

Bibliographic metrics as performance evaluation measure for Higher Education Institutions in Russia

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Introduction

Since 2006, Russian government made energetic attempts to boost academic performance of the country's universities, to shut down underperforming institutions and to turn the survivors into world-class schools. Since 2012, Russian policies in the higher education sphere were largely directed by the results of the Survey of efficiency of higher education organizations (Monitoring of Efficiency of Educational Organizations) – a set of quantitative performance indicators used to sort efficient from non-efficient organizations. There are also several governmental programs for funding best universities, one of them is “5–top 100” started in 2013. Most of those initiatives include assessment of publication activity.

Searchers showed that this funding programs had positive effects on publication activity (Turko, 2016) and there are also studies about collaborations for most cited papers (Pislyakov, 2014). Those studies mostly focused on successful universities and its specific characteristics. Many universities are closely connected to small number of fields and currently used bibliographic metrics do not consider this difference between publication dynamics across fields (Piro, 2014).

The main purpose of our study to show how representation of universities in different citation systems depends on such factors as:

- public or private;
- localized in a bigger city or a wealthy region;
- nominal profile (based partly on ties to specific fields);
- age;
- ecological situation at a local market for higher education.

Data

The main data used in this paper is obtained from the Efficiency monitoring initiated by the Ministry of Education in Russia which results is available online

(<http://indicators.miccedu.ru/monitoring/>).

For purposes of our study we used data collected from Monitoring of Efficiency 2013-2017 for 822 universities which include (per 100 academic employees):

- Number of citations in Web of Science,
- Number of citations in Scopus,
- Number of citations in Russian Scientific Citation Index,
- Number of publications in Web of Science,
- Number of publications in Scopus,
- Number of publications in Russian Scientific Citation Index.

Additionally, we collected demographic, economic and migration statistics by region, typologies of regional economies from Russian Statistical Agency. We estimated density of authors in the regions using number of registered authors in Russian Scientific Citation Index.

Results

Figure 1 shows that extreme variability exists between different university families. Thus, so-called “classical”, polytechnic and medical universities have higher median number of publications in Web of Science that others, while universities majoring in social and economic sciences, especially ones attached to various ministries have the highest median number of publications in Russian Scientific Citation Index. Differences of a comparable scale exist in other KPIs, such as the amount of research funding, number of students coming abroad, or laboratory spaces. Overall, origins and present institutional attachment of a university to a given “family”, together with other structural factors such as localization in a given region, explain the better part of variance in the university's performance.

