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Vladyslav Maksymenko, PhD student of the Oleg Balatskyi Department of Management, Sumy State University, Sumy, Ukraine

ORCID ID: 0009-0003-2053-0869

e-mail: v.maksymenko@biem.sumdu.edu.ua

Denys Smolennikov, PhD (Economics), Associate Professor, Associate Professor of the Oleg Balatskyi Department of Management, Sumy State University, Sumy, Ukraine

ORCID ID: 0000-0001-8418-051X

e-mail: dos@management.sumdu.edu.ua

Activities of Non-governmental Organisations in the Context of Achieving the UN Sustainable Development Goals: a Bibliometric Analysis

Abstract. Introduction. The topic of sustainable development is becoming increasingly popular in academic circles. Many scientists are studying the corporate social responsibility of business, as well as the role of higher education institutions in achieving the Sustainable Development Goals (SDGs). Non-governmental organizations (NGOs) are also important stakeholders and drivers of sustainable development, and their role cannot be overestimated.

Purpose. The purpose of this study is to analyze the activities of non-governmental organizations in the context of the achievement of the UN Sustainable Development Goals, through a bibliometric analysis of the most recent scientific publications in the scientometric database Scopus, in order to evaluate the number of publications, identify the main authors, main thematic areas, keywords and geographical distribution of research, as well as to identify the main challenges and perspectives related to the participation of NGOs in the achievement of the SDGs.

Results. An analysis of scholarly publications related to the role of NGOs in achieving the UN Sustainable Development Goals was conducted. The study found a significant increase in publications, particularly in countries such as the US, UK, Canada and Australia. It also identified the main thematic areas of research, including partnerships for sustainable development, responsible consumption and production, and quality education. The results of the study confirmed the relevance and importance of NGO participation in global sustainable development efforts.

Conclusions. The main findings of the study on the role of NGOs in achieving the SDGs are summarized in detail. The authors emphasize the importance of involving NGOs in the implementation of the SDGs, noting that these organizations act as essential intermediaries between state structures and communities. The findings point to the need to improve the coordination and effectiveness of NGO activities, and the importance of further strengthening policies to support NGOs in their work to achieve the SDGs.

Recommendations focus on improving the interaction between NGOs and governments, and the need for further research to understand the contribution of NGOs to achieving the global sustainable development goals.

Keywords: Sustainable Development Goals; bibliometric analysis; scientometric database; Scopus; non-governmental organisation; non-profit organisation; civil society organisation; public organisation.

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Максименко В. С., аспірант кафедри управління імені Олега Балацького, Сумський державний університет, м. Суми, Україна

Смоленніков Д. О., кандидат економічних наук, доцент, доцент кафедри управління імені Олега Балацького, Сумський державний університет, м. Суми, Україна

Діяльність неурядових організацій в контексті досягнення Цілей Сталого Розвитку ООН: бібліометричний аналіз

Анотація. Дослідження зосереджено на аналізі діяльності неурядових організацій (НУО) в контексті досягнення Цілей сталого розвитку (ЦСР) ООН. Використовуючи бібліометричний аналіз, досліджено останні наукові публікації, що стосуються ролі НУО в досягненні ЦСР. Аналіз включає оцінку кількості публікацій, ключових авторів, основних тематичних напрямів, ключових слів та географічного розподілу досліджень. Отримані результати демонструють значне зростання інтересу до цієї теми, що підкреслює важливість НУО як ключових партнерів у глобальних зусиллях щодо забезпечення сталого розвитку. Було виявлено, що географічними центрами наукових досліджень з окресленої тематики виявилися Сполучені Штати Америки та Велика Британія. Крім того, дана робота дозволила виокремити основні виклики та перспективи, пов'язані з роллю НУО у досягненні ЦСР.

Ключові слова: Цілі сталого розвитку; бібліометричний аналіз; наукометрична база даних; Scopus; неурядова організація; неприбуткова організація; організація громадянського суспільства; громадська організація.

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Formulation of the problem. The UN SDGs represent a global initiative to address the most critical social, economic and environmental issues facing the modern world. Given the complexity and scale of these tasks, various stakeholders, including non-governmental organizations, are involved in their implementation. However, their contribution, effectiveness and the challenges they face need to be better understood. There is a need for a comprehensive analysis of scientific studies that highlight the activities of NGOs in the context of the implementation of the SDGs, which can contribute to a better understanding of their role and identify ways to improve their effectiveness.

