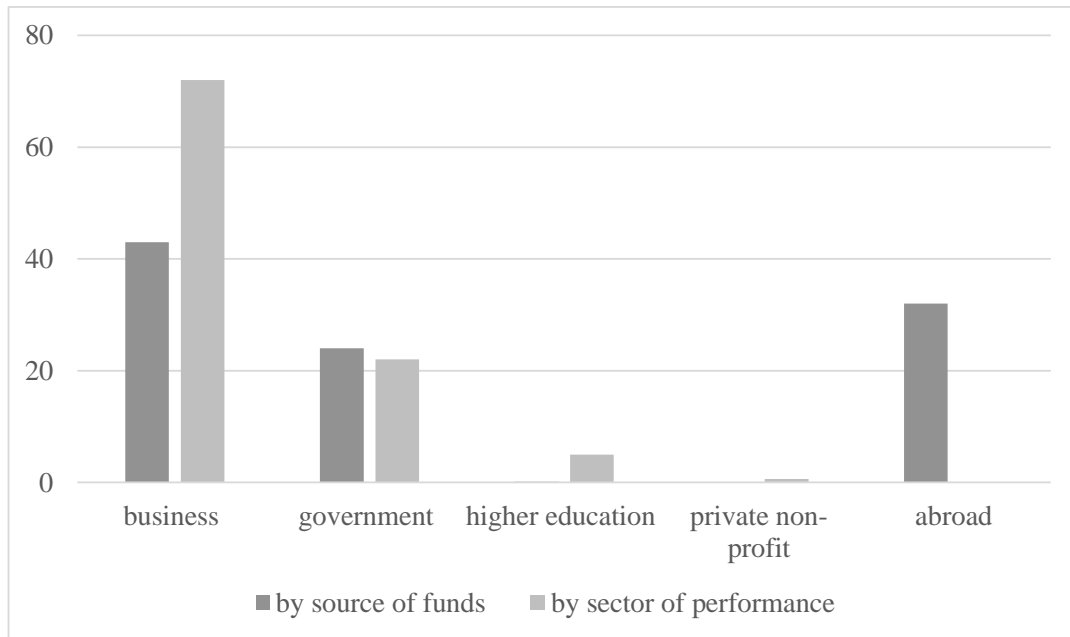
The published scientific results directly reflect the efforts and costs of conducting research. The data by UNESCO do not confirm national policy for significant participation in the science and presence in world achievements (Table 1).

**Table 1:** R&D data for Bulgaria and the European Union

Data	Bulgaria	EU27	Rank Bulgaria/EU27
Researchers per million inhabitants	2 343	3 988	21/27
Scientific publications per million inhabitants	740	2 022	26/27
Gross domestic expenditure on R&D/GDP, %	0.77	2.18	23/27

Source: UNESCO, 2021

The transition to a market economy has changed expectations in Bulgaria to the private sector as a major player in the economy modernisation. In social transformation, the state gradually gave way to the private sector and at the same time emerged NGOs. The state participation in R&D has been preserved due to the high risk and the long period of cost recovery (Graph 1). The main funding sources for R&D are EU projects instead of grants by the state and finance by the private sector.



**Graph 1:** Gross domestic expenditure on R&D for Bulgaria, %  
*Source:* UNESCO, 2021

Bulgaria has realised a lot of national strategies and international projects for R&D financed directly or indirectly by the government for the last 30 years. The results of carried out research were published in indexed journals and useful for academic career of researchers. The reached scientific achievements by Bulgaria does not are based on the contribution of resident journals – the local indexed journals are not mentioned as contributors neither in the conclusions of national strategies nor in the performance of international projects. Both the state as the main finance source and the local indexed journals pay considerable attention to their own policies, between which there is obviously no common ground. This fact is particularly critical of state-owned journals (universities and academies).

The few cases of published project results in indexed journals are due to the requirements of the project itself and not so much due to the initiative of the author(s). There are no cases of referring to a grant by a national or international entity.

