HISTORY OF SCIENCE

ORIGINAL RESEARCH ARTICLE
JEL: 218
EDN: JMVWVR

Paradoxes of scientometry: ratings of Nobel Prize laureates in economic sciences in international databases

V.V. Spasennikov
Bryansk State Technical University, https://ror.org/05kknm922, Bryansk, Russian Federation;
e-mail: spas1956@mail.ru

Abstract. The relevance of this study is determined by the absence of a comprehensive ranking of Nobel laureates in the field of economics, based on international databases such as the Web of Science Core Collection (WoS) and Scopus. This study aims to address this gap by developing a four-factor integrated assessment method for the normalized ranking of economic Nobel laureates, utilizing both the Hirsch index and citation metrics from these databases. A significant aspect of the study is the exploration of the interdisciplinary nature of the Nobel prize winners' creative legacy. The study reveals the number of Nobel Laureates by country and field of economics based on foreign classification systems, as well as correlations between the citations of the authors and their Hirsch indices, according to Spearman's correlation coefficient. Additionally, a comparative analysis is conducted to evaluate the accuracy of predictions regarding the ranking of laureates. Based on the integrated normalized rating, the top 20 most cited Nobel Prize winners have been identified, which correlate significantly in WoS and Scopus databases. The ranking positions and scientometric status of these scholars in both the WoS and Scopus do not coincide, even in the top three positions. The study outlines prospects for further research related to the need for Russian scientists to publish in international journals and the inclusion of Russian journals in international scientometric databases. Government departments and private companies can benefit from the work of these scientists. Future research should focus on improving the visibility of Russian science on the global stage. This can be achieved through increased publication in high-impact journals and inclusion in major scientometric databases such as WoS and Scopus.

Keywords: scientometry, Nobel Prizes, economics, citation index, *h*-index, rank correlation, integral rating

Funding: This research received no external funding

For citation: Spasennikov, V.V. (2025). Paradoxes of scientometry: ratings of Nobel Prize laureates in economic sciences in international databases. *Economics of Science,* 11(4), 10–23. EDN: JMVWVR

ИСТОРИЯ НАУКИ

ОРИГИНАЛЬНАЯ ИССЛЕДОВАТЕЛЬСКАЯ СТАТЬЯ
УДК: 001.:001.89
JEL: 218
EDN: JMVWVR

Парадоксы наукометрии: рейтинги лауреатов Нобелевской премии по экономическим наукам в международных базах данных

В.В. Спасенников
Брянский государственный технический университет, https://ror.org/05kknm922, Брянск, Российская Федерация; e-mail: spas1956@mail.ru

Аннотация. Актуальность данной статьи определяется отсутствием результатов рейтингования лауреатов Нобелевской премии по экономическим наукам на основе данных международных наукометрических баз Web of Science Core Collection (WoS) и Scopus. Показано, что существует два парадокса наукометрии: один связан с конфликтом интересов между частными владельцами международных наукометрических баз данных и научной политикой конкурирующих стран, а второй – с отсутствием достоверных оценок результативности научной деятельности лауреатов Нобелевской премии по экономическим наукам за пятидесятилетний период (1970–2020 гг.). Целью статьи является построение интегральной четырехфакторной оценки нормированного рейтинга лауреатов Нобелевской премии по экономике с использованием индекса Хирша и индекса цитируемости в двух международных наукометрических базах данных. Выявлено распределение лауреатов Нобелевской премии по странам и областям экономической науки в соответствии с зарубежными классификаторами. Определены корреляционные связи (по Ч. Спирмену) между показателями цитируемости авторов и индексом Хирша. Проведен сравнительный анализ точности прогнозов, связанных с рейтингованием лауреатов. На основе интегрального нормированного рейтинга выявлены топ-20 самых цитируемых лауреатов Нобелевской премии, для которых зафиксирована статистически значимая корреляция в базах WoS и Scopus. Показано, что рейтинговые места и наукометрический статус в WoS и Scopus не совпадают даже для тройки лидеров рейтинга. Намечены перспективы дальнейших исследований, связанные с необходимостью расширения присутствия российских ученых в зарубежных журналах, а также включения российских изданий в международные наукометрические базы данных. Подчеркнуто, что заказчиком публикаций отечественных ученых должны стать как государственные ведомства, так и частные компании.

Ключевые слова: наукометрия, Нобелевская премия, экономика, индекс цитируемости, индекс Хирша, ранговая корреляция, интегральный рейтинг

Информация о финансировании: Данное исследование выполнено без внешнего финансирования

Для цитирования: Спасенников, В.В. (2025). Парадоксы наукометрии: рейтинги лауреатов Нобелевской премии по экономическим наукам в международных базах данных. *Экономика науки,* 11(4), 10–23.
EDN: JMVWVR

INTRODUCTION

Both in Russia and abroad, Nobel Prize laureates have consistently attracted the attention of the scientific community. Recently, there has been a growing interest not only in the laureates themselves but also in the history of the prize's inception. In our country, this is significantly supported by the activities of the International Nobel Information Center (INIC) under the leadership of V.M. Tyutyunnik – a scientific organization that has emerged as a leading center for the collection, processing, and dissemination of Nobel-related information (Pirozhkov & Pirozhkova, 2018). The publication in 2024 of a two-volume work: "On Nobel Laureates from 1969 to 2000 (Volume 1: The 20th Century)" and "On Nobel Laureates from 2001 to 2003 (Volume 2: The 21st Century)" holds significant importance for the history of both foreign and domestic scientometrics and Nobel studies, as it includes an analysis of 55 prizes in the genre of popular scientific Nobel literature (Voronov, 2024).

V.M. Tyutyunnik and G.T. Samkharadze conducted a scientometric analysis of the nominations for the Nobel Prizes and their publication activity in the fields of physics and chemistry over a 50-year period (from 1901 to 1950). It is known that economics as a science was not included in the famous will of Alfred Bernhard Nobel (1833–1896) – a Swedish chemist, engineer, and entrepreneur, who held 355 different patents and gained the most fame for his invention of dynamite (Tyutyunnik & Samkharadze, 2023).

The Prize in Economic Sciences or the Prize for Contributions to Economic Sciences in Memory of A. Nobel was established in 1968 by

Tthe Swedish National Bank in celebration of its 300th anniversary established the Prize in Economic Sciences or the Prize for Contributions to Economic Sciences in Memory of A. Nobel1968. This event is commemorated by a series of postal miniatures from various countries (Syomin, 2021). Economic Nobel studies represent an interdisciplinary scientific field; however, it is in the realm of economic science and domestic publications that this interdisciplinary discourse receives unjustifiably insufficient attention (Aleskerov, 2005);

(Avdasheva & Shastitko, 2015); (Balashova, 2005); (Gelman & Shprenger, 2014); (Kuzminov & Yudkevich, 2010); (Lebedev, 2018).

