

Mapping Higher Education Excellence in the Region: Serbia in Comparative Perspective

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Abstract

This research focuses on the positioning of Serbian higher education and its performance within the regional Balkan context. The research draws on the consistent presence of Serbian universities in international ranking lists, in contrast to the Macedonian higher education sector, which is in evident decline in this regard, with no universities from that sector appearing on high-profile international university rankings. Examining Serbia's higher education system from a regional perspective offers a more nuanced understanding of relative performance among countries facing similar developmental challenges and operating within comparable institutional environments.

The goal of this paper was to provide a regional overview of Serbian higher education through the Academic Ranking of Balkan Universities (ARBU) platform, which uses a citations-only methodology based on Google Scholar citation data. The study used a quantitative approach to assess the performance of 16 Serbian higher education institutions by comparing them with 151 universities from the Balkan region, based on citation counts of their faculty members. It documented their performance across seven academic fields and disciplines and highlighted the output of the top national researchers.

The ARBU findings portray the Serbian higher education system as one of the strongest research systems in the Balkan region, second in aggregate institutional volume, with 2490515 total citations of the University of Belgrade as of 30 June 2025, 4 public universities ranked among the TOP 15 ARBU universities, and 5 researchers among the 25 researchers

with the highest number of citations in the Balkans. A field-by-field analysis of ARBU shows that Serbia's higher education system is not merely "strong overall." It is structurally diverse, with distinct disciplinary clusters.

In summary, the research indicates that Serbia's presence on the international ranking lists is not a mere coincidence but a systemic approach in the scientific and academic fields that strengthens research capacity, internationalization, and institutional governance.

Keywords: higher education, university rankings, academic ranking of Balkan universities (ARBU), Serbia, research performance, Balkan universities

1. Introduction

Global rankings have become a central factor in universities' strategic decision-making and are reshaping academic life through the use of measurable indicators. The emergence of rankings such as the Academic Ranking of World Universities of Shanghai Jiao Tong University (ARWU), the QS World University Rankings, and the Times Higher Education (THE), collectively known as the "Big Three," served as a "wake-up call" for reforms in European education, especially in countries like France and Germany, which began introducing excellence initiatives to improve their global position (Hazelkorn, E., & Ryan, M., 2013). Global university rankings shape the allocation of hundreds of millions of dollars in public funding and private investment (Nassiri-Ansari & McCoy, 2023), with the strong causal relation between ranking outcomes and funding triggering undesired phenomena like adaptation strategies leading to academic conformism and territorial biases that reward universities placed in an advantageous socioeconomic context (Bellantuono *et al.*, 2022).

While the Big Three rankings significantly shape global higher education discourse, they primarily benefit large, research-intensive universities in Western or resource-rich systems. As a result, these rankings are less suitable for smaller or developing economies, such as those in the Balkans. A primary focus of current literature is how regional rankings act as a "buffer" between global elite metrics and localized realities (Umoren & Adeleke, 2025); therefore, recent studies are seeking more regionally appropriate rankings that account for similar contexts (Bojadziev, 2020; Bojadjev *et al.*, 2023).

Building on that premise, Prof. Bojadziev's latest published paper (Bojadziev *et al.*, 2026) analyzes the position of the Macedonian higher education system using data from the Academic Ranking of Balkan Universities (ARBU), which aims to better reflect regional realities by primarily relying on bibliometric data from Google Scholar. The paper highlighted discrepancies among universities in the Balkan region, sparking interest in further exploration of the subject, particularly among higher-ranked universities, including those in the Republic of Serbia.

By applying a similar analytical approach to Serbia's higher education system, this study is expected to have potentially important implications for multiple stakeholder groups. For policymakers, the findings provide empirical evidence to support the design of national

research policies, strategic investment priorities, and performance-based funding mechanisms. For university leaders, the results provide benchmarking evidence that may inform institutional strategic planning, research management, and international collaboration strategies. For researchers, the study contributes to the growing literature on university rankings by providing a framework for future comparative investigations.

This study uses bibliometric indicators as a quantitative approach to evaluating the research performance of Serbian higher education institutions, as they provide standardized, transparent, and comparable evidence of scientific activity and remain reliable, objective proxies for assessing research excellence.

Despite the growing sophistication of ranking methodologies, most existing studies focus on the performance of individual universities or the methodological characteristics of specific ranking systems. This study aims to bridge that research gap by treating a national higher education system as a research ecosystem for assessment. The findings are expected to deepen understanding of regional scientific performance and identify opportunities to strengthen research collaboration and policy coordination.

Therefore, by using ARBU data to situate Serbian higher education, the purpose of this study is to assess:

- a) Where it stands regionally in 2025,
- b) Which are its core universities
- c) Which are the core scientific fields
- d) Who are the top researchers?

2. Literature Review

How national higher education systems are ranked relative to others fosters consistent competitiveness and progress among universities, but also frustration and confusion, especially in small and economically deprived countries. There is a substantial body of academic literature examining international ranking systems and their modalities. At the same time, given the notion that international ranking systems are not “fit for all,” academic research is exploring alternative ranking methods that better capture the positions of national educational systems within regional contexts. To explore the subject thoroughly, this paper will take into account both academic discourses.

