

отправить их на обработку, либо представить на бумажном носителе в налоговые органы.

ИС УКМ (информационная система «Контроль над производством и оборотом алкогольной продукции с использованием учётно-контрольных марок с голографическим защитным элементом») предназначена для автоматизации функций, выполняемых сотрудниками Налогового комитета МФ РК, в сфере контроля над производством и оборотом алкогольной продукции, на основе применения современных информационных технологий. Основной целью ИС УКМ является улучшение функций администрирования и совершенствование контроля над оборотом этилового спирта и алкогольной продукции.

ИС Акциз – информационная система «Контроль производства и оборота подакцизной продукции и отдельных видов нефтепродуктов». Функции ИС Акциз: учет налоговых платежей, обработка накладных, прием и обработка отчетности, построение отчетов, взаимодействие с внешними системами, НСИ, доступ через веб-интерфейс, администрирование.

ИС МОП (Информационная система мониторинга крупных предприятий (плательщиков)) позволяет принимать налоговую отчетность в едином электронном формате, проводить системный анализ данных и осуществлять контроль за исполнением налогоплательщиками налоговых обязательств. Данная система является одной из форм налогового контроля и осуществляется путем наблюдения за финансово-хозяйственной деятельностью налогоплательщиков в электронном виде.

Для ускорения обслуживания налогоплательщиков и создания для них современных условий, в настоящее время, во всех налоговых управлениях открыты операционные залы по приему и обработке налоговой отчетности. Здесь действует принцип одного окна, когда налогоплательщик может сдать налоговую отчетность не конкретному инспектору, а любому, что исключает создание очередей и элементы коррупции.

В качестве «электронного» налогоплательщика может зарегистрироваться любое физическое или юридическое лицо, прошедшее государственную регистрацию в качестве налогоплательщика РК.

Анализируя состояние автоматизации налоговых органов в РК, можно сделать выводы, что необходима модернизация данных систем по следующим направлениям:

- всем налоговым органам провести программу интеграции и централизации информационных систем, что позволяет создать качественные хранилища данных;
- расширение системы телекоммуникации, что позволит снизить затраты на обработку и передачу налоговой информации;
- выполнение налоговыми органами программы консолидации информационных систем, с целью уменьшения затрат, связанных с их развитием и обслуживанием;
- внедрение налоговыми органами облачных технологий управления ИТ инфраструктурой с целью оптимизации и сокращения затрат;
- применение мобильных устройств для доступа к данным;
- развитие электронных каналов обслуживания и сервисов, что удешевляет обслуживание налогоплательщиков и снижает роль «человеческого фактора» в работе налоговых органов.

Внедрение информационных систем в налоговых органах, кроме повышения прозрачности работы, позволило дисциплинировать налогоплательщиков в части неправомерного завышения затрат; установить схемы уклонения от уплаты налогов налогоплательщиков; дополнительно начислять налоги. Все принимаемые меры по автоматизации информационных систем направлены на обеспечение прозрачности налоговой системы. А это увеличивает возможности контроля для налоговых органов и дает преимущества налогоплательщикам в становлении их бизнеса.

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## COMPARATIVE ANALYSIS OF THE PUBLICATION ACTIVITY LEVEL OF THE RUSSIAN FEDERAL AND NATIONAL RESEARCH UNIVERSITIES CONDUCTED IN RELIANCE ON WEB OF SCIENCE AND SCOPUS DATABASES

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**Abstract:** The paper presents comparative analysis of publication activity level of 31 federal and national research universities of Russia based on Web of Science and Scopus databases for the period from 2006 to 2011. This analysis pro-

vided the opportunity to identify three groups of universities according to publication activity increase intervals at the period concerned; to find out annual correlation ratios between the publication activity data of the Russian federal and national research universities received from Web of Science and Scopus databases; to carry out clustering of the Russian federal and national research universities on the basis of the distribution of their publication activity for the year 2011 according to two databases under research.