An analysis of the domestic scientometric database RINC since 2005 to 2025 indicates that the subjects of research of the laureates of the A. Nobel Prize in Economic Sciences are approximately equally represented in both macroeconomics and microeconomics.

As of today, 57 awards have been presented to 99 scientists from around the globe. The Nobel Committee does not always award the prize for the same achievement to a single scientist, although individual laureates make up the majority. Joint prizes are awarded by the Nobel Committee not only in cases of co-authorship but also in situations where scientists share a common foundation. In such cases, they may be opponents of one another or employ different scientific approaches, yet arrive at similar conclusions. Throughout the history of the economics prize, only three women have been honored with this award: Elinor Ostrom (1933–2012), who received the prize in 2009 for her research in economic organization; Ester Duflo, who was awarded the prize in 2019 for her experimental approach to reducing global poverty; and Claudia Goldin, who received the prize in 2023 for enhancing our understanding of women's labor market outcomes.

The joint Nobel Prize holds a prestige level comparable to that of individual awards. For instance, on October 13, 2025, the Royal Swedish Academy of Sciences announced the names of the laureates for the Nobel Prize in Economic Sciences. The prize, amounting to 11 million Swedish kronor (approximately 95–100 million rubles), was awarded to American-Israeli scholar Joel Mokyr, while French economist Philippe Aghion and Canadian scholar Peter Howitt each received 25% of the prize for their work titled "For the explanation of innovative economic growth." The award ceremony took place on December 10, 2025, in Stockholm, coinciding with the anniversary of A. Nobel's death.

The work of M.M. Sokolov and E.A. Chechik, present academic rankings and scientometric evaluations of Russian economists (Sokolov & Chechik, 2022). It is demonstrated that the works of domestic scholars are virtually absent in international scientometric databases (or their share falls within the limits of statistical error). Based on this, one can conclude that the likelihood of Russian economists receiving the Nobel Prize is currently approaching zero (Spasennikov, 2025). Nevertheless, it is an evident fact that Russian science contributes to the world by definition, being a part of it, and to deny this is as absurd as not considering our country a part of humanity (Gavrilova et al., 2016). The aim of this article is to construct an integral four-factor assessment of the normalized ranking of Nobel Prize laureates in economics using the Hirsch index (h-index) and citation index based on data from two international scientometric databases (WoS and Scopus).

To achieve this goal, the following tasks have been set and resolved:

1. A statistical analysis of the distribution of Nobel Prizes by country and research fields has been conducted, and a methodology for calculating a normalized integral rating of laureates has been developed for two independent international scientometric databases, taking into account widely recognized scientometric indices.
2. A correlation between the h-indices and citation indices of Nobel Prize laureates has been identified based on data from international scientometric databases over a 50-year period.
3. Potential directions for enhancing the citation rates and scientific value of publications by Russian scholars have been determined, along with their ranking positions in promising research areas.

Methodology: statistics on the distribution of awards by countries and research directions

As demonstrated in the introduction, the Prize Committee and the Royal Swedish Academy of Sciences have justified an interdisciplinary

and broadly inclusive interpretation of the term "economic sciences," which has opened up opportunities for awarding the prize to representatives of fields related to economics (Voronov, 2024a); (Voronov, 2024b); (Gavrilova et al., 2016); (Tyutyunnik, 2023); (Acemoglu, 2005); (Maltseva & Batagelj, 2019); Murray et al., 2013) and others.

An analysis of the works of Nobel Prize laureates in economic sciences over a 50-year period, based on data from WoS and Scopus, provides grounds to assert that the overwhelming majority of research is characterized by a multidisciplinary, interdisciplinary, or transdisciplinary nature, as illustrated in *Figure 1*. The classification of research presented in *Figure 1* is also supported by the results of an analysis of works in scientometrics (Kleeva, 2025), (Spasennikov & Androsov, 2021); (Chigarev, 2024); (Acemoglu, 2005); (Ansell & Gash, 2008); (Hirsch, 2005); (Liu & Lu, 2012); (Wagner & Jonkers, 2017).

The update of factual data as of October 24, 2025, indicates that from 1969 to 2025, the award in economic sciences has been granted 57 times to 99 laureates; the award ceremony traditionally takes place on December 10. In 2024, the laureates included Daron Acemoglu, Simon H.R. Johnson, and James A. Robinson for their research on the formation of institutions and their impact on prosperity.

In 2025, the award was given to Joel Mokyr for half of the prize, while Philippe Aghion and Peter Howitt received a quarter of the prize each for their work on explaining innovation-driven economic growth (creative destruction and conditions for sustainable growth). There are several factors that influence the number of awards received by a country or institution. According to the works of several authors (Acemoglu & Robinson, 2016), (Gerasimenko, 2024), (Kleeva, 2025), (Morev, 2010), (Shibarshina, 2019), (Spasennikov et al., 2020), the main factors include:

1. The number of employees engaged in research and development;
2. The level of migration and collaborative connections among participants;
3. The intensity of international cooperation among scientists;
4. The investment policy of the state regarding science.

Figure 2 illustrates the distribution of Nobel Prizes in Economic Sciences by country. The absolute dominance of the United States in the number of prizes can be attributed, among other factors, to the fact that journals in economics and related fields, indexed by international scientometric databases such as WoS and Scopus, are predominantly in English and require the presence of English-language metadata (titles of publications,

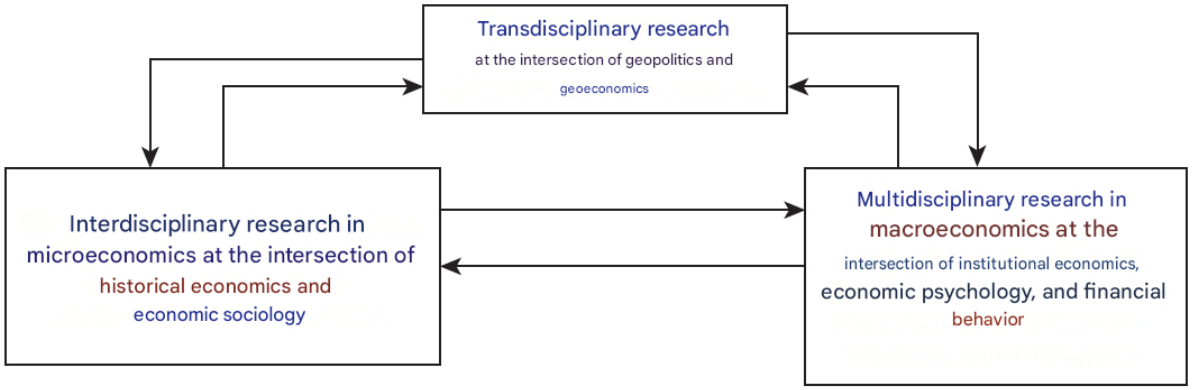

Figure 1. The relationship between the research of Nobel Prize laureates in the field of economic sciences
Рисунок 1. Взаимосвязь исследований лауреатов Нобелевской премии в сфере экономических наук

