

## RANKING BALTIC STATES RESEARCHERS

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### ABSTRACT

In this article, using the h-index and the total number of citations, the best 10 Lithuanian, Latvian and Estonian researchers from several disciplines are ranked. The list may be formed based on the h-index and the total number of citations, given in Web of Science, Scopus, Publish or Perish Program and Google Scholar database. Data for the first 10 researchers are presented. Google Scholar is the most complete. Therefore, to define a single indicator, h-index calculated by Google Scholar may be a good and simple one. The author chooses the Google Scholar database as it is the broadest one.

### KEY WORDS

ranking Baltic states researchers, Lithuanian, Latvian and Estonian researchers, h-index, number of citations, Google Scholar database

### CLASSIFICATION

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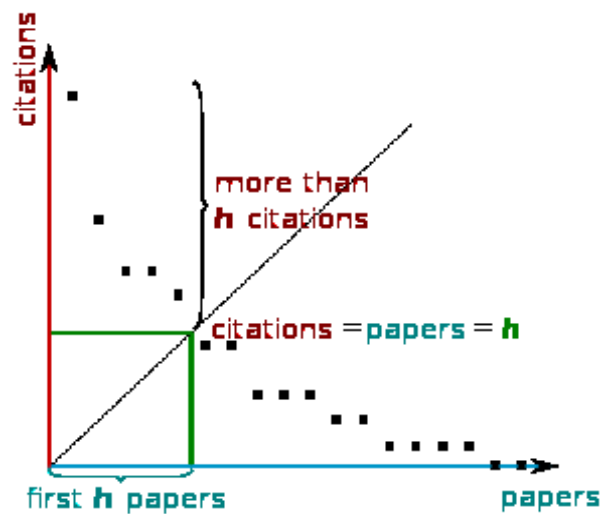
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## INTRODUCTION

The Academic Ranking of World Universities (ARWU) was first published in June 2003 by the Center for World-Class Universities (CWCU), Graduate School of Education (formerly the Institute of Higher Education) of Shanghai Jiao Tong University, China [1]. Due to the requests in a variety of activities ranking researchers in different disciplines of science become very important in last decade. Ranking is possible on different criteria: number of published articles, number of citations, h-index, g-index, etc.

One of these measures is h-index which includes both the productivity and citation impact of the publications of a scientist. The index was suggested in 2005 by Jorge E. Hirsch [2]:

“A scientist has index  $h$  if  $h$  of his/her  $N_p$  papers have at least  $h$  citations each, and the other  $(N_p-h)$  papers have no more than  $h$  citations each.” (Figure 1.)



**Figure 1.** Graphical presentation of h-index.

h-index can be determined according to the different sources:

- Google Scholar,
- WOS (Web of Science),
- Scopus,
- Publish or Perish Program.

In this article the list of the best 10 Lithuanian, Latvian and Estonian (three Baltic states) researchers from several disciplines is ranked. List covers researchers from natural sciences, techniques and human sciences.

**Table 1.** Rate of citations in Scopus and Web of Science according to Google Scholar ones.

| Discipline      | Scopus citations as percentage of Google Scholar citations, % | Web of Science citations as percentage of Google Scholar citations, % |
|-----------------|---|---|
| Humanities      | 11,5  | 7,0   |
| Social Sciences | 30,0  | 22,7  |
| Engineering     | 57,6  | 45,7  |
| Sciences        | 64,2  | 65,6  |
| Life Sciences   | 70,5  | 66,8  |

As a primary source Google Scholar [3] has been used [4-25]. The author chooses the Google Scholar database as it is the widest (see Table 1). Introduced by Google in 2004, Google Scholar has become a very popular alternative data source. Google Scholar is the most complete. Therefore, to define a single indicator, h-index calculated by Google Scholar may be a good and simple one. Ranking is possible to be based on h-index (primary) and total number of citations.

The article is organized as follows:

in Section 1 the Introduction is given,

in Section 2 the Ranking list of best 10 Lithuanian researchers,

in Section 3 the Ranking list of best 10 Latvian researchers,

in Section 4 the Ranking list of best 10 Estonian researchers is considered.

Conclusions are given in Section 5.