Analysis of recent research and publications. The last few years have been characterized by the growing attention of the scientific community to the topic of the UN SDGs, as evidenced by an increase in the number of publications dedicated to different aspects of their achievement and an active discussion on the role of different stakeholders in this process, in particular NGOs. A bibliometric analysis of scientific publications shows that since the adoption of the SDGs in 2015, the number of studies on the link between NGOs and the Sustainable Development Goals has increased significantly and covers all critical areas of the Sustainable Development Goals. In particular, Goal 17: Partnership for Sustainable Development, Goal 8: Decent work and economic growth, and Goal 4: Quality education are the most frequently mentioned in scientific publications.

A significant number of publications are also devoted to the role of NGOs, particularly their contribution to the implementation of the SDGs in their countries. These include studies by J. Mamokhere, T. Mabila [1], C. Espinosa, G. Rangel [2], M. Hoque, B. Lovelock, A. Carr [3], N. Van Haren, R. Fleiner, H. Liniger, N. Harari [4], S. Besancon [5], L. Mariani [6], K. Mohd Salleh [7], D. Aigner, L. Pesqueira [8], A. Adeyemi [9], A. Banerjee, E. Murphy, P. Walsh [10], L. Rodríguez Cardozo [11].

In particular, the research [12] considers how the project management of NGOs can be adapted to the needs of international cooperation, and which management aspects need more attention to improve the efficiency and compliance of projects with the SDGs.

The modern studies show the importance of NGOs in the process of achieving the SDGs. At the same time, there is a need for further research to shed more light on the effectiveness of different approaches and strategies used by NGOs and their impact on specific outcomes in the context of the SDGs.

Formulation of research goals. The purpose of this study is to analyze the activities of non-governmental organizations in the context of achieving the UN Sustainable Development Goals by conducting a bibliometric analysis of recent scientific publications in

the scientometric database Scopus to evaluate the number of publications, identify the main authors, main thematic areas, keywords and geographical distribution of research, as well as to identify the main challenges and perspectives related to the participation of NGOs in the achievement of the SDGs.

Outline of the main research material. The selection of publications for the study was done using the following keywords: "non-governmental organization", "non-profit organization", "civil society organization", "public organization" and "sustainable development goals".

The analysis took into account that each of these terms has a wide range of synonyms. In particular, the term "non-governmental organization" was first used in 1945 in Article 71 of the United Nations Charter [13]. There are also arguments in favor of using the term "non-governmental organization" in the scientific works of domestic scientists. For example, according to the research of I. Vitkovska, in English-language publications two terms are mainly used to designate public organizations: "civil society organization" (CSO) and "non-governmental organization" (NGO) [14]. S. Ponomaryov notes that in modern international legal documents and official English-language publications, the concept of "non-governmental organization" (NGO) is the most widespread [15].

The first stage of the research consisted in analyzing publications reflecting the connection of NGOs with the SDGs, using the Scopus database [16].

The dynamics of publication activity was covered by selecting articles in the scientometric database Scopus by searching for "title, abstract, keywords". Keywords corresponding to the English synonyms of the terms "non-governmental organization", "non-profit organization", "civil society organization" and "public organization" in combination with the keyword "sustainable development goals" were used. The search query is formulated as follows "TITLE-ABS-KEY (non-governmental organization) OR TITLE-ABS-KEY (non-profit organization) OR TITLE-ABS-KEY (civil society organization) OR TITLE-ABS-KEY (public organization) AND TITLE-ABS-KEY (sustainable development goals) AND PUBYEAR > 2015 AND PUBYEAR < 2024 AND LIMIT-TO (DOCTYPE, "ar")". The analysis was performed for articles from 2016 to 2023. Microsoft Excel software was also used to analyze and distribute the scientific publications of the authors of the Scopus database according to their relevance to the critical directions of the Sustainable Development Goals and their visualization.

The analysis of scientific publications from 2016 to 2023, with a total of 249 articles, shows an increasing trend in the number of publications with selected keywords (Fig. 1).