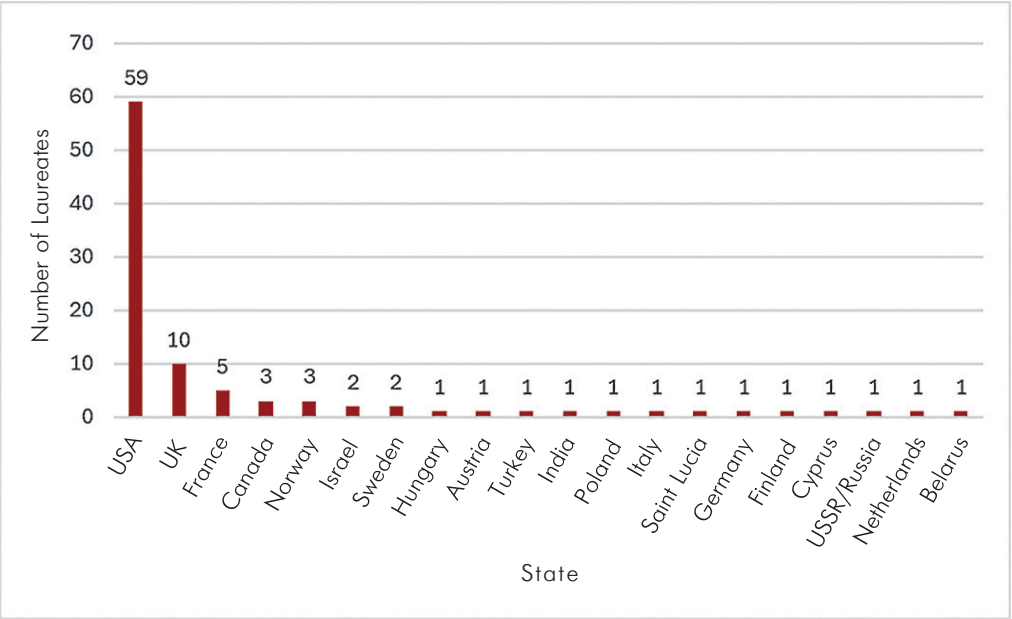

Figure 2. Distribution of the Nobel Prize among representatives of various countries in economic sciences

Рисунок 2. Распределение Нобелевской премии по экономическим наукам среди представителей различных стран

abstracts, keywords), which limits the visibility of works in other languages. Furthermore, Russia significantly lags behind the United States and Western countries in terms of the share of domestic expenditure on research and development, which adversely affects the scale and competitiveness of scientific research (Gerasimenko, 2024); (Rogov, 2010); (Spasennikov, 2025); (Chigarev, 2024).

A significant interest lies in the distribution of Nobel Prizes across the fields of economic science. Of the 57 prizes awarded, 9 (15.8%) have been conferred in the area of macroeconomic theory. For their foundational contributions to the theory of money and economic fluctuations, as well as their in-depth analysis of the interdependencies among economic, social, and institutional phenomena, Gunnar Myrdal and Friedrich August von Hayek were honored in 1974. In 1976, Milton Friedman received the prize. The laureate in 1995 was Robert E. Lucas Jr., while Franco Modigliani was awarded in 1985. In 2009, Elinor Ostrom and Oliver E. Williamson were recognized. Finally, in 2011, the prize was awarded to Thomas J. Sargent and Christopher A. Sims.

Research in the field of microeconomic theories has also been awarded 9 prizes out of 57 (15.8%). In 1978, the laureate was Herbert A. Simon, in 1982 – George J. Stigler "for the analysis of industrial structures and regulation", in 1991 – Ronald H. Coase "for the role of transaction costs and property rights", and in 2009 (overlapping with organizational economics) – Elinor Ostrom.

Research in econometrics and financial economics has been recognized with 7 awards (12.3%). In 1997, the prize was awarded to Robert C. Merton and Myron S. Scholes "for a new method of valuing derivatives". In 2001, the Nobel Prize for achievements in the field of "Information Economics" was awarded to George A. Akerlof, A. Michael Spence, and Joseph E. Stiglitz, and in 2002 – Daniel Kahneman and Vernon L. Smith in the area of "Behavioral and Experimental Economics."

Throughout different periods of the existence of the award, the 'mainstream' research areas have evolved in tandem with geopolitical and geo-economic contexts, as well as the dynamics of citation of laureates' works. While most research is interdisciplinary in nature, it