## Data and materials

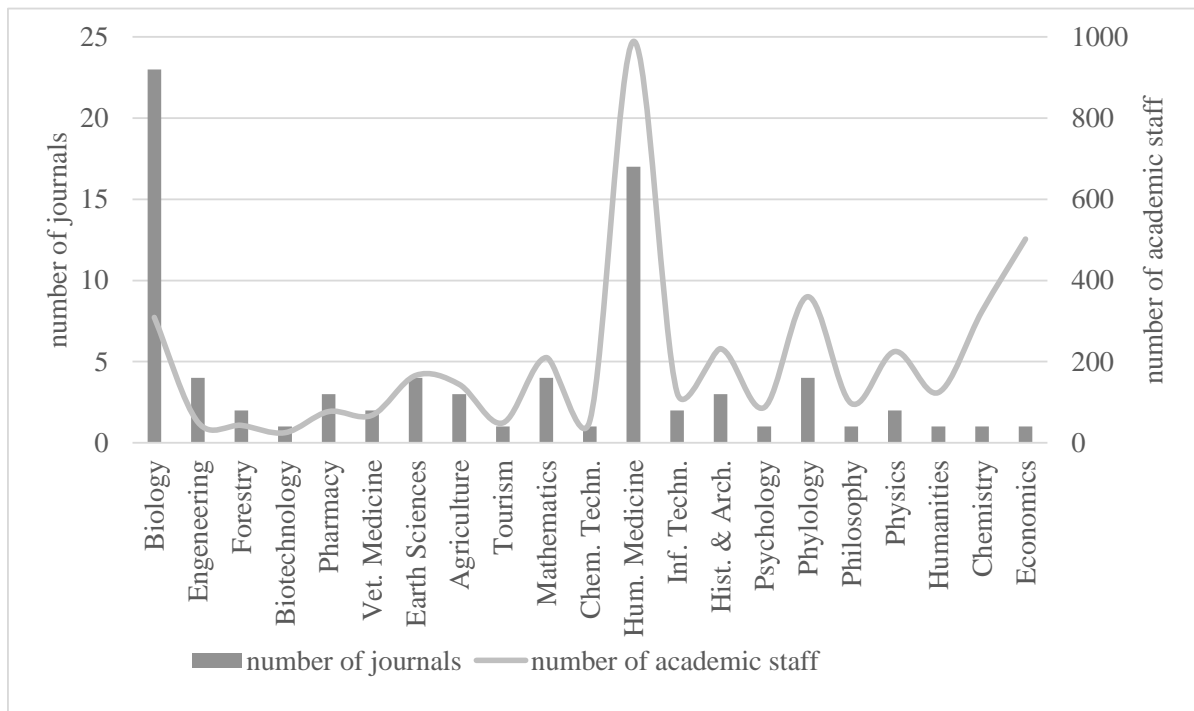
In carrying out the research, we will use database on the academic staff and the indexed journals by a competent authority. Modern legislation in Bulgaria sets sciencemetric requirements for academic career of researchers, which are related to the R&D of each candidate. For publicity of the data, a register of the achievements of academic staff at the National Center for Information and Documentation has been created ([https://nacid.bg/en/register\\_RAS/](https://nacid.bg/en/register_RAS/)). The National Center for Information and Documentation on a regular basis Bulgarian journals indexed honoured in the database of Scopus and Web of Science (Table 2). At the end of 2021, total 81 Bulgarian journals have impact factor / ranking (Appendix 1).

**Table 2:** List of Bulgarian journals with impact factor / ranking, 2021

Database	number of journals
Scopus & Web of Science	24
Scopus	39
Web of Science	18

Source: National Centre for Information and Documentation, <https://randii.nacid.bg/register/search>

We find large differences in the ability of individual researchers to publish their scientific results in a local indexed journal (Graph 2). By using the number of academic staff and the number of indexed journals, a gap emerges between the scientific fields. Researchers in the field of biology are in the best situation – 309 biologists have an opportunity to publish in 23 specialized local journals. At the other pole is the field of economics – more than 500 economists compete for publication in only one local journal. The situation of Bulgarian authors is similar to that of Hyman Minsky, an American economist, who has remained out of sight of the scientific community, as he has published own idea in a regional journal instead of an indexed one.



**Graph 2:** Number of journals with impact factor / ranking and number of academic staff from Bulgaria by scientific fields

Source: own calculation

The state policy for defining fields of higher education as strategic priorities is not reflected in the data – the large number of PhD students and academic staff in fields of business administration, law, pedagogy, defense and arts are without any specialized local indexed journal. The cross analysis between the number of academic staff and the number of indexed journals largely resembles the structure of Bulgarian Academy of Sciences and state universities.

## Results

The international tendencies are the research to be concentrate on a narrow range of scientific fields as well as the scientific journals to publish interdisciplinary publications. In Bulgaria, the situation is unique – the indexed journals are focused on scientific fields with large investments as well as with key factors for national competitiveness (Table 3). Additional factors for focusing on a specific scientific fields, especially for the international publishers in Bulgaria, are the implementation of intellectual property legislation, well-developed database for data storage, and shortened value added chain between science and manufacturing.

**Table 3:** Scientific fields of Bulgarian journals with impact factor / ranking

Scientific field	number of journals
Applied Sciences	15
Arts & Humanities	9
Economic & Social Sciences	2
General	1
Health Sciences	23
Natural Sciences	31

Source: database of Scopus and Web of Science

When we carrying out the research, we could not find any answer to the question of how are indexed in an e-database the journals which are published in a paper form only. Similar issues are – a requirement of the publisher for publishing of all papers in Bulgarian language only (*Pediatriya*) in an English language database or journals in history & archeology field to publish in foreign languages materials that are originally issued in Old Bulgarian language (*Bulgarian Historical Review*).