**Keywords:** comparative analysis, publication activity, Web of Science, Scopus, clustering, Russian university

## 1. Introduction

There has been an upsurge in attention of the Russian government to bibliometric statistics in recent years as the higher school reform aimed at the increase of its global competitiveness required the establishment of elite federal and national research universities and global competitiveness of the latter depends directly on the publishing activity level of their researchers which is monitored in Web of Science and Scopus databases.

On 7<sup>th</sup> May, 2012 the President of Russia Vladimir Putin signed the Decree “On measures for implementation of the state policy in the field of education and science” which, in particular, touches upon the increase of competitiveness of the Russian higher education institutions and how to make five Russian universities be in the first TOP-100 of the leading world universities according to the World University Rankings by 2020 [11]. In pursuance of this Decree the Federal Contest “Global University” has been carried out since 2014 in order to support the Russian leading universities on their way to the TOP-100 of the greatest World University Rankings. As bibliometric indices are the most important indicators of such Rankings, it is necessary to monitor the publication activity level and citation ratio of researchers of the Russian leading universities on an ongoing basis.

The works of [2; 8-10] are devoted to the issue of the positioning of the Russian federal and national research universities in the World Rankings, and the first work deals with the influence of bibliometric indicators on the Russian University Rankings.

A number of works is devoted to the development of mechanisms for stimulation of universities’ publication activity level and assessment of their impact on such activity with the Russian universities taken as an example [3-5].

## 2. Methods.

In this research we will study the dynamics of the publication activity level of the Russian federal and national research universities for the period from 2006 to 2011 according to Web of Science and Scopus databases.

For this purpose there have been chosen 31 federal and national research universities which had a significant number of annual publications in the databases under research. Initial data according to Web of Science database for the period from 2006 to 2011 was published in the work of [2], and the data for 2011 was shown by V.A. Marsukova as well. We collected the initial data according to Scopus database at the end of 2013 – in the beginning of 2014.

When conducting the comparative analysis of the publication activity level of the federal and national research universities according to the databases under research, we used methods of correlation and cluster analysis as well as classification method.

## 3. Results and Discussion.

Publication dynamics of the Russian federal and national research universities included in Web of Science and Scopus databases for the period from 2006 to 2011 were constructed (initial data is not presented). This includes the calculation of increase (decrease) of these publications for the period concerned. All universities are ranged in descending order of quantity of publications included in Web of Science database in 2011. There are 5 universities which show that quantity of publications according to at least 1 database increased more than 4 times: The Higher School of Economics, Siberian Federal University, Moscow State University of Civil Engineering, Perm State Technical University, and Samara State Aerospace University.

There are 12 universities with increase rate of 2 to 4 times: Saint Petersburg Mineral Resources University, Novosibirsk State University, Tomsk Polytechnic University, Far Eastern Federal University, Moscow Institute of Physics and Technology, South Ural State University, Tomsk State University, Saint Petersburg State University of Information Technologies, Mechanics and Optics, Irkutsk State University, N. Bauman Moscow State Technical University, Moscow Institute for Steel and Alloys and B.N. Yeltsin Ural Federal University. This group above includes leaders, average performers and outsiders).

All the other universities with publication activity growth rate lower than 2 fall into the third group. These are the remaining 14 universities which we will not specify here.

In general, correlation ratios between publication activity level data according to Web of Science and Scopus databases obtained from all universities for different years turned out to be very high (Table).

Table

**Correlation ratios between publication activity data of the federal and national research universities calculated on the basis of Web of Science and Scopus databases**

Year	2006	2007	2008	2009	2010	2011
Correlation coefficients	0.92	0.91	0.95	0.96	0.96	0.89

A little worse correlation in 2011 is connected, in our opinion, with the fact that not all data for the year 2011 had been added to profiles of universities at the time of data capturing. The diagrams below (Fig. 1 and 2) show the distribution of publication activity level of universities for the year 2011

according to Web of Science (Fig. 1) and Scopus (Fig. 2) databases. They provide the opportunity to select clusters of universities according to sharp inflexions in distribution curves (one of the simplest methods of data clustering).