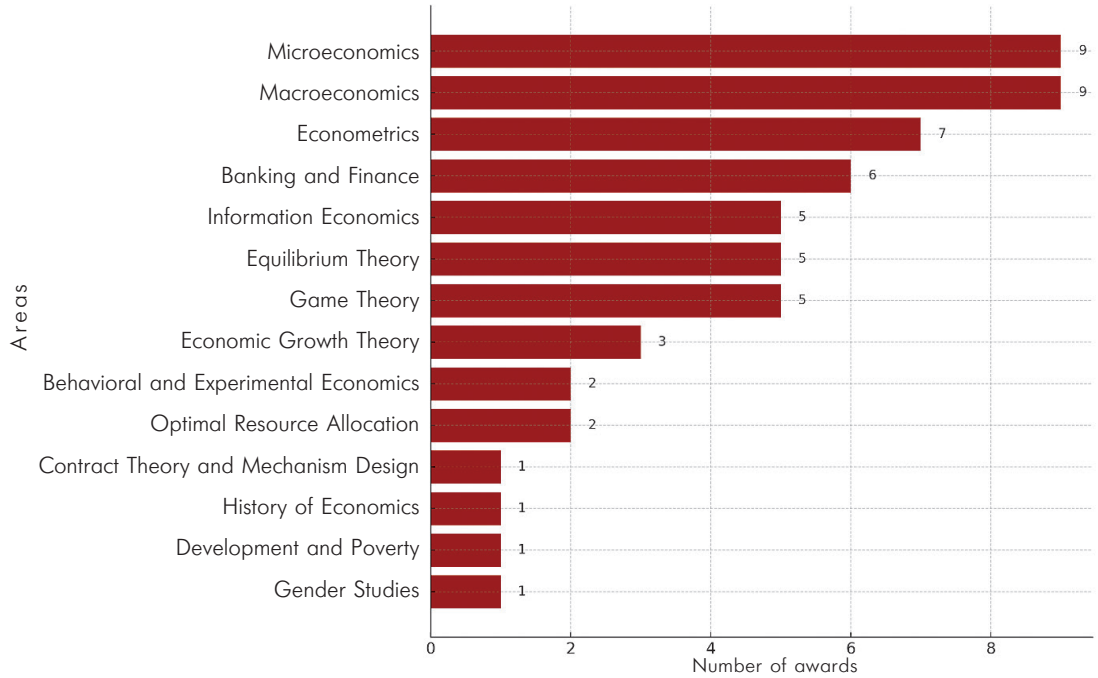

Figure 3. The main research areas of the Nobel Prize laureates in Economics
Рисунок 3. Основные направления исследований лауреатов Нобелевской премии по экономике

is possible to identify key directions within the fields of economic science as recognized in the United States. Figure 3 illustrates 14 fields in which awards were granted from 1969 to 2025 (a total of 57 awards).

The work of Wagner and Jonkers (2017) demonstrates that international collaboration networks enhance the scientific status of countries and increase the publication activity and citation rates of authors. An analysis of all Nobel Prizes reveals that the majority of awards result from collaborations between U.S. scholars and their colleagues from the United Kingdom, Canada, Israel, Norway, France, and Germany. Both during the Soviet era and after the dissolution of the USSR, the Russian economy has effectively remained outside the purview of the Nobel Committee.

The works of Leonid Vitalievich Kantorovich stand as exceptions (1912–1986) because Kantorovich was awarded the Nobel Prize in 1975 alongside Tjalling C. Koopmans for their contributions to the theory of optimal resource allocation.

Based on the initial analysis of statistical data, there arises a need for further statistical analysis of correlation relationships to subsequently rank the laureates and develop proposals to resolve the existing discrepancies between the data from two foreign scientometric databases.

The relationship between the citation indices of Nobel Prize laureates in Economics within scientometric databases

Our research (Spasennikov & Androsov, 2021), (Spasennikov, 2025) demonstrates that formal assessments of scientific activity use, among other metrics, the h-index and total citation count. Despite the limitations of scientometrics, which are thoroughly discussed in both domestic and international literature, it is reasonable to evaluate the publication activity of Nobel Prize laureates based on these indicators (Gavrilova et al., 2016); (Gerasimenko, 2024); (Rogov, 2010); (Polyanin, 2014); (Hirsch, 2005); (Zhou et al., 2025).

Citation Index

The citation index is defined as the total number of references to an author's

publications and is expressed by the following formula:

$$I = \sum_{i=1}^{N} C_i,$$

where (N) represents the total number of publications, and C_i denotes the number of citations for the i-th article.

Hirsch Index (concept)

The Hirsch Index simplifies the two-dimensional distribution of "number of publications – number of citations" into a single integral metric, assuming a comparable "complexity" in both the creation of the work and the acquisition of citations.

Hirsch Index (definition)

A scholar who has published N articles possesses an h-index if h of their articles are cited at least h times each, while any of the remaining N-h articles are cited no more than h times. To calculate the index, the articles are arranged in descending order of citations: $C_1 \geq C_2 \geq C_3 \geq \ldots$; if C_k represents the number of citations for the k-th work, then $h = max\ k$: $C_k \geq k$, which is equivalent to the conditions $C_k \geq k$ and $C_{k+1} < k + 1$; sometimes a "compact" notation for the boundary condition is used: $(C_k - k), (C_k + 1 - (k+1)) \leq 0$.

It should be noted that the Hirsch index significantly varies depending on the field of research: generally, it is lower in mathematics and higher in biomedicine.

The limitations of the h-index include its failure to account for the contributions of highly cited individual works and its inability to distinguish the personal contribution of a specific author in co-authored papers. Furthermore, the standard WoS scheme does not consider citations to books and patents (Polyanin, 2014), (Spasennikov & Morozova, 2020), (Spasennikov et al., 2020).

If the citation index I is known, the normalized index I_n can be approximately estimated using the formula:

$$I_n = k_N, I,$$

where, $k_N = \frac{N}{\sum_{i=1}^{N} M_i}$,

N – the number of works,

M_i – the number of co-authors of the i-th work.

Currently, WoS is managed by Clarivate, following its separation from Thomson Reuters in 2016. Scopus, owned by Elsevier, maintains content selection through the Scopus Content Selection and Advisory Board (CSAB) and requires English-language metadata, with full texts available in any language when possible.

Let us examine the relationship between the Scopus and WoS databases using the rankings of Nobel Prize winners in Economics as an example. To do this, we will rank the 20 most authoritative scholars based on their h-index in Scopus and evaluate the Spearman rank correlation coefficient between the rankings derived from the Scopus and WoS databases. In practice, there is a high, though not perfect, consistency between the rankings; discrepancies can be attributed to the scope of sources (journals, books, conference proceedings), aggregation rules, and language requirements.

The Spearman's rank correlation coefficient is calculated using the following formula:

$$R_{HSW} = 1 - 6\sum \frac{d^2}{N(N^2-1)} = 1 - 0.2510 = 0.7490, \mathrm{P} < 0.05.$$

The rank correlation between the Scopus and WoS databases based on the Hirsch index is significant at the 5% level.

From the data presented in *Table 1*, it is evident that the top three leaders in terms of the h-index are as follows:

1. James J. Heckman,
2. Joseph E. Stiglitz,
3. Elinor Ostrom.

Table 2 displays the results of the calculation of the rank correlation coefficient between the citation indices of Nobel Prize laureates within the same sample.