### Players in publishing cycle:

**Authors.** For properly determination of authorship, there is a requirement each author to use automated systems, such as Contributor Role Taxonomy (*MycoKeys*). Thus, authorship disputes, gift / ghost authorship issues are avoided. Researchers who have contributed to the results should be nominated as co-authors. The co-authors approve the final version of the paper submitted for publication, as well as be aware of the critical remarks and recommendations for correction from the reviewers (*Medical Review*). In case of more than 2-3 co-authors, they may be asked to describe and acknowledge their personal contributions to the paper (*Fractional Calculus & Applied Analysis*). Upon submission, the corresponding author must sign EASE Ethics Checklist (European Science Editing). In a unique case is imposed a restriction on the authors – the author can be only a member of Balkan Environmental Association (at least one of the authors) – he or she has to pay his / her membership fee to Balkan Environmental Association during the year of his / her paper submission (*Journal of Environmental Protection and Ecology*).

In practice, there is no requirement to indicate the study's sponsor. By default, the author is associated with the institution in which he works, but the sponsor is not always the employer. There are a number of cases of authors who work both as a lecturer at a university and as a research associate at an institute of the Bulgarian Academy of Sciences. In these cases the databases report the scientific results to the first employer, i.e. to the university, but not to the other employer (Bulgarian Academy of Sciences), who is the main research sponsor in most of cases. The main motive of these authors in choosing to work at two institutions is the access to indexed journals at Bulgarian Academy of Sciences. We are without comment on the journal's requirement to be paid a fee only for local authors whose results are funded by EU projects (*Comptes rendus de l'Academie Bulgare des Sciences*). There is one case requiring authors to provide accurate and detailed funding information and clear acknowledgement of sponsor support (*Oxidation Communications*).

**Publishers.** Bulgarian publishers form five clusters (Table 4). As part of the transition to democracy and market economy is the process of gravitating of national journals to international publishing groups (De Gruyter, Pensoft, Sciendo, Taylor & Francis, etc.) – total 24 Bulgarian journals, mainly from biology and biomedicine fields, are part of such international groups. Institutes at Bulgarian Academy of Sciences continue to maintain 20 indexed journals in the world databases. Out of a total 52 universities in Bulgaria only eight have own indexed journals. A new type of publisher are NGOs, which are based on professional guilds and international forums, and generating high profit as publisher of indexed journals. We should note one case of symbiosis between an academy and a NGO – Bulgarian Academy of Sciences and of the Union of Chemists in Bulgaria (Bulgarian Chemical Communications).

**Table 4:** Publishers of Bulgarian journals with impact factor / ranking

<b>Publisher</b>	<b>number of journals</b>
Academy	21
international publisher	25
NGO	19
state authority	1
University	15

Source: National Centre for Information and Documentation, <https://randii.nacid.bg/register/search>

**Reviewers.** Reviewers take participation for professional level of the text and rare – for prevention of illegal actions and unfair practices by the author(s). In most cases, the practice of a single-blinded peer review by two experts is applied. In case of differing opinions by reviewers, the manuscript is sent to a third reviewer (*Journal of the Balkan Tribological Association, Linguistique Balkanique*). In the practice of some journals, the number of reviewers has been increased to three reviewers (*European Science Editing, Journal of Theoretical and Applied Mechanics*) and to four reviewers (*Geologica Balcanica*).

In rare cases, the author has opportunity to provide the contact details of four potential reviewers (*Geologica Balcanica*). The suggested reviewers should not have published with any of the authors of the manuscript within the past five years and should not be members of the same research institution (*Ecologia Balkanica*). If author would prefer a specific person not be a reviewer, this should be announced (*Journal of Theoretical and Applied Mechanics*).

There is no case of announcing the names of reviewers and their affiliation. These cases of pseudo anonymity by reviewers reduce both transparency of review process and trust to good publishing practices.

### **Details of publishing practices:**

**Data deposited.** Most journals require that data, science methods, and laboratory protocol to be publicly available in line with responsible and reproducible research, as well as FAIR data principles. The analyzed journals use following databases: International Nucleotide Sequence Database Collaboration (*Balkan Journal of Philosophy*); PROSPERO registry (*Revmatologija*); protocols.io (*Biodiversity Data Journal, MycoKeys*). In some cases, the authors may be asked to provide the raw data of their study together with the manuscript for editorial review and should be prepared to provide public access to such data (*Ikonomicheski Izsledvania*).

**Preparation of manuscripts.** The largest volume of information in the author's manuals is intended for the references. This fact can be explained by the requirements of the scientific databases for scientometric calculations (Scopus, Web of Science, ERIH PLUS, etc.). Individual journals have their own citation policy:

– requirement for authors to artificially increase the number of cited articles from a particular journal in order to increase its impact factor: “References of papers from Journal of Environmental Protection and Ecology journal can help to increase impact factor which is now at 0,838” (*Journal of Environmental Protection and Ecology*);

– recommendation to cite Bulgarian sources as well (*Medical Review*);

– requirement to not use abundance of references at the expense of their relevance (*Medical Review*);

– no more than 25 total references are accepted including maximum two citations from Journal of Environmental Protection and Ecology (*Journal of Environmental Protection and Ecology*).