2.1 Assessing Quality in Higher Education

Quality assurance (QA) in higher education helps institutions become more flexible and improve their teaching. It is a systematic, ongoing process that aims to improve the quality of higher education by examining the internal procedures of higher education institutions and linking them to changes in society, technology, and institutions. This process is essential for maintaining a culture of excellence. It ensures that teaching and learning methods evolve in

line with the institution's goals and external expectations (UNESCO, 2004; Centrex, 2004). QA systems evaluate many things, including the performance of schools, degree programs, and academic fields. These evaluations often assess the quality of teaching, the amount of research conducted, how the school is run, its outreach initiatives, and how well it follows state rules. Many countries now use Internal Quality Assurance (IQA) as a routine practice. The Quality Assurance system is very important for linking higher education to the job market through initiatives such as graduate tracer studies, employer feedback on curriculum design, and job market analysis (UNESCO, 2018). QA in higher education is the regular checking, evaluation, and improvement of academic programs, institutional effectiveness, and student learning outcomes. It includes evaluations conducted by the institutions themselves and by outside organizations, such as accreditation authorities. These activities are all meant to keep and raise the quality standards in higher education systems (Ricaurte, Bouckaert, & Galan-Muros, 2024).

Assessing quality in higher education remains a major challenge because there is no universally accepted definition of "quality." Nonetheless, both theory and practice identify four fundamental approaches to measuring it:

1. Input Measures: This traditional approach emphasizes the resources available to the university. It assumes that "more resources mean better quality." Staff qualifications include the percentage of professors with doctorates and their reputation. Student selectivity refers to the average success rate of students at the time of enrollment, indicating how competitive the admissions process is. Funding and infrastructure encompass the budget allocated per student, laboratory quality, library funding, and digital resources.

2. Process Measures: This approach assesses the student's "experience" and how learning takes place. Student-teacher ratio: Smaller groups enable more intensive interaction. Teaching methods: The use of innovative and interactive methods rather than passively listening to lectures. Student engagement: The extent to which students participate in research projects and extracurricular activities.

3. Output/Outcome Measures: Today, this approach is considered the most relevant because it measures educational outcomes. Employment rate: How quickly graduates find work in the profession and what their starting salaries are. Skills acquired: Testing critical thinking, problem-solving, and specific professional knowledge upon graduation. Research output: Number of published papers, citations, and patents (this is a dominant factor in the Shanghai List).

4. External Evaluation and Accreditation Quality is often measured through formal verification mechanisms:

- *Accreditation bodies:* National or international agencies that check that programs meet minimum standards. In Europe, the Bologna Process's main goal is to create Quality Assurance (QA) systems in higher education, and many European institutions have made this their primary priority (Lanarès, 2009). The QA systems are managed by QA entities. To protect their integrity and objectivity, QA entities

are generally structured to be only partially autonomous from governments or regulatory agencies. This lowers the danger of political intervention (Hazelkorn & Gibson, 2017).

- *Peer Review*: Assessment by peer experts in the same field. Usually, accreditation bodies use peer-review processes to conduct accreditations and as part of their established quality assurance systems.
- *Rankings*: Ranking is a simple and useful way to evaluate and appraise. A ranking system gives a higher education institution an ordinal number based on how well it performs across a set of performance indicators or characteristics (Nassa & Arora, 2021). This number indicates where the institution ranks among a list of institutions and is a useful, simple way to evaluate and rate them (Docampo, Egret, Cram, 2022). Rankings emerged because people felt there wasn't enough information available to compare colleges and universities (Hazelkorn, 2009) and are the easiest method for people in and out of the field to grasp higher education (Marginson, 2017). Their main goal is to identify the top higher education institutions, or "centres of excellence," which consequently leads to the exclusion of many universities from different countries and continents, especially those ranked lower on the list. Rankings help governments, students, staff, and investors make decisions regarding the quality and direction of institutions. The three most popular ranking systems are: the Academic Ranking of World Universities, Times Higher Education, and Quacquarelli Symonds.

The Academic Ranking of World Universities (ARWU) in 2003 was the first global ranking. It surprised Europe by showing how much better U.S. and U.K. schools were than others (van Raan, 2005). In 2004, the Times Higher Education (THE) and Quacquarelli Symonds (QS) rankings were introduced. Later, they split off to develop their own methods (Moed, 2016).

In parallel with the Big Three rankings, there are many other ranking systems, thematic rankings, leagues, and national rankings, such as the HE Higher Education Ranking, U-Multirank, Webometrics, Financial Times, and others.

The academic debate surrounding the ARWU focuses on three main pillars:

1. **Dominance of the natural sciences**: In a critical analysis, Billaut et al. (2010) point out that the ARWU methodology is strongly biased toward the "hard sciences" (STEM). Because key indicators are based on publications in journals such as Nature and Science, the social sciences and humanities are almost invisible and penalized in this system.
2. **The problem with "elitist" indicators**: Saisana et al. (2011), in a report for the European Commission, analyze the statistical robustness of the lists. They criticize the indicator "Nobel Prize-winning alumni and staff" (which accounts for 30% of the total score) for measuring past glory rather than the current quality of teaching or research. A university can move up or down by 50 places simply because of the death or retirement of a Nobel laureate.

3. **Ignoring teaching:** Hazelkorn (2011) argues that the ARWU measures research output but not the quality of education. According to her, this creates a risk that national policies will neglect students' needs in the race for research prestige.
4. **Language bias:** Rauhvargers (2011), in his report for the European University Association (EUA), emphasizes that reliance on Anglophone databases (Science Citation Index) puts non-English-speaking universities, where research is published in the mother tongue, at a disadvantage.