Table 1. An example of calculating the rank correlation coefficient of Charles Spearman of the leading Nobel laureates on the h index

Таблица 1. Пример расчета коэффициента ранговой корреляции Ч. Спирмена ведущих лауреатов Нобелевской премии по h-индексу

Author	R_{HS}	R_{HW}	dx	dy	$r_{dx} - r_{dy}$	d^2
James J. Heckman	84	93	1	1	0	1
Daniel Kahneman	82	46	2	11.5	-9.5	90.25
Elinor Ostrom	78	60	3	6	-3	9
Joseph E. Stiglitz	75	84	4	3	1	1
Herbert A. Simon	71	35	5	15	-10	100
Jean Trole	70	81	6	4	2	4
Clive W.J. Granger	61	60	7	6	1	1
Robert F. Engle	60	59	8	8	0	0
Eugene F. Fama	55	87	9	2	7	49
Richard H. Taler	49	60	10	6	4	16
Paul Krugman	46	37	11	14	-3	9
Esther Duflo	46	46	12	11.5	0.5	0.25
Kenneth J. Arrow	45	54	13	9	4	16
Robert E. Lucas Jr.	32	50	14	10	4	16
Robert M. Slow	27	38	15	13	2	4
Robert C. Merton	26	31	16	16	0	0
Douglass C. North	24	27	17	17	0	0
Harry M. Markowitz	19	21	18	19	-1	1
Ronald H. Coase	15	26	19	18	1	1
Myron S. Scholes	10	17	20	20	0	0

Table 2. Rank correlation between citation indexes for Scopus and WoS databases

Таблица 2. Ранговая корреляция между индексами цитируемости по базам данных Scopus и WoS

Author	R_{IS}	R_{IW}	dx	dy	$r_{dx} - r_{dy}$	d^2
Daniel Kahneman	84137	56327	1	2	-1	1
Elinor Ostrom	55523	27700	2	8	-6	36
Eugene F. Fama	45371	69412	3	1	2	4
Herbert A. Simon	38466	17673	4	14	-10	100
James J. Heckman	33541	47381	5	3	2	4
Richard H. Taler	27956	32738	6	7	-1	1
Clive W.J. Granger	25740	36187	7	6	1	1
Joseph E. Stiglitz	25417	39299	8	5	3	9
Jean Tirole	25160	27283	9	9	0	0
Robert F. Engle	24647	40808	10	4	6	36
Robert E. Lucas Jr	19282	25744	11	10	1	1
Paul Krugman	19012	15518	12	16	-4	16
Robert C. Merton	16637	22988	13	11	2	4
Kenneth J. Arrow	16130	21840	14	12	2	4
Myron S. Scholes	15146	13461	15	17	-2	4
Esther Duflo	14891	13058	16	18	-2	4
Harry M. Markowitz	13313	12380	17	19	-2	4
Ronald H. Coase	12560	20115	18	13	5	25
Robert M. Slow	11734	17219	19	15	4	16
Douglass C. North	11295	10246	20	20	0	0

The Spearman's rank correlation coefficient is calculated using the following formula:

$$R_{ISW} = 1 - 6\sum\frac{d^2}{N(N^2-1)} = 1 - 0.2030 = \\ = 0.7970, \mathrm{P} < 0.05.$$

The rank correlation based on the citation indices of the Scopus and WoS databases is significant at the 5% level.

From *Table 2,* it can be observed that the top three leaders in terms of citation indices are as follows:

1. Daniel Kahneman,
2. Eugene F. Fama,
3. James J. Heckman.

The statistical analysis, based on the calculation of rank correlation coefficients between two international scientometric databases *(Table 1* and *Table 2)* supported by private companies from the USA and the Netherlands, indicates that the rankings of the laureates vary even within the studied period and among the leaders according to widely recognized indices. At the same time, this contradiction can be resolved by generalizing independent characteristics and developing a weighted integral normalized ranking, the methodology for which is presented below.

Calculation of the integral rating of laureates and discussion of the results

The ratings of Nobel Prize laureates in Economic Sciences have changed over a fifty-year period under the influence of numerous factors. For any selected time interval, they can be analyzed dynamically. The paradox of scientometrics, which lies in the lack of agreement between results obtained from international scientometric databases based on the Hirsch index and citation index, can be resolved as follows. To calculate the normalized index that integrates the h-index and citation index, the following formula should be used:

$$R_{\Sigma} = ((R_{HS} + R_{HW} + R_{IS} + R_{IW}))/4$$

where R_{HS} represents the laureate's ranking based on the h-index in the Scopus database,

R_{HW} denotes the laureate's ranking based on the h-index in the WoS database,

R_{IS} indicates the laureate's ranking based on the citation index in the Scopus database,

R_{IW} refers to the laureate's ranking based on the citation index in the WoS database,

R_{Σ} is the integral ranking that takes into account both the Hirsch indices and citation indices from the two databases (an example of the calculation is provided in *table 3).*

The list of the top three laureates of the Nobel Prize in Economic Sciences over a 50-year period, based on the integral ranking of authority and citation, is as follows:

1. James J. Heckman,
2. Eugene F. Fama,
3. Daniel Kahneman.

As can be seen from the table defining the integral ranking, utilizing the Scopus and WoS databases for citation indices is more accurate in ranking compared to using data based on the Hirsch index. The individual most likely to enter the top 10, with a consistent increase in citations over the 50-year period, is Kenneth J. Arrow, who was recognized alongside John R. Hicks for their "innovative contributions to the theory of general equilibrium and welfare theory" (1972 award).

One of the challenges facing international network collaboration is the limited number of articles authored by Russian writers in the international databases Scopus and Wo S. It effectively reduces the chances of winning the Nobel Prize in Economics to nearly zero. It is unrealistic to expect that any journal from Elsevier, Wiley, or Springer will accept an article containing politically polarizing criticism; however, enhancing academic visibility, which includes English-language metadata, international co-authorship, and open scientometrics, remains a crucial factor for increasing citation rates. To address the paradox of the conflict of interest between private companies and competing scientific policies of states, there is an urgent need to establish a coordinating international body that will facilitate the creation of a unified intergovernmental scientometric database, integrating both foreign private

Table 3. Calculation of the integral rating of the credibility and citation of the Nobel Prize laureates in Economic Sciences

Таблица 3. Вычисление интегрального рейтинга авторитетности и цитируемости лауреатов Нобелевской премии по экономическим наукам

Author	R_{HS}	R_{HW}	R_{IS}	R_{IW}	R_{Σ}
James J. Heckman	5	3	1	1	2.50
Eugene F. Fama	3	1	9	2	3.75
Daniel Kahneman	1	2	2	11.5	4.12
Elinor Ostrom	2	8	3	6	4.75
Joseph E. Stiglitz	8	5	4	3	5.00
Clive W.J. Granger	7	6	7	6	6.50
Jean Tirole	9	9	6	4	7.00
Richard H. Taler	6	7	10	6	7.25
Robert F. Engle	10	4	8	8	7.50
Herbert A. Simon	4	14	5	15	9.50
Kenneth J. Arrow	14	12	9	4	9.75
Robert E. Lucas Jr.	11	10	14	10	11.25
Paul Krugman	12	16	11	14	13.25
Robert C. Merton	13	11	16	16	14.00
Esther Duflo	16	18	12	11.5	14.37
Robert M. Slow	19	15	15	13	15.50
Ronald H. Coase	18	13	19	18	17.00
Myron S. Scholes	15	17	20	20	18.00
Harry M. Markowitz	17	19	18	19	18.25
Douglass C. North	20	20	17	17	18.50

and public platforms across various fields of scientific research and leading scientific journals. Patent databases and software product databases continue to pose a separate issue, necessitating further scientific investigation (Spasennikov et al., 2020).