**Conflicts of interest.** Conflict of interest disclosure practices are determined primarily by the scientific domain of the journal. The broadest volume of practices is applied to publications, whose data concern the interests of subjects outside the authors (medicine), or the results are applied in other research (biology) or the

research uses funding from European projects (economics). Our research identified following cases for the current practices in the indexed journals:

– statement of any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their manuscript (*Forestry Ideas*);

– to be honest about any competing interests, whether sources of research funding, direct or indirect financial support, supply of equipment or materials, or other support (*Biotechnology & Biotechnological Equipment*);

– disclosure of present colleagues, coauthors, and students for whom the editor was chairman of a committee (*Historia Naturalis Bulgarica*);

– information about employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding (*Ikonomicheski Izsledvania*);

– accountability for financial interests or collaborations, direct or indirect, which may raise the question of conflict or bias in the submitted work or in the conclusions, opinions given or implications, or any other sources of funding for related direct or indirect academic competition (*Journal of Theoretical and Applied Mechanics*);

– reporting for employment, consultancies, honoraria, paid expert testimony, and grants or other funding (*Paleobulgarica*).

**Observance of international good practices.** The diversity of scientific fields is reflected in a variety of good practices:

– Declaration of Helsinki for human medicine;

– Principles of Laboratory Animal Care by the National Society for Medical;

– publication ethics and malpractice policies follow the Principles of Transparency and Best Practice in Scholarly Publishing (joint statement by COPE, DOAJ, WAME, and OASPA), the NISO Recommended Practices for the Presentation and Identification of E-Journals (PIE-J), and, where relevant, the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (*Folia Medica*);

– COPE, DOAJ, OASPA, and WAME Principles of Transparency and Best Practice in Scholarly Publishing and NISO Recommended Practices for the Presentation and Identification of E-Journals (*Historia Naturalis Bulgarica*).

**Plagiarism.** Bulgarian journals most often use the official definition of Committee of Publication Ethics: “When somebody presents the work of others (data, words or theories) as if they were his/her own and without proper acknowledgment.” Another commonly used definition is „Plagiarism takes many forms, from ‘passing off’ another’s paper as the author’s own paper, to copying or paraphrasing substantial parts of another’s paper (without attribution), to claiming results from research conducted by others“. In one case, the publisher uses Contributor Role Taxonomy in order to recognise individual author input within a publication (*PhytoKeys*).

Bulgarian journals are trying to expand the scope of plagiarism definition. Good practices come down to:

– to be publish only original material;

– a text with giving proper citation (*Historia Naturalis Bulgarica*);

– without paraphrasing substantial parts of another’s paper (*Ikonomicheski Izsledvania*);

– author declaration that the material has not been published previously, except in the form of an abstract for a scientific event, and has not been submitted to other journal (*Bulgarian Medical Journal*);

– manuscripts must comprise original and unpublished material (except in the form of an abstract, proceeding, or short communication) that is not under consideration for publication elsewhere (*Geologica Balcanica*).

Of scientific interest is the quantitative dimension of plagiarism. Despite the lack of a legal definition and quantity measures for plagiarism, publishers identify plagiarism at the following thresholds:

– 10% – plagiarism is a text with more than 10% of literal replication of different publication (*Bulgarian Medical Journal, Medical Review*);

– 50% – paper submitting should differ from the previously published material by at least 50 percent (*International Journal on Information Technologies and Security*).

When plagiarism is found, the following actions on the part of the publishers are envisaged:

- text will be rejected;
- text will be returned for reprocessing (*Bulgarian Medical Journal*);
- in case of a second substantiated unethical practice, the author receives a life-time ban for publication (*European Journal of Tourism Research*);
- actions following the Committee of Publication Ethics guidelines (*Historia Naturalis Bulgarica, Journal of Hymenoptera Research*).

To prevent plagiarism, Bulgarian journals use different checking systems: Antiplagiat (*Historia Naturalis Bulgarica, Journal of Hymenoptera Research*), ARPHA Writing Tool (*Biodiversity Data Journal*), Contributor Role Taxonomy (*BioRisk*), CREDIT Suite (*Biodiversity Data Journal*), CrossCheck (*Balkan Journal of Medical Genetics, Biotechnology & Biotechnological Equipment*), CrossRef Similarity Check (*European Science Editing*), iThenticate (*Cybernetics and Information Technologie, Folia Medica, Psychological Thought*), Profeza (*Biodiversity Data Journal*), Turnitin (*European Journal of Tourism Research*).

**Self-plagiarism.** A similar concept of plagiarism is self-plagiarism or duplicate submission:

- redundant reuse of author's own work, usually without proper citation (*Biotechnology & Biotechnological Equipment, International Journal of Applied Mathematics*);
- if authors (or one author) have used their own previously published work, or work that is currently under review, as the basis for a submitted manuscript, they are required to cite the previous work and indicate how their submitted manuscript offers novel contributions beyond those of the previous work (*International Journal of Differential Equations and Applications*);
- secondary publication of the same science paper in a periodical (*Bulgarian Medical Journal*);
- authors reuse large parts of their own publications without giving a clear reference to the original source are duplication of work (*Historia Naturalis Bulgarica*);
- slightly modified published works to be sent to multiple journals (*Historia Naturalis Bulgarica*);
- submitting the concurrently submitted manuscript or already published research (*Forestry Ideas*).