2.2 The Position of Serbian Higher Education According to the Shanghai Ranking System (ARWU and GRAS)

In 2025, Serbia's international standing in the two Shanghai Ranking systems – ARWU (overall universities) and GRAS (by academic subjects) – looks like this:

- Serbia has one university in the global top 500 universities: University of Belgrade was placed in the 401-500 band worldwide, maintaining the same position as in 2024. It remains Serbia's only university in the top 500.
- University of Novi Sad in 2024 appeared in the 901-1000 band worldwide, but it dropped off the list in 2025
- On the Global Ranking of Academic Subjects (GRAS 2025), Serbian universities appear across multiple disciplines, with the strongest performances led by the University of Belgrade:

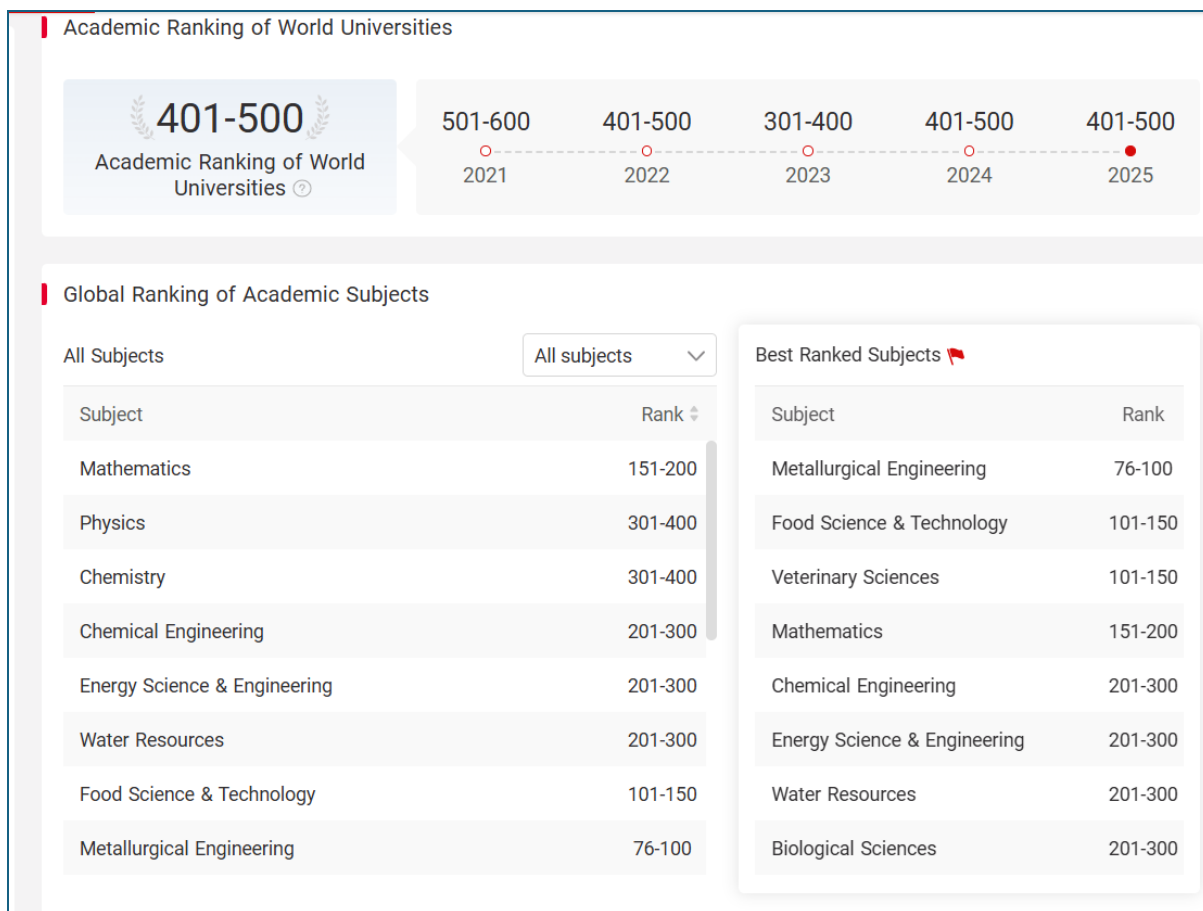


Figure 1: University of Belgrade Results (GRAS), 2025

Furthermore, universities previously regarded as provincial, such as **Kragujevac, Novi Sad, and Niš**, are also strong in certain subjects and appear in the **Global Ranking of Academic Subjects (GRAS 2025)**.



Figure 2: University of Kragujevac Results (GRAS), 2025.