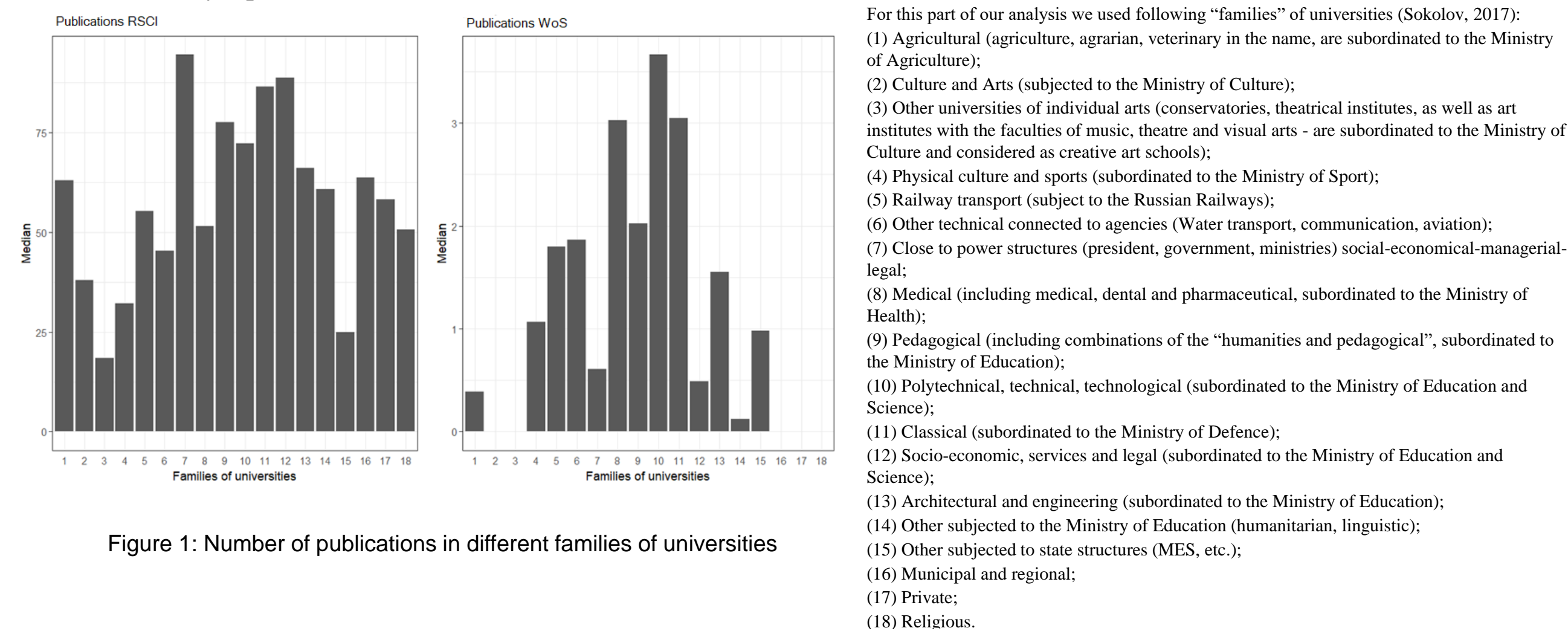


Figure 1: Number of publications in different families of universities

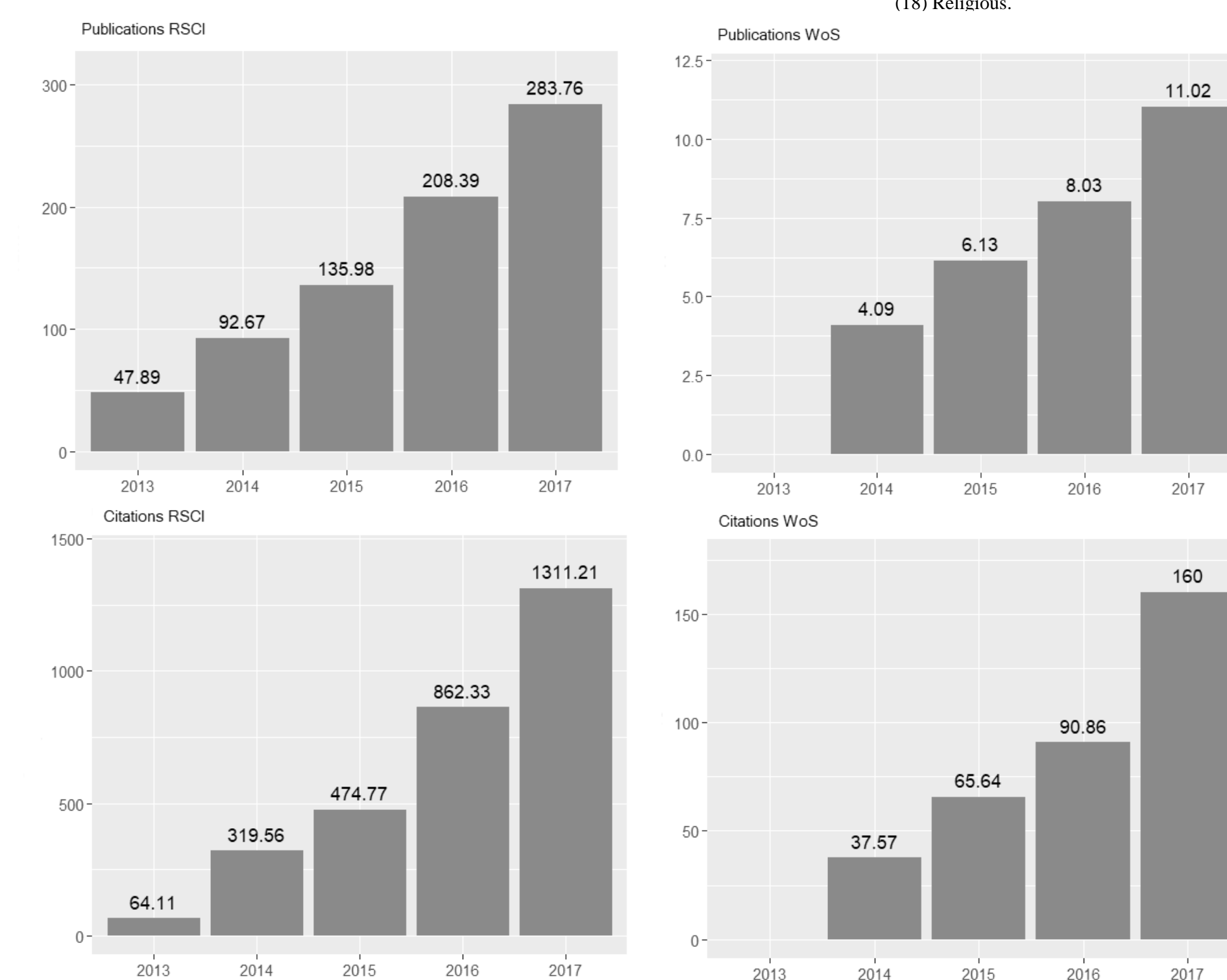


Figure 2: Dynamics of bibliometrics (average number for all population of universities)

As you can see from Figure 2 Russian universities as in many other countries experience publication pressure and are seeking for the easiest way to fulfill new evaluation criteria by producing low quality papers that do not receive international acknowledgment.

Conclusions

Our study shows that facing publication pressures universities have a stable positive trend in number of publications but our data shows that extreme variability of bibliographic metrics exist between different university families. Thus, so-called “classical”, polytechnic and medical universities have higher median number of publication in Web of Science that others, while universities majoring in social and economic sciences, especially ones attached to various ministries have the highest median number of publication in Russian Scientific Citation Index. The results show that the ascriptive variables account for a large share of variance, with families being particularly important.

Overall we see that the number of publications are on the steady rise but the question about quality of papers is still present: “Does the difference between number of papers national citation system comparing to worldwide shows low quality of papers or just reflects on localization and regional interest in most of produced research in Russia ?”

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