**Data fabrication/falsification.** This detail of publication policy is of particular relevance to journals in the fields of medicine and pharmacy. A form of unethical authorship in the following descriptions:

- data is inaccurate and does not representative of author research (*Biotechnology & Biotechnological Equipment*);
- manipulation of images (*Journal of Theoretical and Applied Mechanics*);
- manipulation of research materials, equipment, and/or processes (*Folia Medica, Historia Naturalis Bulgarica*);
- change or omit data or results so that the study is not precisely presented in the manuscript (*Folia Medica, Historia Naturalis Bulgarica*);
- gather and interpret the data in an dishonest way – fictitious or manipulated data, plagiarized material (either from the previous work of the authors or that of other persons), reference omissions, false priority statements, 'hidden' multiple publication of the same data and incorrect authorship (*Oxidation Communications*);
- false priority statements (*Journal of the Balkan Tribological Association*);
- published in the same form in English or any other language without the consent of the copyright-holder (*Geologica Balcanica*).

**Authorship gift / guest authorship** is a detail in publication practices of international publishers only. Our research reveals the following cases:



– someone is added to the list of authors who has not been involved in writing the paper (Biotechnology & Biotechnological Equipment);

– paper written by someone else for the authors (*European Journal of Tourism Research*).

**Citation Manipulation** may be in cases in which:

– any submitted document, which is found to contain citations whose basic objective is to increase the number of citations of a given author's article published in a specific journal (*Journal of Theoretical and Applied Mechanics*);

– editors and reviewers should ask the authors to include references merely to increase the citations in their own work (*Phytologia Balcanica*);

– reviewers requiring authors to cite their own work (*Cybernetics and Information Technologie*).

## Discussion

In conducting the research, we had a great challenge to determine the scientific field of a journal because of wide description in its title and content. The publisher's name was very helpful in resolving this challenge. Comparing the national and international practices by scientific fields, we conclude that Bulgarian indexed journals are closer to the practice of publishers in the EU (biological and medical sciences) than to those in the United States (life sciences, computer science and engineering). The expectations of some stakeholders for publishers' policies towards fields as ecology and green technologies are not met.

The publishers of Bulgarian indexed journals are international groups, national scientific entities (academy, university, and institute) and professional guilds. What they have in common is that the scientific fields of journals are competitive domains. This result of the research can be explained by the policy of publishers to publish contemporary research, for the implementation of which significant funds have been spent, and whose results have practical application. It is with this result of the study that the discrepancy between the competitiveness policy of the state and the publishers is manifested. Despite the fact that the state owns a large number of indexed journals and funds a large number of studies, there are no traces that indexed journals contribute to the achievement of national strategies and international projects in various scientific fields.

We revealed details of publication practices that which can be defined as compliance with the requirements of databases for indexing journals (Scopus and Web of Science). Despite the fact that there are no definitions of illegal practices in the Bulgarian legislation on intellectual property (plagiarism), the indexed journals fill the gap with international good practices. The main factor for the approximation of national publishing practices to international ones is the external environment – national strategies and international projects, implementation of EU legislation, entry of international publishing groups. We have found a phenomenon in which, in a relatively short time and without actions by the competent authorities, national practices were introduced, comparable to foreign ones, which have been established over a long period of time.

## Conclusion

The globalization process radically modernized science by both deconstruction of barriers (regulatory, legal, social) and construction of new ones (international good practices, entry of new competitors, dominant science fields). A small number of leading database successfully imposed their own criteria for clean scientific results. The modern science landscape has been established by requirements for indexing of journals.

Science in Bulgaria has its own trajectory. The state reduced its share in the ownership of scientific journals and retained its leading position as a financial source for research. Based on new legislation for academic career of researchers and entry of new publishers the Bulgarian indexed journals have already applied modern practices.

Our study revealed as details of publishers a tendency for focusing on narrow range of scientific fields with high return of investments and well developed protection of intellectual properties. The details of publication practices of Bulgarian indexed journals are targeted on prevention of plagiarism and data fabrication rules, as well as to instructions for citations. These details are endemic to both national and international publishers and we can explain their existence as a result of requirements for indexing of journals.

Based on our results, we make recommendations to the publishers of indexed journals, as well as to researchers on the subject for good practices:

✓ As a source of information we used instructions for authors and reviewers, published on the sites of journals. To a large extent, this information determined the results obtained. In future research, we recommend authors to combine information from the sites with interviews with the editors. When applying the recommendation, we expect to get a complete picture of publishing practices.

✓ We recommend that authors be trained to work with the requirements of publishing policies. The recommendation applies both to the employers-scientific institutions and to the competent authorities at national level. In implementing this recommendation, we expect the results of more authors to be published in indexed journals.