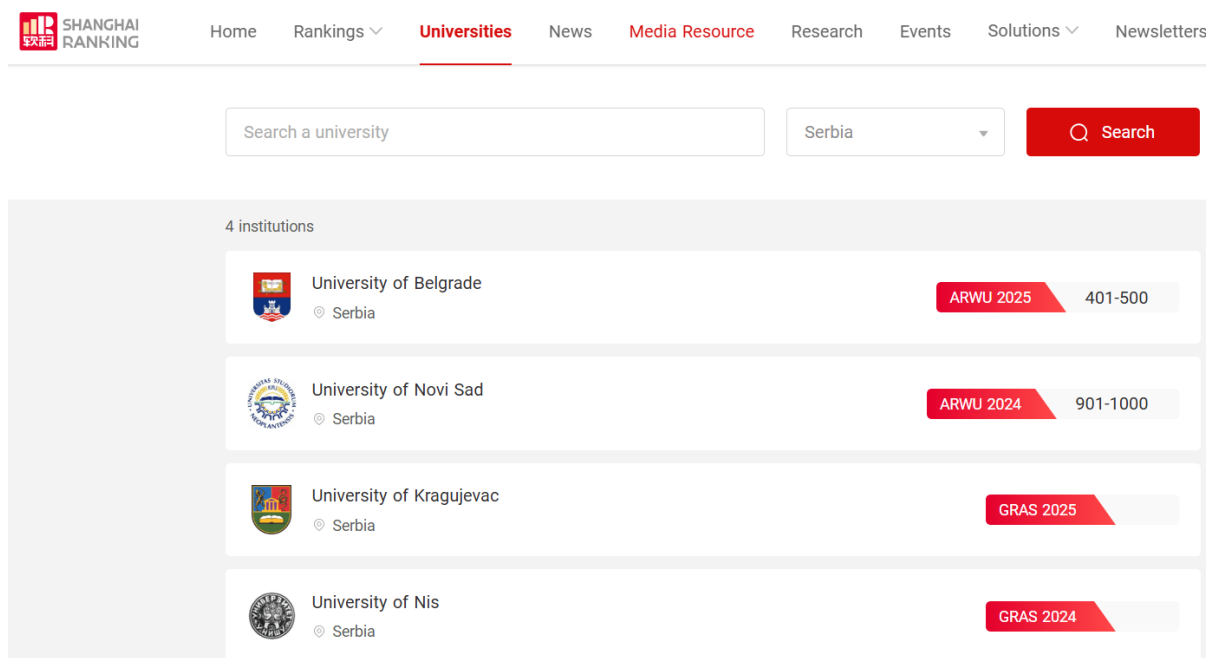


Figure 3: Results of the Global Ranking of Academic Subjects (GRAS), 2024-2025.

Among the six Western Balkan countries (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia), Serbia is generally the top investor in R&D as a

share of GDP, at 0.94% in 2024. While official 2025 data are not yet available, recent trends indicate that Serbia has consistently invested around 1% of GDP in R&D, reflecting a sustained commitment to research, innovation, and knowledge-based economic development. Research investment influences university rankings by providing universities with the resources needed to conduct high-quality research, attract talented researchers, develop research infrastructure, and increase scientific productivity. Because major global rankings, such as QS and Times Higher Education, place considerable emphasis on research performance and academic reputation, countries with higher R&D expenditure generally achieve better ranking outcomes. Studies have found a statistically significant positive relationship between national R&D investment and the number of globally ranked universities, highlighting the importance of sustained research funding for academic excellence and international visibility (Vasilevska Kuzmanovska, M. and Gudachi, V., 2026).

2.3 The ARBU – Academic Ranking of Balkan Universities

The Academic Ranking of Balkan Universities (ARBU) is a platform designed to address the need for a regional ranking of Balkan universities that accounts for their specific contexts. Because many of these institutions are underrepresented in global rankings, the platform aims to fill this gap by providing realistic regional comparisons that reflect their research visibility and impact.

ARBU is an instrument for all universities in the Balkans, including Albania, Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia, Serbia, and Slovenia. 151 universities from the region are part of the ranking system, whose methodology combines its proprietary system with data from Google Scholar rankings.

ARBU relies on a citations-only methodology using Google Scholar, which is considered the most effective for research visibility and impact (Bojadjev et al., 2023). This approach, focused solely on citation data, enables ARBU to remain open and comparable across regions where bibliometric data is less comprehensive worldwide. It also provides a credible way to assess research performance in developing academic systems.

This is particularly important for academic systems such as those in North Macedonia and Montenegro, where no universities are listed in major global rankings. Their current standing can only be assessed through regional comparisons. It also applies to systems like Serbia's, which has some universities included in international rankings, but many are not.

3. Methodology

3.1. Data Sources

The aim of this paper is to examine the position of Serbian universities compared with other universities in the Western Balkans, using data from the 2025 ARBU ranking. The analysis focuses on the regional positioning of 16 Serbian universities based on the academic output (total citations) of 6138 Serbian professors across 7 academic disciplines. According to the **ARBU definitions of the analytical categories used**, a **professor** is any researcher, whether tenured or adjunct, still working or retired, who has registered on Google Scholar with the

appropriate .edu account; a **university** is any institution that offers higher education. This category includes Academies of Sciences and Arts but excludes stand-alone research institutes or community colleges. **Total Citations** is the number of citations registered on Google Scholar as of the date ARBU conducted the research, and Rank Coefficient is the rank of the number of citations relative to the highest-ranked individual/institution.

The paper aims to identify and map the current status and visibility of Serbian universities within the regional higher education landscape through a descriptive overview using ranking data from the ARBU platform as of 30 June 2025. The purpose of the ARBU project is to create an academic ranking of researchers, schools, and universities from the Balkans based on simple criteria: citations of their faculty members. The key aspect is to get a general idea of how many times each professor is cited on Google Scholar, thereby providing a picture at the level of universities and their faculties. ARBU is based on the number of citations on Google Scholar. As simple as that. We use "all" citations of a researcher (ARBU, 2026). The ARBU methodology evaluates three key indicators: 1) Total number of professors, serving as a baseline measure of institutional size; 2) Total citations, reflecting the overall impact of research output; and 3) Citations per professor, a normalized indicator used to measure research efficiency and productivity. By combining absolute and relative measures, the methodology ensures that both scale (total impact) and efficiency (impact per staff member) are captured in the analysis.