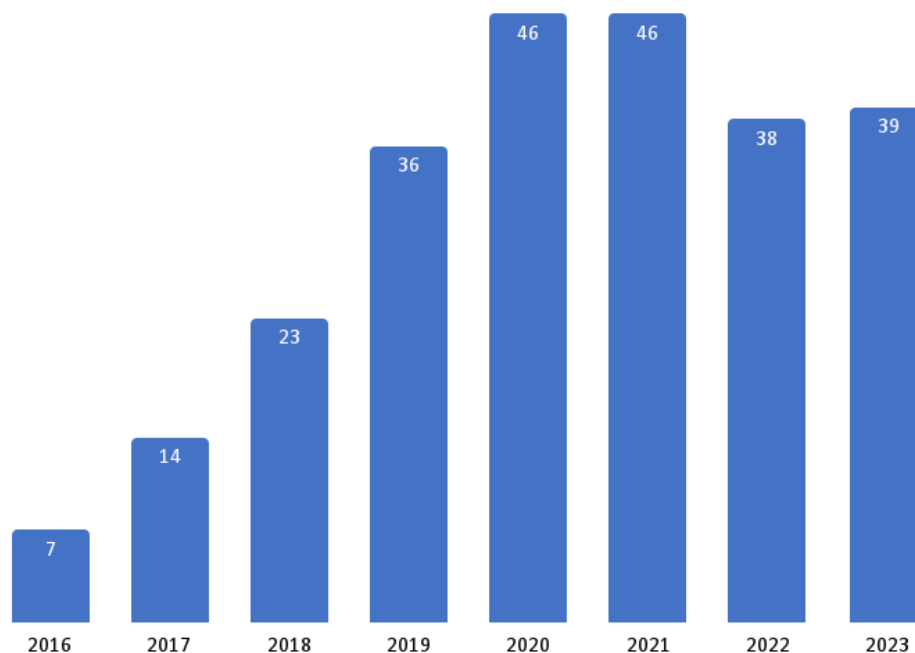


Figure 1 – Number of articles in the Scopus database containing the words "non-governmental organisation", "non-profit organisation", "civil society organisation", "public organisation", and "sustainable development goals" (all subject areas, 2016-2023)

Source: developed by the authors based on information from the Scopus database [16] using the SciVal toolkit [17]

In particular, the separate keywords "non-governmental organization" and "sustainable development goals" have 146 articles in the Scopus database, "civil society organization" and "sustainable development goals" - 64 articles, "non-profit

organization" and "sustainable development goals" - 27 articles, "public organization" and "sustainable development goals" - 17 articles.

At the same time, each keyword has its number of articles in the Scopus database (Table 1).

Table 1 – The number of articles according to keywords

Keywords	Number of articles
sustainable development goals	22276
non-governmental organisation (non-governmental organisation)	7169
nongovernmental organisation	4096
non-profit organisation	4038
nonprofit organisation	3032
public organisation	2940
civil society organisation	2383

Source: Scopus database [16]

The analysis of each keyword query in the Scopus database by the number of articles confirmed the opinion regarding the correctness of the choice of keywords for this study. It also confirmed the popularity of the use of the term "non-governmental organization"

in comparison with the terms "non-profit organization", "public organization" and "civil society organization".

The analysis of the contribution of scientists to the research of the selected topic showed that the total number of citations in the Scopus database is 5090

references. The most cited scientific publication in the Scopus database from our studied sample is the work of J. Mensah, "Sustainable Development: Meaning, History, Principles, Pillars and Implications for Human Action: Literature Review" [18].

The most significant number of studies by country is the United States of America - 46 publications, Great

Britain - 36 publications, Canada - 23 publications, Australia - 19 publications and Spain - 18 publications. The results of this analysis are presented in Table 2.

Countries	Scholarly output	Views count	Field-weighted citation impact (excl. self-citations)	Citation count (excl. self-citations)
United States	48	2544	2.38	1516
United Kingdom	36	2276	1.72	725
Canada	23	1587	2.68	1004
Australia	19	1284	3.72	1070
Spain	18	1841	1.48	263
Germany	17	977	1.36	307
India	14	757	3.35	726
Brazil	11	644	4.23	710
Malaysia	10	548	0.24	31
Netherlands	10	624	1.48	274

Table 2 – Number of scientific publications published by the country

Source: Scopus database [16], SciVal toolkit [17]

Illustration of the number of authors' articles published by country the studied sample covers almost all world continents (Fig. 2).