✓ Third recommendation includes training of authors with specialized software products for data collection and processing, which are approved by the publishers of indexed journals. Additional training is recommended for the use of systems to identify similarities and reduce the cases of plagiarism.

✓ To expand the scope of the research by including in its scope the indexed books, monographs, conference papers, which are typical for the field of arts and humanities. The second expansion of the scope is carrying out the same research after a certain period of time and thus to cover the dynamics and to point out the trends in modern science landscape. Last but not least, the scope should be extended by including another country/ies for comparative analysis.

## References

- Barrios, L., Tapia, J., Mercado, D., and Mora, L. (2017) 'Regulation and self-regulation of ethical practices in scientific publication', *Salud Mental*, Vol. 40, No. 5, pp. 227-234. DOI: 10.17711/SM.0185-3325.2017.029
- Bedeian, A. (2004). 'Peer review and the social construction of knowledge in the management discipline', *Academy of Management Learning and Education*, Vol. 3, pp. 198-216.  
<https://www.jstor.org/stable/40214251>
- Gilbert, A. (2016) *Publishing as Artistic Practice*, Berlin: Sternberg Press.
- Hensel, P. (2018) 'Institutionalized publishing practices as a barrier to participation in the global management discourse', *International Journal of Contemporary Management*, Vol. 17, No. 4, pp. 153-176.  
doi:10.4467/24498939IJCM.18.041.10027
- Johnson, R., Watkinson, A., and Mabe, M. (2018) *The STM Report: An overview of scientific and scholarly publishing*, The Hague: Association of Scientific, Technical and Medical Publishers. [https://www.stm-assoc.org/2018\\_10\\_04\\_STM\\_Report\\_2018.pdf](https://www.stm-assoc.org/2018_10_04_STM_Report_2018.pdf)
- King, D. and Tenopir, C. (2004) *An evidence based assessment of author pays. Nature Web Focus on Access to the Literature*. Nature. [https://trace.tennessee.edu/utk\\_infosciopubs/435/](https://trace.tennessee.edu/utk_infosciopubs/435/)
- Luscher, T. (2012) 'Good publishing practice', *European Heart Journal*, Vol. 33, pp. 557-561.  
<https://doi.org/10.1093/eurheartj/ehr506>
- Mabe, M. (2012) Does journal publishing have a future? In R. Campbell, E. Pentz, & I. Borthwick (Eds.), *Academic and professional publishing*, Oxford: Chandos.  
<https://www.oreilly.com/library/view/academic-and-professional/9781843346692/xhtml/B9781843346692500172.htm>
- Morris, S. (2006) 'Data about publishing'. *ALPSP Alert*, Vol. 112, 8.  
<http://www.alpsp.org/Ebusiness/ResearchPublications/ALPSPAlert/ALERTARCHIVE.aspx>
- Mulligan, A., and Mabe, M. (2011) 'The effect of the internet on researcher motivations, behaviour and attitudes', *Journal of Documentation*, No. 67, pp. 290-311. <https://doi.org/10.1108/002204111111109485>
- OECD and SCImago Research Group. (2016) *Compendium of Bibliometric Science Indicators*, Paris: OECD.
- Pichler, M. (2019) *Publishing Manifestos*, Massachusetts: The MIT Press.
- Starbuck, W. (2016) '60th Anniversary Essay: How Journals Could Improve Research Practices in Social Science', *Administrative Science Quarterly*, Vol. 61, No. 2, pp. 165-183.  
<https://doi.org/10.1177/0001839216629644>
- UNESCO. (2021) *UNESCO Science Report: The race against time for smarter development*, Paris: UNESCO.  
<https://www.unesco.org/reports/science/2021/en>

Verstak, A., Acharya, A., Suzuki, H., Henderson, S., Iakhiaev, M., Lin, C., and Shetty, N. (2014) *On the shoulders of giants: The growing impact of older articles*. ArXiv Preprint ArXiv:1411.0275. doi:arXiv:1411.0275

Wager, E. and Kleinert, S. (2011) *Responsible research publication: international standards for authors*. In: Mayer, T. and Steneck, N. (eds.) *Promoting Research Integrity in a Global Environment*. Singapore: Imperial College Press / World Scientific Publishing, pp. 309-316.

Ware, M. and Mabe, M. (2015) *The STM Report: An overview of scientific and scholarly journal publishing*, The Hague: International Association of Scientific, Technical and Medical Publishers. [https://www.stm-assoc.org/2015\\_02\\_20\\_STM\\_Report\\_2015.pdf](https://www.stm-assoc.org/2015_02_20_STM_Report_2015.pdf)

Zuckerman, H., and Merton, R. (1971) 'Patterns of evaluation in science: Institutionalisation, structure and functions of the referee system', *Minerva*, Vol. 9, pp. 66-100. <https://doi.org/10.1007/BF01553188>