Given the use of the ARBU as the main data source for this study, the primary data source is Google Scholar, which provides comprehensive coverage of academic publications and citations. Google Scholar was selected because it captures a broader range of regional research output than databases such as Scopus or Web of Science, which often underrepresent smaller or emerging academic systems. Additional reference points were drawn from the leading international rankings—QS World University Rankings, Times Higher Education (THE) World University Rankings, and the Academic Ranking of World Universities (ARWU)—primarily for comparative purposes (QS Quacquarelli Symonds, 2024; Times Higher Education, 2024; Shanghai Ranking Consultancy, 2024).

3.2. Analytical Approach

The analysis was conducted using a multi-step process:

1. Regional benchmarking assessed universities from seven Western Balkan countries—Albania, Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia, Serbia, and Slovenia—to determine their relative positions based on research output.
2. Serbian universities were ranked nationally using ARBU indicators, enabling the identification of top performers and those lagging behind.
3. Disciplinary breakdown – Data were grouped by academic fields (Medical Sciences, Natural Sciences, Engineering, Agriculture, Humanities, Social Sciences, and Economics/Business) to identify sectoral strengths and weaknesses.

4. The top 25 Serbian scholars were evaluated individually based on citation counts and contributions to the field, and their rankings were compared with those of prominent researchers throughout the Balkan region.

3.3. Limitations

ARBU ranks universities solely on bibliometric indicators, using aggregate Google Scholar citations from affiliated faculty and researchers, which represent “all-time” citations rather than the h-index, field normalization, or teaching indicators. Rankings are updated twice yearly. Because ARBU uses only cumulative Google Scholar citations, it favors older institutions, disciplines with higher citation cultures (medicine, engineering, natural sciences), and universities with large faculty rosters. It doesn’t measure teaching quality, employability, internationalization, or field-normalized impact. ARBU explicitly states that the ranking is “research only”. There are also potential biases associated with Google Scholar metrics such as coverage bias, since it indexes a mix of published papers, preprints, theses, and other grey literature, so the database may not represent a field uniformly. It also may double-count or miscount citations due to duplicate entries, misparsed references, and inclusion of non-scholarly sources.

Although these limitations exist, ARBU's methodology offers a credible, quantifiable approach to measuring and comparing institutional research performance, thereby ensuring transparency, objectivity, and replicability.

4. Results

4.1 Regional Positioning – ARBU 2025 Results

As of **30 June 2025**, ARBU has evaluated **151 universities** from **Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Albania, Kosovo, and North Macedonia**.

Based on the current data published by the ARBU, Serbia has one of the strongest research ecosystems in the Balkans, with a particularly high concentration of citation impact among a small number of flagship institutions.

According to the currently published ARBU university table, Serbian institutions in the ranking include:

Table 1: ARBU 2025 Results

University	Regional Rank#	Number of Professors	Total Citations	Rank Coefficient
University of Belgrade – Serbia	2	3081	2490515	808.35
University of Novi Sad	8	1080	547214	506.68
University of Kragujevac	11	329	398854	1212.32
University of Niš	13	767	376085	490.33

Serbian Academy of Sciences and Arts – Serbia	19	167	131570	787.84
Singidunum University – Serbia	20	216	127945	592.34
Union Nikola Tesla University – Serbia	39	126	31567	250.53
University of Novi Pazar	47	64	24654	385.22
University Privredna Akademija – Serbia	48	48	19060	397.08
Metropolitan University – Serbia	55	30	16366	545.53
Educons University Serbia	58	49	14349	292.84
Alfa BK University – Serbia	66	62	9092	146.65
Megatrend University – Serbia	78	20	5650	282.5
University of Novi Pazar – Serbia	80	64	5200	81.25
University MB – Serbia	101	14	2611	186.5
Belgrade Business and Arts Academy of Applied Sciences – Serbia	109	21	1643	78.24

The structure of Serbian higher education, as reflected in ARBU data presented in table 1, reveals several notable patterns.

First, Serbia's system is highly centralized around the University of Belgrade. With roughly 2.5 million citations, Belgrade alone accounts for approximately two-thirds of the citations for the major Serbian public universities listed here. ARBU itself highlighted Belgrade as the second most-cited university in the Balkans in the 2025 analysis.

Second, Serbia has an unusually strong depth beyond its flagship institution. The presence of four public universities in the Balkan top 15 – Belgrade, Novi Sad, Kragujevac, and Nis – suggests that research capacity is distributed across multiple regional centers rather than being concentrated in the capital. Compared with several neighboring systems, this indicates a national research base.

Third, productivity-adjusted performance tells a different story than total scale. While Belgrade dominates in absolute citations, the University of Kragujevac has the highest citation intensity (1212 citations per listed faculty member), which is substantially above Belgrade's 808. This indicates a smaller yet highly internationally recognized research group. Namely, the University of Belgrade has 3081 professors, while the University of Kragujevac has 329. Cross-referencing this with Table 7 reveals that the leading Serbian researcher, with a ranking coefficient of 100, is affiliated with the University of Kragujevac and receives the most citations.

Fourth, Serbia's private-sector institutions are visible but not system-leading. Universities such as Singidunum University and Metropolitan University appear in the regional ranking,

indicating measurable research output, but their total citation volumes remain far below those of the public research universities.