The synthesis of statistical results from the perspective of practical utility and novelty indicates that many studies possess an interdisciplinary nature and may pertain to multiple fields simultaneously, reflecting a trend towards the integration of economic approaches. An increase in the number of publications is likely, and consequently, new nominations, including those related to the application of artificial intelligence in geoeconomic modeling (Spasennikov & Morozova, 2020). The proposed methodology for determining the integral normalized ranking of economist-scientists who are Nobel laureates, based on data from Scopus and WoS, can be utilized to assess the popularity of research directions in RINC and to identify promising interdisciplinary topics for collaboration among Russian researchers. In this context, the task of incorporating leading Russian economic journals into existing international scientometric databases remains relevant.

CONCLUSION

In summarizing the conducted research, the following conclusions can be drawn:

1. The statistical analysis of awards and the calculation of the normalized integral rating of Nobel Prize laureates in Economic Sciences have allowed for the examination of two primary scientometric paradoxes: the first is related to the discrepancies in the ranking positions of laureates based on the h-index and citation index, while the second pertains

to the exceedingly low representation of works by Russian economists in the international scientometric databases WoS and Scopus. The existing organizational contradictions can be resolved by employing the developed methodology for calculating the integral normalized rating, taking into account the Hirsch index and citation index, and potentially in the future, through the establishment of a unified international database by integrating into a single scientometric platform and including not only English-language publications but also leading scientific journals from Russia and other countries.

2. A correlation has been identified between the h-index and citation indices from the international databases WoS (Clarivate platform, formerly Thomson Reuters; USA) and Scopus – the abstract database of Elsevier (Netherlands). Normalized citation indices more accurately reflect the effectiveness of scientific activity, although they are complex to compute/verify. When developing scientometric indices, it is fundamentally important to consider the form of publication and source neutrality (article/book/patent) provided that references are indexed in WoS or Scopus. The paradoxes of international databases are linked to conflicts of interest between countries and private companies that own scientometric platforms. The integral normalized rating has been calculated in this article based on data from WoS and Scopus over a fifty-year period (1970–2020). Taking into account the increase in citations, it can be refined and supplemented with information about Nobel Prize winners for subsequent time intervals.

3. The behavior of scientists and the effectiveness of research institutions in economic studies are linked to the creation of new results. Scientific activity of researchers involves obtaining original outcomes, and its significance and depth should be assessed not by bureaucrats, but by highly qualified experts based on substantive criteria, while scientometric indicators merely quantitatively reflect publication activity, which is not always related to the content of scientific inquiry. The question of what causes the high citation rates of Nobel Prize winners in economics is connected not so much to the scientific value of their research for humanity, but rather to the effect of informational and reputational influence on readers of journals, educators, and researchers, as well as the media, which shape the high reputational status and public recognition of Nobel laureates. In this context, it is deemed necessary to promote Russian journals in international scientometric databases to familiarize the foreign scientific community with the articles of leading researchers.

Acknowledgements/ Благодарности

Выражаю благодарность за помощь в сборе исходных данных по индексам цитируемости в базах данных и первичной обработке статистической информации научному сотруднику БГТУ Андросову Кириллу Юрьевичу и аспиранту кафедры компьютерных технологий и систем Логвинову Дмитрию Владимировичу.

Отдельную благодарность выражаю профессору Сухареву Олегу Сергеевичу за ценные замечания и пожелания в процессе корректировки рукописи статьи.

The author expresses sincere gratitude to Kirill Yuryevich Androsov, Research Fellow at BSTU, and Dmitry Vladimirovich Logvinov, a postgraduate student of the Department of Computer Technologies and Systems, for their assistance in collecting source data on citation indices from databases and in the initial processing of statistical information.

Special thanks are extended to Professor Oleg Sergeyevich Sukharev for his valuable comments and suggestions during the revision of the manuscript.

Competing Interests/ Конкурирующие интересы

Автор заявляет об отсутствии конфликта интересов. The author declares no conflict of interest.