**Appendix 1.** Bulgarian journals indexed in database of Scopus and Web of Science

<b>Title</b>	<b>ISSN</b>	<b>Publisher</b>
<i>Acta Medica Bulgarica</i>	0324-1750 (print)	De Gruyter
<i>Acta Morphologica et Anthropologica</i>	1311-8773 (print)	Institute of Experimental Morphology, Pathology and Anthropology – Bulgarian Academy of Sciences
<i>Acta Zoologica Bulgarica</i>	0324-0770 (print) 2603-3798 (online)	Institute of Biodiversity and Ecosystem Research – Bulgarian Academy of Sciences
<i>Alpine Entomology</i>	2535-0889 (online)	Pensoft Publishers
<i>Anaesthesiology and Intensive Care</i>	1310-4284 (print)	Medical University of Sofia
<i>Archaeologica Bulgarica</i>	1310-9537 (print)	NOUS Publishers LTD
<i>Art Readings</i>	1313-2342 (print)	Institute of Arts Studies – Bulgarian Academy of Sciences
<i>Balkan Journal of Medical Genetics</i>	1311-0160 (print) 2199-5761 (online)	Sciendo
<i>Balkan Journal of Philosophy</i>	1313-888X (print) 2367-5438 (online)	Institute for the Study of Societies and Knowledge – Bulgarian Academy of Sciences
<i>Balkanistic Forum</i>	1310-3970 (print) 2535-1265 (online)	International University Seminar for Balkan Studies and Specialization
<i>Biodiversity Data Journal</i>	1314-2836 (print) 1314-2828 (online)	Pensoft Publishers
<i>Biomath</i>	1314-684X (print) 1314-7218 (online)	Biomath Forum
<i>BioRisk</i>	1313-2644 (print) 1313-2652 (online)	Pensoft Publishers
<i>Biotechnology &amp; Biotechnological Equipment</i>	1310-2818 (print) 1314-3530 (online)	Taylor & Francis
<i>Bulgarian Astronomical Journal</i>	1313-2709 (print) 1314-5592 (online)	Institute of Astronomy – Bulgarian Academy of Sciences and Rozhen NAO

<i>Bulgarian Chemical Communications</i>	0861-9808 (print) 2534-9899 (online)	Bulgarian Academy of Sciences and of the Union of Chemists in Bulgaria
<i>Bulgarian Historical Review</i>	0204-8906 (print)	Institute for Historical Studies – Bulgarian Academy of Sciences
<i>Bulgarian Journal of Agricultural Science</i>	1310-0351 (print) 2534-983X (online)	Agricultural Academy of Bulgaria
<i>Bulgarian Journal of Public Health</i>	1313-6461 (print) 1313-860X (online)	National Center of Public Health and Analyses
<i>Bulgarian Journal of Veterinary Medicine</i>	1311-1477 (print) 1313-3543 (online)	Thracian University
<i>Bulgarian Medical Journal</i>	1313-1516	Medical University of Sofia
<i>Cardiovascular Diseases</i>	0204-6865 (print)	Medical University of Sofia
<i>Comparative Cytogenetics</i>	1993-078X (online) 1993-0771 (print)	Pensoft Publishers
<i>Comptes rendus de l'Academie Bulgare des Sciences</i>	1310-1331 (print) 2367-5535 (online)	Bulgarian Academy of Sciences
<i>Cybernetics and Information Technologie</i>	1311-9702 (print) 1314-4081 (online)	Institute of Information and Communication Technologies – Bulgarian Academy of Sciences
<i>Ecologia Balkanica</i>	1314-0213 (print) 1313-9940 (online)	Union of Scientists in Bulgaria – Plovdiv
<i>Epitheorese Klinikes Farmakologias kai Farmakokinetikes</i>	1011-6575 (online)	PHARMAKON-Press
<i>European Journal of Tourism Research</i>	1994-7658 (print) 1314-0817 (online)	Varna University of Management
<i>European Science Editing</i>	2518-3354 (online) 0258-3127 (print)	Pensoft Publishers
<i>Ezikov Svyat</i>	1312-0484 (print)	South-West University “Neofit Rilski”
<i>Folia Medica</i>	0204-8043 (print) 1314-2143 (online)	Medical University of Plovdiv
<i>Forestry Ideas</i>	1314-3905 (print) 2603-2996 (online)	University of Forestry
<i>Fractional Calculus &amp; Applied Analysis</i>	1311-0454 (print) 1314-2224 (online)	De Gruyter
<i>General Medicine</i>	1311-1817 (print)	Medical University of Sofia
<i>Geologica Balcanica</i>	0324-0894 (print) 2535-1060 (online)	Geological Institute “Strashimir Dimitrov” Bulgarian – Academy of Sciences