Figure 1 Illustration of the number of articles published by the authors' country of the studied sample

Source: SciVal [17]

Kwame Nkrumah University of Science and Technology, the University of Technology Sydney and the

World Health Organization have the most research by institution. Each institution has five scientific publications

in the Scopus database for the selected keywords. The results of this analysis are shown in Table 3.

Table 3 – Number of scientific publications published by the institutions of the studied sample

Institution	Scholarly output	Views count	Field-weighted citation impact (excl. self-citations)	Citation count (excl. self-citations)
Kwame Nkrumah University of Science and Technology	5	215	0.55	66
University of Technology Sydney	5	154	0.80	47
World Health Organization	5	66	0.69	16

Source: Scopus database [16], SciVal toolkit [17]

Then, the articles in the Scopus database were analysed according to their relevance to the Sustainable Development Goals (Fig. 3).

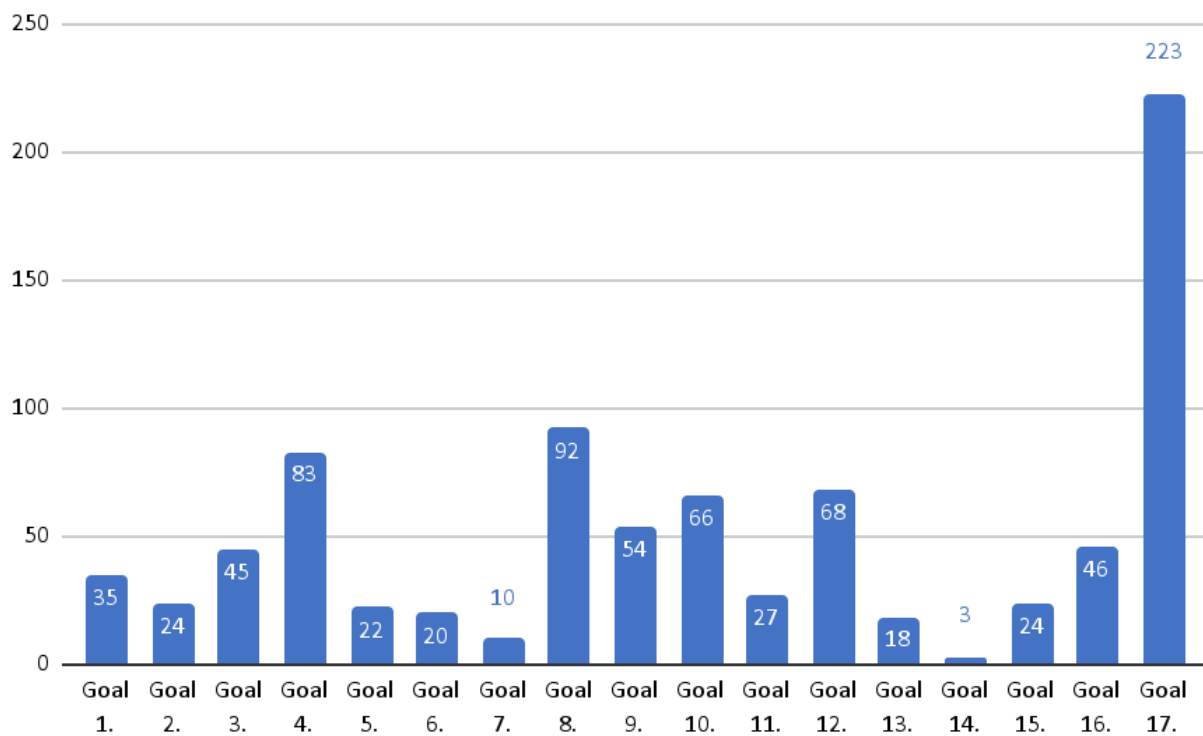


Figure 3 – Correspondence of the studied sample of articles by the authors of the Scopus database to the Sustainable Development Goals

Source: developed by the authors based on information from the Scopus database [16] using the SciVal toolkit [17]

The largest number of articles relates to SDG 17, Partnership for the Goals, with 223 articles. It is followed by SDG 8, "Decent Work and Economic Growth," with 92 articles, and SDG 4, "Quality Education," with 83 articles.

The fewest articles are related to SDG 7, "Affordable and clean energy," with ten articles; SDG 13, "Climate action," with 18 articles; and SDG 14, "Life below water," with only three articles.