## RANKING LIST OF THE BEST 10 LITHUANIAN RESEARCHERS

In the following text detail information about Lithuanian researchers on the list based on Google Scholar are presented [26]. List of 10 best Lithuanian researchers can be constructed based on different sources. The primary condition for ranking is the h-index and the total citation number of the publications.

Researchers, from Google Scholar data, were ranked according h-index in decreasing order as a first criteria and then by the total number of citations (Table 2).

**Table 2.** Ranking list of best 10 Lithuanian researchers from several disciplines, from Google Scholar.

| No. | Researchers           | h-index | Citations |
|-----|-----------------------|---------|-----------|
| 1.  | Edmundas K. Zavadskas | 62      | 13 681    |
| 2.  | Algirdas Avižienis    | 45      | 16 143    |
| 3.  | Arunas Ramanavicius   | 41      | 5 572     |
| 4.  | Zenonas Turskis       | 39      | 5 400     |
| 5.  | Artūras Kaklauskas    | 35      | 4 840     |
| 6.  | Saulius Klimašauskas  | 33      | 4 733     |
| 7.  | Kestutis Pyragas      | 29      | 8 087     |
| 8.  | Česlovas Venclovas    | 28      | 3 073     |
| 9.  | Arunas Krotkus        | 27      | 2 829     |
| 10. | Gintaras Valušis      | 27      | 2 718     |

## RANKING LIST OF THE BEST 10 LATVIAN RESEARCHERS

In the following text detail information about Latvian researchers on the list based on Google Scholar are presented [27]. Latvian Researchers, from Google Scholar data, were ranked according h-index in decreasing order as a first criteria and then by the total number of citations (Table 3).

## RANKING LIST OF THE BEST 10 ESTONIAN RESEARCHERS

In the following text detail information about Estonian researchers on the list based on Google Scholar are presented [28].

Estonian Researchers, from Google Scholar data, were ranked according h-index in decreasing order as a first criteria and then by the total number of citations (Table 4).

**Table 3.** Ranking list of best 10 Latvian researchers from several disciplines, from Google Scholar.

| No. | Researcher       | h-index | Citations |
|-----|------------------|---------|-----------|
| 1.  | Eugene Kotomin   | 49      | 8 855     |
| 2.  | Susanne Iwarsson | 46      | 7 340     |
| 3.  | Andris Ambainis  | 38      | 7 028     |
| 4.  | Alexei Kuzmin    | 31      | 3 240     |
| 5.  | Juris Purans     | 30      | 2 674     |
| 6.  | Janis Klovins    | 27      | 3 610     |
| 7.  | Indrikis Krams   | 27      | 2 081     |
| 8.  | Rusins Freivalds | 26      | 3 029     |
| 9.  | Anatoly Trukhin  | 25      | 2 080     |
| 10. | Andris Auliciems | 23      | 2 051     |

**Table 4.** Ranking list of best 10 Estonian researchers from several disciplines, from Google Scholar.

| No. | Researcher      | h-index | Citations |
|-----|-----------------|---------|-----------|
| 1.  | Risto Näätänen  | 124     | 58 489    |
| 2.  | Martti Raidal   | 121     | 76 095    |
| 3.  | Andres Metspalu | 84      | 31 373    |
| 4.  | Ülo Niinemets   | 75      | 23 336    |
| 5.  | Tõnu Esko       | 63      | 24 177    |
| 6.  | Marlon Dumas    | 63      | 21 738    |
| 7.  | Martin Zobel    | 62      | 15 922    |
| 8.  | Jüri Allik      | 55      | 15 456    |
| 9.  | Reedik Mägi     | 52      | 17 710    |
| 10. | Pärt Peterson   | 51      | 8 850     |

## CONCLUSIONS

Ranking of the best 10 Lithuanian, Latvian and Estonian (three Baltic states) researchers from several disciplines using Google Scholar database is presented. The ranking is made based primary on h-index and total citation number based on the database in Google Scholar. Researches ranked first by h-index in decreasing order and then by the total number of citations. Based on the Tables 2, 3 and 4, in accordance with the h-index, the country's ranking is the following: 1. Estonian, 2. Lithuanian, 3. Latvian.

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