<i>Geometry, Integrability and Quantization</i>	1314-3247 (print) 2367-7147 (online)	Bulgarian Academy of Sciences
<i>Hematology</i>	2367-7864 (print)	Bulgarian medical society of Hematology
<i>Herpetozoa</i>	1013-4425	Pensoft Publishers
<i>Historia Naturalis Bulgarica</i>	0205-3640 (print) 2603-3186 (online)	National Museum of Natural History – Bulgarian Academy of Sciences
<i>Ikonomicheski Izsledvania</i>	0205-3292 (print)	Economic Research Institute – Bulgarian Academy of Sciences
<i>International Journal Bioautomation</i>	1314-1902 (print) 1314-2321 (online)	Institute of Biophysics and Biomedical Engineering – Bulgarian Academy of Sciences
<i>International Journal of Applied Mathematics</i>	1311-1728 (print) 1314-8060 (online)	Academic Publications Ltd.
<i>International Journal of Differential Equations and Applications</i>	1314-6084 (online)	Academic Publications Ltd.
<i>International Journal on Information Technologies and Security</i>	1313-8251 (print)	Union of Scientists
<i>Italian Botanist</i>	2531-4033 (online)	Pensoft Publishers
<i>Journal of Chemical Technology and Metallurgy</i>	1314-7471 (print) 1314-7978 (online)	University of Chemical Technology and Metallurgy
<i>Journal of Environmental Protection and Ecology</i>	1311-5065 (print)	Scientific Bulgarian Communications
<i>Journal of Geometry and Symmetry in Physics</i>	1312-5192 (print) 1314-5673 (online)	Institute of Biophysics and Biomedical Engineering –Bulgarian Academy of Sciences
<i>Journal of Hymenoptera Research</i>	1070-9428 (print) 1314-2607 (online)	Pensoft Publishers
<i>Journal of IMAB</i>	1312-773X (online)	Peytchinski Publishing
<i>Journal of the Balkan Tribological Association</i>	1310-4772	Scientific Bulgarian Communications
<i>Journal of Theoretical and Applied Mechanics</i>	0861-6663 (print) 1314-8710 (online)	National Committee of Theoretical and Applied Mechanics – Bulgarian Academy of Sciences

<i>Linguistique Balkanique</i>	0324-1653 (print)	Institute for Bulgarian Language “Prof. Lubomir Andreychin” – Bulgarian Academy of Sciences
<i>Medical Review</i>	1312-2193 (print)	Medical University of Sofia
<i>MycoKeys</i>	1314-4057 (print) 1314-4049 (online)	Pensoft Publishers
<i>Nature Conservation</i>	1314-6947 (print) 1314-3301 (online)	Pensoft Publishers
<i>NeoBiota</i>	1619-0033 (print) 1314-2488 (online)	Pensoft Publishers
<i>Nephrology, Dialysis and Transplantation</i>	1312-5257 (print)	Medical University of Sofia
<i>Nota Lepidopterologica</i>	0342-7536 (print) 2367-5365 (online)	Pensoft Publishers
<i>One Ecosystem</i>	2367-8194	Pensoft Publishers
<i>Oxidation Communications</i>	0209-4541	Scibulcom Ltd.-Scientific Bulgarian Communications
<i>Paleobulgarica</i>	0204-4021 (print) 2603-2899 (online)	Cyrillo-Methodian Research Centre – Bulgarian Academy of Sciences
<i>Pediatrics</i>	0479-7876 (print)	Meditsina i Fizkultura
<i>Pharmacia</i>	0428-0296 (print) 2603-557X (online)	Pensoft Publishers
<i>PhytoKeys</i>	1314-2011 (print) 1314-2003 (online)	Pensoft Publishers
<i>Phytologia Balcanica</i>	1310-7771 (print) 1314-0027 (online)	Institute of Biodiversity and Ecosystem Research – Bulgarian Academy of Sciences
<i>Propagation of Ornamental Plants</i>	1311-9109 (print)	SEJANI Ltd.
<i>Psychological Thought</i>	2193-7281 (online)	South-West University “Neofit Rilski”
<i>Quanta</i>	1314-7374 (online)	Quanta
<i>Rethinking Ecology</i>	2534-9260 (online)	Pensoft Publishers
<i>Review of Clinical Pharmacology and Pharmacokinetics, International Edition</i>	1011-6583 (online)	PHARMAKON-Press
<i>Review of the Bulgarian Geological Society</i>	0007-3938 (print)	Bulgarian geological society
<i>Revmatologiya</i>	1310-0505 (print) 2738-831X (online)	Medical University of Sofia
<i>Roentgenologia and Radiologia</i>	0486-400X (print)	Meditsina i Fizkultura

<i>Series on Biomechanics</i>	1313-2458 (print)	Institute of Mechanics and Biomechanics – Bulgarian Academy of Sciences
<i>Silva Balcanica</i>	1311-8706 (print)	Pensoft Publishers
<i>Subterranean Biology</i>	1314-2615 (online) 1768-1448 (print)	Pensoft Publishers
<i>Surgery</i>	0450-2167 (print)	Medicina i Fizkultura
<i>ZooKeys</i>	1313-2989 (print) 1313-2970 (online)	Pensoft Publishers
<i>ZooNotes</i>	1313-9916 (online)	Plovdiv University
<i>Zoosystematics and Evolution</i>	1860-0743 (print) 1435-1935 (online)	Pensoft Publishers

Source: National Centre for Information and Documentation, <https://randii.nacid.bg/register/search>