ARBU
Academic Ranking of Balkan Universities

HOME

1	 University of Zagreb - Croatia		6,363	4,619,105	725.93
2	 University of Belgrade - Serbia		3,081	2,490,515	808.35
3	 University of Ljubljana		1,336	2,082,950	1,559.09
4	University of Split - Croatia		1,155	1,810,012	1,567.11
5	Jožef Stefan International Postgraduate School		416	1,143,404	2,748.57
6	University of Rijeka - Croatia		1,253	667,801	532.96
7	University of Maribor		534	615,908	1,153.39
8	University of Novi Sad		1,080	547,214	506.68
9	University of Sarajevo		2,002	492,884	246.20
10	University of Osijek - Croatia		1,074	470,925	438.48
11	University of Kragujevac		329	398,854	1,212.32
12	Ss. Cyril and Methodius University - Skopje		1,000	396,854	396.85
13	University of Niš		767	376,085	490.33
14	University of Pristina - Hasan Prishtina		902	341,062	378.12
15	University of Montenegro		593	336,243	567.02

Figure 4. Official ranking of the Serbian universities among the first 15 in 2025 according to ARBU

From a system-level perspective, ARBU (Figure 4.) suggests that Serbia has three defining characteristics:

- **A flagship-dominated model centered on Belgrade: The University of Belgrade, as Serbia's flagship university, ranks highly, right between the University of Zagreb and Ljubljana**

- **Strong secondary public research hubs:** Novi Sad, Kragujevac, and Niš
- **A long tail of smaller private and specialized institutions with niche research activity**

4.3 ARBU National Ranking of Universities

4.3.1 Serbian Universities in the ARBU Framework

The table below presents the **national ranking of universities in the Republic of Serbia**, as evaluated by **ARBU 2025**.

Table 2. Efficiency of Serbian Universities (Citations per Professor)

Rank	University	No. of Professors	Total Citations	Rank Coefficient
1	University of Belgrade – Serbia	3081	2490515	808.35
2	University of Novi Sad	1080	547214	506.68
3	University of Kragujevac	329	398854	1212.32
4	University of Niš	767	376085	490.33
5	Serbian Academy of Sciences and Arts – Serbia	167	131570	787.84
6	Singidunum University – Serbia	216	127945	592.34
7	Union Nikola Tesla University – Serbia	126	31567	250.53
8	University of Novi Pazar	64	24654	385.22
9	University Privredna Akademija – Serbia	48	19060	397.08
10	Metropolitan University - Serbia	30	16366	545.53
11	Educons University Serbia	49	14349	292.84
12	Alfa BK University - Serbia	62	9092	146.65
13	Megatrend University - Serbia	20	5650	282.5
14	University of Novi Pazar - Serbia	64	5200	81.25
15	University MB – Serbia	14	2611	186.5
16	Belgrade Business and Arts Academy of Applied Sciences – Serbia	21	1643	78.24

4.3.2 Serbian Universities' Ranking by Academic Field

The following section outlines how universities in the Republic of Serbia perform across different academic fields:

1. Medical Sciences

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	2	University of Belgrade – Serbia	407	892483
2	10	University of Kragujevac	41	133109
3	12	University of Novi Sad	148	108362

2. Natural Sciences

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	2	University of Belgrade – Serbia	532	525336
2	11	University of Novi Sad	164	103275
3	14	University of Niš	83	57148

3. Humanities and Arts

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	2	University of Belgrade – Serbia	444	79702
2	9	University of Niš	182	32024
3	10	University of Novi Sad	176	22707

4. Social Sciences

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	3	University of Belgrade – Serbia	292	139579
2	3	University of Novi Sad	120	40332
3	8	University of Niš	81	24288

5. Agriculture and Forestry

National Rank	Regional Rank	University	No. of Professors	Total Citations
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1	2	University of Belgrade – Serbia	152	88067
2	6	University of Novi Sad	42	20894
3	13	University of Kragujevac	3	4432

6. Engineering

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	4	University of Belgrade – Serbia	950	627855
2	7	University of Novi Sad	315	209070
3	8	University of Niš	293	179803

7. Economy, Business, and Organizational Sciences

National Rank	Regional Rank	University	No. of Professors	Total Citations
1	3	University of Kragujevac	43	159943
2	4	University of Belgrade – Serbia	304	137493
3	9	University of Novi Sad	115	42574

A field-by-field analysis of ARBU shows that Serbia's higher education system is not just "strong overall." It is structurally diverse, with clear disciplinary clusters. ARBU classifies universities into seven scientific fields based on Google Scholar citations of affiliated researchers.

The most important finding is that **the University of Belgrade is Serbia's anchor institution across almost every field**, while the secondary universities each occupy specialized niches rather than simply being smaller versions of Belgrade. Belgrade's strength is institutional diversity, with almost every research-intensive faculty contributing to the overall citation profile.

In the **medical sciences**, Serbia is exceptionally competitive: Belgrade ranks 2nd in the Balkans, with 892483 citations from 407 researchers. That places it ahead of most of the regional competitors.

University of Kragujevac ranks 10th regionally, University of Novi Sad 12th and University of Nis 16th. That means Serbia places four institutions in the Balkan top 20 for medicine – an

unusually broad medical research base for a country of its size.

This suggests that Serbian medical research is not concentrated only in Belgrade. Clinical medicine, public health, dentistry, and biomedical work appear to be distributed across the country, especially through Kragujevac's medical faculty, which helps explain the unusually high citations per researcher in the overall ARBU ranking.

Engineering and Technology appear to be Serbia's strongest **historical** discipline. ARBU's own 2025 analysis specifically highlights Belgrade's legacy in engineering and natural sciences as the main driver of its 2.5M+ citations and #2 regional position.