1. Novosibirsk State University 2.B.N.Yeltsin Ural Federal University 3.Moscow Physics Engineering Institute 4.Tomsk Polytechnic University 5.Kazan Federal University 6.Moscow Institute of Physics and Technology 7.Saint Petersburg State Polytechnical University 8.Moscow Institute for Steel and Alloys 9. Tomsk State University 10.Southern Federal University 11.N.I. Lobachevsky Nizhniy Novgorod State University 12.Far Eastern Federal University 13.Chernyshevsky Saratov State University 14.N. Bauman Moscow State Technical University 15.Siberian Federal University 16.The Higher School of Economics 17.Belgorod State University 18.Moscow Power Engineering Institute 19.South Ural State University 20.Kazan National Research Technological University 21.Moscow State Aviation Institute 22.Samara State Aerospace University 23.Perm State University 24.N.I. Pirogov Russian State Medical University 25.Perm Polytechnic University 26.Saint Petersburg State University of Information Technologies. Mechanics and Optics 27.Moscow University of Electronic Technology 28.Mordovia State University 29.Irkutsk State University 30.Saint Petersburg Mineral Resources University 31.Moscow State University of Civil Engineering

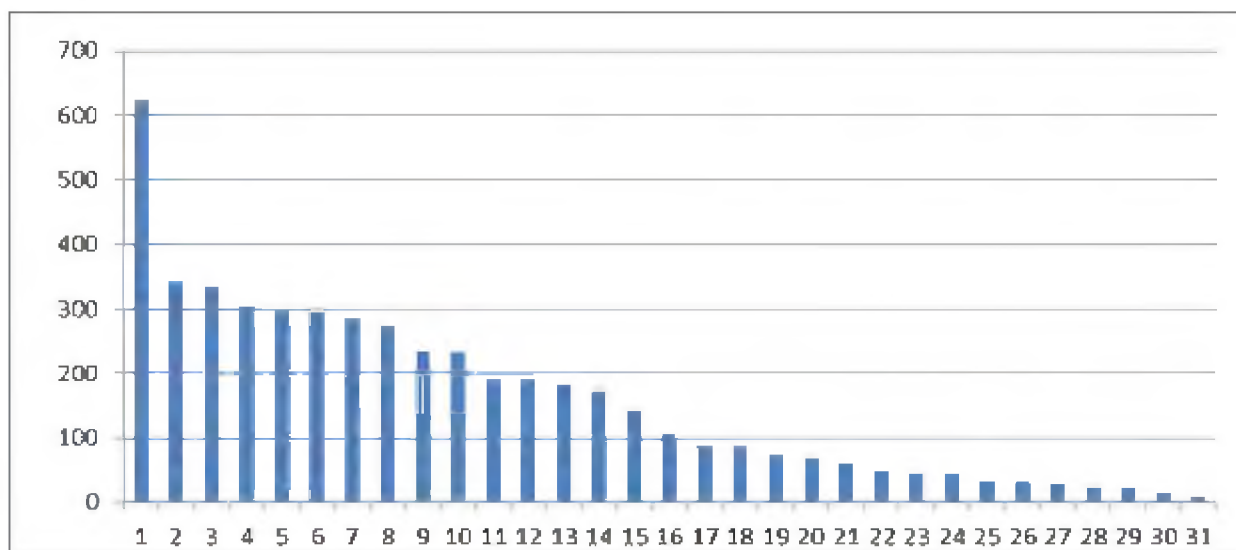


Figure 1. Distribution of publication activity of universities in Web of Science database for the year 2011