References / Список источников

1. Авдашева, С.Б., & Шаститко, А.Е. (2015). Нобелевская премия по экономике-2014: Жан Тироль. *Вопросы экономики*, (1), 5–21. EDN: THMZZV, https://doi.org/10.32609/0042-8736-2015-1-5-21
   Avdasheva, S.B., & Shastitko, A.E. (2015). Nobel memorial prize in economics-2014: Jean Tirole. *Voprosy Ekonomiki*, (1), 5–21. EDN: THMZZV, https://doi.org/10.32609/0042-8736-2015-1-5-21 (in Russian)
2. Аджемоглу, Д., & Робинсон Дж. (2016). Почему одни страны богатые, а другие бедные. Происхождение власти, процветания и нищеты. АСТ.
   Acemoglu, D., & Robinson, J.A. (2016). *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. AST Publishers. (Original work published 2012). (in Russian)
3. Алескеров, Ф.Т. (2005). Роберт Ауман и Томас Шеллинг – Нобелевские лауреаты по экономике 2005 г. *Экономический журнал Высшей школы экономики*, 9(4), 566–572. EDN: YWGLAT.
   Aleskerov, F.T. (2005). Robert Aumann and Thomas Schelling – Nobel Laureates in Economics 2005. *HSE Economic Journal*, 9(4), 566–572. EDN: YWGLAT (in Russian)
4. Балашова, Е. (2005). Финн Кюдланд и Эдвард Прескотт: движущие силы экономических циклов (Нобелевская премия 2004 г. по экономике). *Вопросы экономики*, (1), 133–143. EDN: MUMZUP, https://doi.org/10.32609/0042-8736-2005-1-133-143
   Balashova, E. (2005). Finn Kydland and Edward Prescott: Driving Forces behind Economic Cycles (2004 Nobel Prize in Economics). *Voprosy Ekonomiki*, (1), 133–143. EDN: MUMZUP, https://doi.org/10.32609/0042-8736-2005-1-133-143 (in Russian)
5. Воронов, Ю.П. (2024a). Нобелевские лауреаты по экономике: в 2 т. Т. 1: XX век (1969–2000). ИНФРА-М.
   Voronov, Yu.P. (2024a). *Nobel laureates in economics: In 2 vols. Vol. 1: 20th century (1969–2000)*. INFRA-M. (in Russian)
6. Воронов Ю.П. (2024b). Нобелевские лауреаты по экономике: в 2 т. Т. 2: XXI век (2001–2023). ИНФРА-М.
   Voronov, Yu.P. (2024b). *Nobel laureates in economics: In 2 vols. Vol. 2: 21st century (2001–2023)*. INFRA-M. (in Russian)
7. Гаврилова, Е.В, Ушаков, Д.В., & Юревич, А.В. (2016). «Местники» и «космополиты»: к вопросу о продуктивности ученых. *Социологические исследования*, 9(389), 105–116. EDN: WMAELP
   Gavrilova, E.V., Ushakov, D.V., & Yurevich, A.V. (2016). "Native scientists" and "citizens of the world": regarding the scientists' productivity. *Sociological Studies*, 9(389), 105–116. EDN: WMAELP (in Russian)
8. Гельман, С.В., & Шпренгер, К. (2014). Сколько должны стоить финансовые активы? Нобелевские премии по экономике 2013 г. *Экономический журнал Высшей школы экономики*, 18(1), 160–172. EDN: SANDMD
   Gelman, S.V., & Shprenger, K. (2014). What should be the price of assets? Nobel prizes in economics 2013. *HSE Economic Journal*, 18(1), 160–172. EDN: SANDMD (in Russian)
9. Герасименко, П.В. (2024). Общий подход ранжирования публикационной активности ученых с помощью индексов значимости журналов и источников их цитирований, размещенных в базах данных: РИНЦ, WoS, Scopus. *Основы экономики, управления и права*, 3(42), 54–62, EDN: MLVTEM, https://doi.org/10.51608/23058641_2024_3_54
   Gerasimenko, P.V. (2024). Universal approach of ranking of scientists 'publishing activity by means of generalized index of significance of publications and sources of their citations placed in databases: RSCI, WoS and Scopus. *Economy, governance and lave basis*, 3(42), 54–62. EDN: MLVTEM, https://doi.org/10.51608/23058641_2024_3_54 (in Russian)
10. Канторович, Л.В. (2011). *Математико-экономические работы*. Наука.
    Kantorovich, L.V. (2011). *Mathematical and economic works*. Nauka. (in Russian)
11. Клеева, Л.П. (2025). Современные тенденции развития науки: проблемы междисциплинарности. *Экономика науки*, 11(2), 29–40. EDN: CMORSH
    Kleeva, L.P. (2025). Current trends in the development of science: problems of interdisciplinarity. *Economics of Science*, 11(2), 29–40. EDN: CMORSH (in Russian)
12. Кузьминов, Я., & Юдкевич М. (2010). За пределами рынка: институты управления трансакциями в сложном мире (Нобелевская премия по экономике 2009 года – Оливер Уильямсон и Элинор Остром). *Вопросы экономики*, (1), 82–98. EDN KYJRQN, https://doi.org/10.32609/0042-8736-2010-1-82-98
    Kuzminov, Ya., & Yudkevich, M. (2010). Beyond Market: Institutions of Governance in the Complex World (Nobel Memorial Prize in Economics 2009 – Oliver Williamson and Elinor Ostrom). *Voprosy Ekonomiki*, (1), 82–98. EDN: KYJRQN, https://doi.org/10.32609/0042-8736-2010-1-82-98 (in Russian)
13. Лебедев, А.Б. (2018). Нобелевские лауреаты в области экономической политики. *Актуальные проблемы экономики и управления*, 1(17), 159–176. EDN: YUTXDU
    Lebedev, A.B. (2018). The Nobel prize laureates in economic policy. *Actual problems of economics and management*, 1(17), 159–176. EDN: YUTXDU (in Russian)

14. Морев, Д.А. (2010). Амартия Сен и теория общественного выбора. *Вестник Московского университета. Серия 6: Экономика*, (2), 3–11. EDN: MPWALJ
Morev, D.A. (2010). Amartya Sen and his social choice theory. *Lomonosov Economics Journal*, (2), 3–11. EDN: MPWALJ (in Russian)

15. Полянин, А.Д. (2014). Недостатки индексов цитируемости и Хирша и использование других наукометрических показателей. *Математическое моделирование и численные методы,* 1(1), 131–144. EDN STHGCR
Polyanin, A.D. (2014). Disadvantages of citation index and Hirsch and using other scientometrics. *Mathematical Modeling and Numerical Methods*, 1(1), 131–144. EDN: STHGCR (in Russian)

16. Пирожков, Г.П., & Пирожкова, И.Г. (2018) История Международного информационного Нобелевского центра как движение от идеи к результату. *Всеобщая история*, (2), 3–8. EDN XQMUVN
Pirozhkov, G.P., & Pirozhkova, I.G. (2018). History of international information Nobel Centre as movement from ideas to results. *General History*, (2), 3–8. EDN: XQMUVN (in Russian)

17. Рогов, С.М. (2010). Россия должна стать научной сверхдержавой. *Вестник Российской академии наук*, 80(7), 579–590. EDN: NUAKUV
Rogov, S.M. (2010). Russia must become a scientific superpower. *Herald of the Russian Academy of Sciences*, 80(4), 313–323. EDN: MXKOXH, https://doi.org/10.1134/S1019331610040015 (in Russian)

18. Сёмин, А.Н. (2021). Лауреаты Нобелевской премии по экономике (вклад в науку и почтовые миниатюры): монография. «КОЛ ЛОК». EDN: TFAKPE
Syomin, A.N. (2021). Nobel Prize laureates in Economics (contribution to science and postal miniatures): monograph. KOL LOK Publishing House. EDN: TFAKPE (in Russian)

19. Соколов, М.М., & Чечик, Е.А. (2022) Академические репутации российских экономистов и их наукометрические оценки. *Вопросы экономики*, (11),117–135. EDN: HJJIUA, https://doi.org/10.32609/0042-8736-2022-11-117-135
Sokolov, M.M., & Chechik, E.A. (2022). Academic reputations of Russian economists and their scientometric estimates. *Voprosy Ekonomiki*, (11), 117–135. EDN: HJJIUA, https://doi.org/10.32609/0042-8736-2022-11-117-135 (in Russian)