Within Serbia, engineering appears to have a two-center structure: Belgrade remains a prestigious center, particularly in electrical engineering, materials science, mining, and computer science, while Novi Sad is the main challenger, particularly in applied engineering and the technical sciences.

Natural sciences are another Serbian strength. Belgrade's citation base in mathematics, physics, chemistry, and biology remains among the strongest in the region.

The social sciences and the humanities are more centralized. While all major Serbian public universities are active here, citation concentration is much stronger in Belgrade. **Economics and business** likely follow a hybrid model. ARBU treats economics separately from other social sciences, and although Serbia's public universities all have established economics faculties, private institutions, especially Singidunum University, are more visible here than in medicine or the natural sciences. Singidunum's strong overall citation profile suggests that much of Serbia's private sector is concentrated in management and business-related fields.

Agriculture and life sciences appear split between Belgrade and Novi Sad. Novi Sad's strong tradition in agriculture and food science makes it likely to be Serbia's second-most important life sciences hub.

5. Results: Serbian Researchers

5.1 Researchers' Ranking in the National Context

ARBU ranks individual professors/researchers using total Google Scholar citations ("all-time citations"), then normalizes scores relative to the top-ranked researcher in the country. ARBU explicitly states that professors, researchers, assistants, and doctoral researchers with a primary academic affiliation can all be included.

The **leading 25 Serbian researchers for 2025** are presented in the following table:

Table 7. Leading Serbian Researchers

Rank	Professor Name	University	Field of Interest	Citations points
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1	Mihajlo Jakovljevic MD Ph.D. MAE	University of Kragujevac	Economics, Business and Organizational Science	100
2	Petar Seferovic	University of Belgrade – Serbia	Medical Sciences	82.92
3	Milena Ilic	University of Kragujevac	Medical Sciences	49.13
4	Eleonora Dubljanin	University of Belgrade – Serbia	Medical Sciences	42.37
5	Irena M Ilic	University of Belgrade – Serbia	Medical Sciences	40.2
6	Tatjana Potpara	University of Belgrade – Serbia	Medical Sciences	35.36
7	Isidora Vujcic	University of Belgrade – Serbia	Medical Sciences	33.62
8	Valentina Arsic Arsenijevic	University of Belgrade – Serbia	Medical Sciences	22.14
9	Dragan Pamucar	University of Belgrade – Serbia	Economics, Business and Organizational Science	20.17
10	Vladimir Trajkovic	University of Belgrade – Serbia	Medical Sciences	18.78
11	Arsen Ristic	University of Belgrade – Serbia	Medical Sciences	17.56
12	Rade Vukovic	University of Belgrade – Serbia	Medical Sciences	16.16
13	Ana Vukovic	University of Belgrade – Serbia	Medical Sciences	15.02
14	Goran Knezevic	University of Belgrade – Serbia	Social Sciences	14.09
15	Endre Pap	Singidunum University – Serbia	Engineering and Technology	12.91
16	Ivanka Markovic	University of Belgrade – Serbia	Medical Sciences	12.46
17	Velimir R. Radmilovic	University of Belgrade – Serbia	Engineering and Technology	10.83
18	Stojan Radenovic	University of Belgrade – Serbia	Engineering and Technology	10.78
19	Ljiljana Lazarevic	University of Belgrade – Serbia	Social Sciences	10.77
20	Mirjana Rajilic-Stojanovic	University of Belgrade – Serbia	Medical Sciences	9.08

21	Nebojsa Arsenijevic	University of Kragujevac	Medical Sciences	8.95
22	Drazen B. Zimonjic	Serbian Academy of Sciences and Arts – Serbia	Medical Sciences	8.49
23	Vlada B. Veljkovic	University of Niš	Engineering and Technology	8.03
24	Viktor Nedovic	University of Belgrade – Serbia	Engineering and Technology	7.73
25	Prof.Branko Bugarski	University of Belgrade – Serbia	Engineering and Technology	7.59

5.1.1 Institutional Contribution of the Researchers

As presented in Table 8, among the top 25 Serbian researchers, the University of Belgrade accounts for 19 professors, who produce 69% of the total research output. The other key institutions are the University of Kragujevac, the University of Niš, the Serbian Academy of Sciences and Arts, and Singidunum University.

Table 8. Institutional Contribution of Top 25 Researchers

University	Citations	Participation	Professors
University of Belgrade	797950	69%	19
University of Kragujevac	300305	26%	3
University of Niš	15255	1%	1
Serbian Academy of Sciences and Arts	16128	1%	1
Singidunum University	24525	2%	1
Total	1154163	100%	25

5.1.2 Dominant Scientific Fields

An analysis of the research fields reveals the **absolute dominance of Medical Sciences**, which accounts for nearly **68% of total citations**. Out of the top six Serbian researchers, five are in medicine or public health, followed by Economics, Business and Organizational Science (19.78%).

Table 9. Structure of Research Output by Field

Field	Citations	% of Total
Medical Sciences	783132	67.85%
Engineering & Technology	95517	8.28%
Economics, Business and Organizational Science	228287	19.78%
Social Sciences	47227	4.09%
Total	1154163	100%

5.2 Serbian Researchers in the Regional Context

Using ARBU's 2025 Professors Ranking, we can structure the Balkan research elite by country and profile the national research fields and interests.