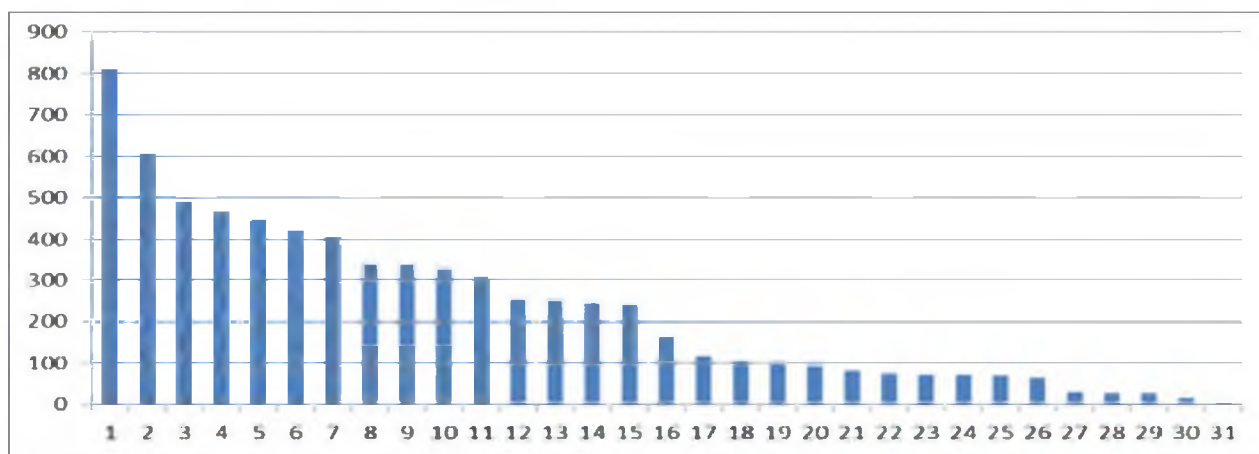


Figure 2. Distribution of publication activity of universities in Scopus database for the year 2011

1.Novosibirsk State University 2.B.N.Yeltsin Ural Federal University 3.Moscow Institute of Physics and Technology 4.Moscow Physics Engineering Institute 5.Southern Federal University 6.N.I. Pirogov Russian State Medical University 7.Kazan Federal University 8.Tomsk State University 9.Saint Petersburg State Polytechnical University 10.N.I. Lobachevsky Nizhniy Novgorod State University 11.Tomsk Polytechnic University 12.N.G. Chernyshevsky Saratov State University 13.Moscow Institute for Steel and Alloys 14.Siberian Federal University 15.Saint Petersburg State University of Information Technologies. Mechanics and Optics 16.N. Bauman Moscow State Technical University 17.Far Eastern Federal University 18.Kazan National Research Technological University 19.Moscow Power Engineering Institute 20.Perm State University 21.The Higher School of Economics 22.Belgorod State University 23.South Ural State University 24.Samara State Aerospace University 25.Moscow State Aviation Institute 26.Perm Polytechnic University 27.Moscow University of Electronic Technology 28.Saint Petersburg Mineral Resources University 29.Mordovia State University 30.Irkutsk State University 31.Moscow State University of Civil Engineering

In the first case (Fig. 1) there is the apparent leader (Novosibirsk State University) with very high publication

activity level. It is followed by a cluster which contains nine leading universities (No.No.2-10). Then there is a small cluster of five universities with the average publication activity level (No.No.11-15). The distribution under consideration is closed by a cluster which contains sixteen underperforming universities with low publishing activity level (No.No.16-31).

In the second case (Fig. 2) we have more complicated distribution in which we can select 6 clusters: cluster 1 – No.No.1.2; cluster 2 – No.No.3-7; cluster 3 – No.No.8-11; cluster 4 – No.No.12-15; cluster 5 – No.No.16-26; cluster 6 – No.No.27-31. If we define clusters on the basis of publication activity level of universities, the first two clusters will have very high publication activity and high publication activity, the publication activity level in the next two clusters will be higher and below the average, the last two clusters will have low level and very low publication activity level.

In general, the cluster which contains sixteen underperforming universities defined on the bases of Web of Science database (Fig. 1) corresponds to the last two clusters (of 16 universities) defined on the bases of Scopus database (Fig. 2).

#### 4. Conclusions.

The comparative analysis of publication activity level of the Russian federal and national research universities conducted in Reliance on Web of Science and Scopus databases provided the opportunity:

- to identify three groups of universities according to publication activity increase intervals at the period concerned;
- to find out annual correlation ratios between the publication activity data of the Russian leading universities received from Web of Science and Scopus databases ;
- to carry out clustering of the Russian leading universities on the basis of the distribution of their publication activity for the year 2011 according to two databases under research.

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