This indicates that the issue of partnership and cooperation to achieve sustainable development is the

most researched topic. In contrast, issues of access to clean energy, mitigating the effects of climate change, and conserving marine resources receive less attention in the context of NGOs.

The distribution of existing scientific works by subject area shows the main field of expertise: "Social Sciences" (28.9%), "Environmental Sciences" (16.7%), "Medicine" (10.8%), "Business, Management and Accounting" (8.6%), "Energy" (8.2%) (Figure 4).

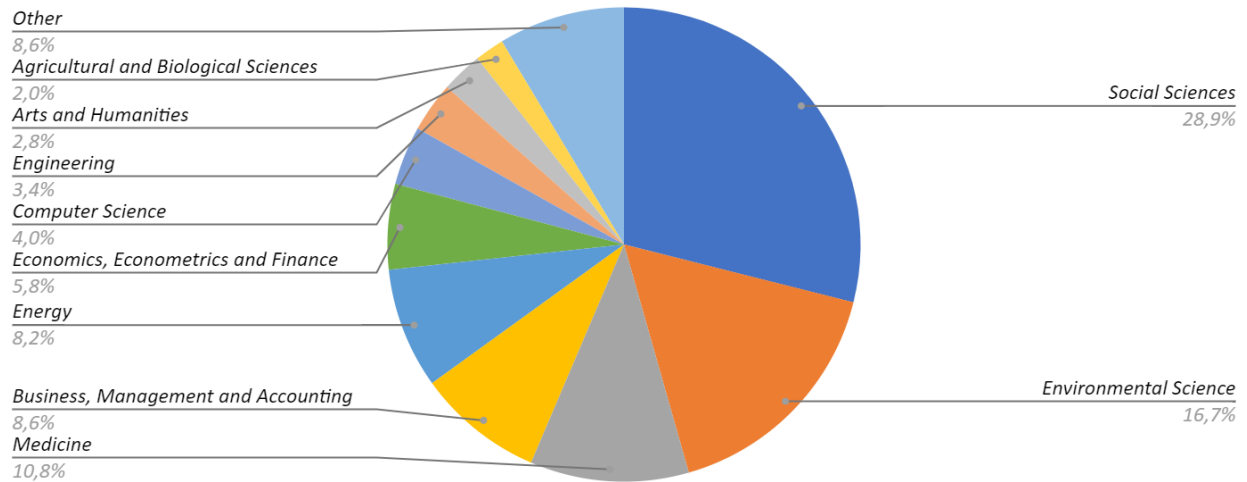


Figure 4 Distribution of existing scientific works by subject areas

Source: developed by the authors based on information from the Scopus database [16] using the SciVal toolkit [17]

The following fields were included in the other category: "Multidisciplinary" (3.2%), "Earth and Planetary Sciences" (2.4%), "Biochemistry, Genetics and Molecular Biology" (2%), "Nursing" (2%), "Psychology" (2%), "Decision Sciences" (1.6%), "Mathematics" (1.2%), "Health Professions" (1.2%), "Chemical Engineering" (0.4%), "Immunology and Microbiology" (0.4%), "Materials Science" (0.4%), "Pharmacology, Toxicology and Pharmaceutics" (0.4%).

Conclusions. The bibliometric analysis of publications confirmed the relevance of the topic. The analysis showed that countries such as the US, UK, Canada, Australia and Spain had the most significant studies. The study showed that the most frequently mentioned goals in the publications are SDG 17 ("Partnership for the Goals"), SDG 8 ("Decent work and economic growth") and SDG 4 ("Quality education").

In particular, the data on the incredible popularity of the term "non-governmental organization" among researchers compared to other synonymous forms was confirmed. In terms of institutions, the activity of the Kwame Nkrumah University of Science and Technology, the University of Technology Sydney and the World Health Organization was revealed in terms of the number of published articles on the selected research topic. The distribution of the existing scientific works by subject areas showed the popularity of "Social Sciences", "Environmental Sciences" and "Medicine".

According to the analysed research, the main challenges for NGOs are the need to improve the effectiveness of the approaches and strategies used and to increase the impact on specific results in achieving the SDGs. Further research in this area is urgent to improve understanding and increase the effectiveness of NGOs in global sustainable development efforts.

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