Table 10. Top 25 Researchers in the region (Ex-Yugoslavia + Albania)

#	Professor Name	University	Field of Interest	Citation Points	Citations
1	Marko Mikuz	Jožef Stefan Institute	Natural Sciences	100	289674
2	Ivica Puljak	University of Split – Croatia	Engineering & Technology	91.92	266268
3	Nikola Godinovic	University of Split – Croatia	Engineering & Technology	90.03	260794
4	Marko Kovac	University of Split – Croatia	Natural Sciences	73.62	213 258
5	Mihajlo Jakovljevic, MD, Ph.D., MAE	University of Kragujevac	Economics	53.51	155005
6	Gani Bajraktari	University of Pristina	Medical Sciences	44.90	130064
7	Petar Seferovic	University of Belgrade – Serbia	Medical Sciences	44.37	128528

8	Tomislav Ševa	University of Zagreb – Croatia	Natural Sciences	42.30	122532
9	Željko Reiner	University of Zagreb – Croatia	Medical Sciences	39.93	115667
10	Ozren Polašek	University of Split – Croatia	Medical Sciences	39.15	113407
11	Mirko Planinic	University of Zagreb – Croatia	Natural Sciences	39.05	113118
12	Shpëtim Hasallari	University of Applied Sciences, Ferizaj	Economics	32.70	94723
13	Mile Dželalija	University of Split – Croatia	Natural Sciences	32.05	92841
14	Toni Ščulac	University of Split – Croatia	Natural Sciences	31.54	91363
15	Samo Stanic	University of Nova Gorica	Natural Sciences	30.14	87308
16	Sven Gotovac	University of Split – Croatia	Engineering & Technology	29.14	84411
17	Nikola Poljak	University of Zagreb – Croatia	Natural Sciences	28.55	82702
18	Linda Vicković	University of Split – Croatia	Engineering & Technology	26.80	77633
19	Milena Ilić	University of Kragujevac	Medical Sciences	26.29	76155
20	Olja Đorđić	University of Banja Luka	Natural Sciences	25.50	73867
21	Mario Šekerija	University of Zagreb – Croatia	Medical Sciences	24.51	70999
22	Silva Tafaj	University of Medicine of Tirana	Medical Sciences	23.13	67002
23	Eleonora Dubljanin	University of	Medical	22.67	65669

		Belgrade – Serbia	Sciences		
24	Irena M. Ilić	University of Belgrade – Serbia	Medical Sciences	21.51	62309
25	Danilo Zavrtanik	University of Nova Gorica	Natural Sciences	20.73	60049

The following list presents the structure of researchers by country:

Table 11. Structure of researchers by country

Croatia	Serbia	Slovenia	Kosovo	Albania	Bosnia
13	5	3	2	1	1
52%	20%	12%	8%	4%	4%

According to ARBU's data, Serbia's academic elite is smaller but visible and strongly dominated by the medical sciences. Serbia has 5 researchers among the top 25, with 3 from the University of Belgrade and 2 from the University of Kragujevac.

All 5 leading Serbian researchers have generated 597684 citations, with a researcher from the University of Kragujevac generating 189970.

6. Conclusions

The findings of the research provide a differentiated picture of Serbian higher education within the broader Balkan academic landscape. The ARBU model used shows that **Serbian universities have a strong regional position**, led by the University of Belgrade, while Novi Sad and Kragujevac demonstrate significant research capacity beyond the capital. Belgrade leads nationally in most academic fields, whereas Kragujevac leads in Economics, Business and Organizational Sciences, indicating that disciplinary excellence is not necessarily determined by institutional size or national prestige.

Serbian research excellence appears relatively concentrated. Five Serbian researchers are among the ARBU regional top 25, with their combined 597,684 citations strongly influenced by one researcher from Kragujevac, who accounts for approximately 31.8% of this total. This indicates both the strength and vulnerability of a system in which international visibility depends substantially on a relatively small academic elite. The underrepresentation of women - only six among the top 25 researchers, three of them being from Serbia- also points to a need for greater attention to gender balance in research careers and recognition.

These findings have several **practical implications**.

For policymakers, research funding should combine support for established centers of excellence with targeted investment in emerging disciplinary strengths and research capacities outside the capital. Policies should also encourage inter-university and international research networks and support the development of early and mid-career researchers. **For university leaders**, the results highlight the value of identifying distinctive disciplinary strengths, investing strategically in high-performing research areas, and transforming individual excellence into stable research teams and institutional capacity. **Researchers** can use bibliometric information as a diagnostic tool for strengthening collaboration, international visibility, and research impact.

The study has several **limitations**. ARBU measures research and citation performance primarily and therefore cannot be interpreted as a comprehensive measure of university quality. Reliance on Google Scholar may introduce problems related to duplicate records, author identification, self-citations, and differences in disciplinary citation practices. Absolute citation counts also favor larger institutions and fields with larger citation rates. Finally, the cross-sectional nature of the 2025 data limits conclusions about long-term trends and causality; therefore, future applications of ARBU should develop longitudinal analyses.

The **relevance of the study** lies in demonstrating the value of a regional approach towards measuring academic performance. ARBU contributes to understanding Balkan higher education by establishing a common bibliometric lens through which universities from different national systems can be examined comparatively. Rather than simply producing another league table, ARBU reveals how research capacity is distributed across the region, where academic excellence is concentrated, which institutions demonstrate distinctive disciplinary strengths, and how national academic leaders compare within the regional system. In this sense, ARBU provides an additional layer of evidence for understanding the structure, differentiation and dynamics of Balkan higher education and offers policymakers and university leaders a practical basis for identifying regional strengths, gaps and opportunities for cooperation.

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