20. Спасенников, В.В., & Андросов, К.Ю. (2021). Наукометрические индикаторы и особенности оценки эффективности научной деятельности ученых с использованием индексов цитирования (обзор отечественных и зарубежных исследований). *Эргодизайн*, 3(13), 219–232. EDN: PIVVDC, https://doi.org/10.30987/2658-4026-2021-3-219-232
Spasennikov, V.V., & Androsov, K.Yu. (2021). Scientometric indicators and features of evaluating the scholars'scientific activity effectiveness using citation indices (review of domestic and foreign studies). *Ergodesign*, 3(13), 219–232. EDN: PIVVDC, https://doi.org/10.30987/2658-4026-2021-3-219-232 (in Russian)

21. Спасенников, В.В. (2025). Учёт влияния факторов инвестиционного и потребительского поведения индивидов при выработке решений. *Эргодизайн*, 1(27), 44–57. EDN: NJYMCW, https://doi.org/10.30987/2658-4026-2025-1-44-57.
Spasennikov, V.V. (2025). Considering the influence of individuals' investment and consumer behaviour factors when making decisions. *Ergodesign*, 1(27), 44–57. EDN: NJYMCW, https://doi.org/10.30987/2658-4026-2025-1-44-57 (in Russian)

22. Тютюнник, В.М., & Самхарадзе Г.Т. (2023). Наукометрические анализы выдвижений кандидатов на Нобелевские премии. Продуктивность и эффективность номинирования лауреатами на Нобелевские премии по физике и химии (1901–1950). *История науки и техники*, (10), 12–27. EDN: FYLWET, https://doi.org/10.25791/intstg.10.2023.1444
Tyutyunnik, V.M., & Samharadze, G.T. (2023). Scientometric analyses of nominations for the Nobel prizes. productivity and effectiveness of nominations by laureates for Nobel prizes in physics and chemistry (1901–1950). *History of Science and Engineering*, (10), 12–27. EDN: FYLWET, https://doi.org/10.25791/intstg.10.2023.1444 (in Russian)

23. Шибаршина, С.В. (2019). Научные коммуникации и коллаборации в Сети как возможные зоны обмена. *Социология науки и технологий*, 10(2), 75–92. EDN: OFDGFP, https://doi.org/10.24411/2079-0910-2019-12004
Shibarshina, S.V. (2019). Online scientific communications and collaborations as possible trading zones. *Sociology of Science and Technology*, 10(2), 75–92. EDN: OFDGFP, https://doi.org/10.24411/2079-0910-2019-12004 (in Russian)

24. Acemoglu, D. (2005). Constitutions, Politics, and Economics: A Review Essay on Persson and Tabellini's The Economic Effects of Constitutions. *Journal of Economic Literature*, 43(4), 1025–1048. https://doi.org/10.1257/002205105775362069

25. Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571. https://doi.org/10.1093/jopart/mum032

26. Chigarev, B.N. (2024). A proof-of-concept methodology for identifying topical scientific issues in new publications whose citations have not yet been established. *Information and Innovations*, 19(3), 46–79. EDN: OHJWSR, https://doi.org/10.31432/1994-2443-2024-19-3-46-79
27. Hirsch, J.E. (2005). An index to quantify an individual's scientific research output. *Proceedings of National Academy of Sciences of the USA*, 102(46), 569–572. https://doi.org/10.1073/pnas.0507655102
28. Liu, J.S., & Lu, Y.Y. Lu. (2012). An integrated approach for main path analysis: Development of the Hirsch index as an example. *Journal of the American Society for Information Science and Technology,* 63(3), 528–542. https://doi.org/10.1002/asi.21692
29. Maltseva, D., & Batagelj, V. (2019). Social network analysis as a field of invasions: bibliographic approach to study SNA development. *Scientometrics*, 121, 1085–1128. https://doi.org/10.1007/s11192–019–03193-x
30. Murray, A.J., Dixon, H., & Jonhson, W. (2013). Spearman's Law of diminishing returns: a statistical artifact? *Intelligence*, 41(5), 439–451. https://doi.org/10.1016/j.intell.2013.06.007
31. Spasennikov, V., & Morozova, A. (2020). Accreditation examination of developing professional competencies at the university: a mathematical model. In: Solovev, D.B., Savaley, V.V., Bekker, A.T., Petukhov, V.I. (eds). *Proceedings of the International Science and Technology Conference "FarEastCon 2019". Smart Innovation, Systems and Technologies*, 172, 223–228. EDN: UISUVQ, https://doi.org/10.1007/978-981-15-2244-4_19
32. Spasennikov, V., Androsov, K., & Golubeva, G. (2020). Ergonomic Factors in Patenting Computer Systems for Personnel's Selection and Training. *CEUR Workshop Proceedings*, 2744, short51–1-short51–8. EDN: IFFURV, https://doi.org/10.51130/graphicon-2020-2-4-51
33. Wagner, C., & Jonkers, K. (2017). Open countries have strong science. *Nature*, 550, 32–33. https://doi.org/10.1038/550032a
34. Zhou, L., Yue, M., Ma, T., & Li, Ch. (2025). The impact of patent citation on the citation performance of academic papers. *Scientometrics*, 130, 4221–4248. https://doi.org/10.1007/s11192-025-05400-4

Author

Valery V. Spasennikov – Doctor of Psychology, Professor, Professor of the Department of Humanities and Social Sciences of BSTU; Scopus Author ID: 6506677389; ResearcherID Web of Science: G-2314–2016; ORCID: 0000-0002-4378-3426 (7, Boulevard 50 let Oktyabrya, Bryansk, 241035, Russian Federation; e-mail: spas1956@mail.ru).

Информация об авторе

Спасенников Валерий Валентинович – доктор психологических наук, профессор, профессор кафедры Гуманитарные и социальные дисциплины БГТУ; SPIN-код РИНЦ: 1524–9224; Scopus Author ID: 6506677389; ResearcherID Web of Science: G-2314–2016; ORCID: 0000-0002-4378-3426 (Российская Федерация, 241035, г. Брянск, Бульвар 50 лет октября, 7; e-mail: spas1956@mail.ru).

Поступила в редакцию (Received) 25.10.2025
Поступила после рецензирования (Revised) 08.12.2025
Принята к публикации (Accepted) 17.12.2025